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Vol. 26
June 1992

JOURNAL OF
GLENN T. SEABORG
Chairman, U.S. Atomic Energy Commission, 1961 - 1971

Appendix
Additional Documents for Volumes 1-25

Lawrence Berkeley Laboratory
University of California

Prepared for the U.S. Department of Energy under Contract DE-AC03-76SF00098

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JOURNAL
OF

GLENN T. SEABORG

Chairman, U. S. Atomic Energy Commission
1961 - 1971

VOLUME 26

Appendix
Additional Documents for Volumes 1-25

This work was supported by the U.S. Department of Energy
under Contract DE-AC03-76SF00098

PREFACE

The 25 volumes of the journal I kept on a daily basis during the ten years (1961-1971) that I served as chairman of the U.S. Atomic Energy Commission have been published (in 1989-1990) as a Lawrence Berkeley Laboratory report (designated as PUB-625, Volumes. 1-25). The daily entries were augmented by attachments in numerous categories--selected incoming and outgoing correspondence and other relevant documents, including Summaries of Commission Meetings and Notes on Information Meetings, and documents relating to relations with other governmental agencies. The Preface to each of the 25 volumes describes the security clearance and deletion procedure to which the journal was subjected prior to publication.

Although this clearance procedure started in 1985, it had not been completed by 1989. At that time I decided to proceed with the publication (with indicated deletions and omissions) with the intention of publishing the hundreds of missing portions, when these were returned, in an additional volume or volumes. Although there are still a substantial number of these that have not been returned (1992), there are a sufficient number to fill the present volume.

The documents that are missing throughout the 25 volumes are each identified with a "Cross Reference Sheet," giving a very brief description; thus, those that have now been cleared can be identified in this volume. You will also note that frequently the Reference Sheets have a notation "DE and date;" this refers to a date of entry in my diary. For those documents that have not been returned, this volume contains, in many cases, corresponding sheets labeled "Declassified Reference Sheet" or "Not Declassifiable Reference Sheet." (For a number of these there is no available information.) The returned journal entries or supporting documents often have deleted sections that are identified with description "Deleted." Some of the returned documents are not identified explicitly anywhere in the 25 volumes but are included here because of their obvious relevance. Whenever possible in this volume, on the first page of a document, on the upper lefthand corner, appears a volume, page number, which will provide additional cross-reference information for the reader.

Hopefully, there will be another Appendix volume when additional documents are returned and when, due to the changed international situation, many of the deleted portions are restored and presently "Not declassifiable documents" become "declassifiable."

See 1, 19

00-2101
COFG/D2F/30

UNCLASSIFIED

DC FILE
00-2101

February 16, 1961

This document consists of 4 pages
No. 3 of 8 Copies, Series A

PERSONAL AND CONFIDENTIAL

Dear Mr. President:

This memorandum constitutes the first of a series of informal weekly reports to you on developments of importance and interest in the atomic energy program. I will, of course, keep you or your staff informed of significant developments which occur between these weekly submissions.

1. Joint Committee on Atomic Energy Study of Civilian Control of Nuclear Weapons. (SECRET UNCLASSIFIED

In the Fall of 1960, the JCAE made a trip to military bases in seven European countries. A report is now being prepared by the JCAE on the manner in which nuclear weapons are being integrated by the NATO Defense.* It is believed that this report will raise basic questions on the organization and purpose of NATO. The JCAE also has under preparation a more encompassing study of the present viability of the concept of civilian control of the manufacture and storage of nuclear weapons, as well as other atomic energy applications.

2. International Activities. ([redacted] UNCLASSIFIED

a. The U. S. Representative to the International Atomic Energy Agency -- Mr. Paul Foster -- left Vienna last week to return to the United States. Mr. Foster carries the personal rank of Ambassador. It is expected that he will resign in the coming months and I am currently working with the Department of State and members of your staff to find an appropriate candidate for his replacement.

---

*We understand that you have now received a copy of this report.

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BY AUTH. DOE
BY J. Holroyd DATE 3/22/88
J. Diaz 10/22/90

UNCLASSIFIED

b. The term of Sterling Cole as Director General of the IAEA expires in 1961. The Agency Board of Governors must decide upon his successor at its meeting in June. (UNCLASSIFIED).

It does not appear that the Commission and the Department of State will recommend that Mr. Cole seek a second term. He has not been informed of this. I am currently working with Dr. Wiesner and Dr. Whitman to find a candidate whom the U.S. could support and who would be acceptable to the Soviet Union. [redacted].

3. Congressional. (UNCLASSIFIED)

The JCAE has not yet organized. It has not held its internal organization meeting and, until this occurs, the Committee cannot hold formal hearings, including my confirmation hearings. *

4. Congressional. ([redacted])

The JCAE has indicated its desire to hold a weapons briefing in the near future. There is a strong possibility that at such a briefing the JCAE will want views on our continued test moratorium, as well as on nuclear weapons dispersal.

5. Study of AEC Regulatory Organization and Operations. (UNCLASSIFIED)

A study of the AEC Regulatory function has been completed and forwarded to the JCAE. The study recommends a separation of the promotional activities of the Commission from the Regulatory activities by having both the General Manager and a Director of Regulation report directly to the Commission.

*Since completion of the report we have been informed that my confirmation hearings are schuled for 10:00 a.m., Thursday, February 23.

UNCLASSIFIED

UNCLASSIFIED

As a result of discussions with Budget Director Bell, we are not submitting requests for legislation to provide for these proposed changes. Rather, we propose to handle them internally and within our present authority.

6. Possibility of Work Stoppage at the Hanford Plutonium Operation. (UNCLASSIFIED)

On October 25, 1960, the Atomic Energy Labor Management Relations Panel intervened in negotiations between the General Electric Company and the Hanford Atomic Metal Trades Council (AFL-CIO). In December and in February the Panel convened and issued recommendations. The Council is prepared to accept all of the recommendations of the Panel and to conclude a new agreement on this basis. General Electric, however, has indicated that the recommendations are not acceptable to it.

If the Panel recommendations are not accepted by both parties by March 12, a work stoppage could occur. The Commission is actively exploring possible means of avoiding or meeting this eventuality.

7. Congressional Hearings Under Section 202 of Atomic Energy Act. (UNCLASSIFIED)

Under Section 202 of the Atomic Energy Act, hearings are held annually to receive information concerning "the development, growth and state of the Atomic Energy Industry." Testimony for this hearing has been prepared and forwarded to the JCAE. The testimony indicates that considerable technical progress has been realized during the past year, but that there have been delays in construction of most of the civilian power reactor projects.

8. Prime Minister Menzies' Interest in Project Plowshare. (UNCLASSIFIED)

Prime Minister Menzies of Australia has expressed an interest in AEC's Project

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Plowshare -- use of nuclear explosives for peaceful purposes. Information received from Dr. Mark Oliphant, Member of the Australian Parliament, indicates that Mr. Menzies intends to discuss the program with the President during his forthcoming visit and to raise the possibility of cooperation.

Glenn T. Seaborg

UNCLASSIFIED

HCBrown/WLO/hm

This document consists of 2 pages
No. 4 of 8 Copies, Series A
SCF 6/DDF/30

[redacted]

February 23, 1961

[redacted]

Dear Mr. President:

The following is the second informal weekly report to you on the status of developments in the atomic energy program.

1. Current Questions Concerning Certain Aspects of the Military Use of Atomic Energy. [redacted]

Following a meeting held on Wednesday, February 22, with Under Secretary Gilpatric, Assistant Secretary Nitze, and General Loper of the Department of Defense, and Mr. Bundy and Dr. Wiesner of your staff, we will be giving further consideration to certain outstanding questions regarding the military use of atomic energy; namely, dispersal of weapons abroad, future levels of production of weapons (and consequent action by the AEC to make nuclear materials available), use of atomic weapons in the NATO context, and the manned nuclear-powered aircraft program. This group plans to meet again shortly to continue consideration of these matters and their relation to other studies currently under way.

2. Scientific Exchange with the Soviet Union. (UNCLASSIFIED)

After seeing Ambassador Thompson on Thursday, February 16, I have decided that we should attempt to initiate the next step of an existing program of cooperation with the Soviet Union -- an exchange of visits by experts in the field of atomic waste disposal.

JCAE Hearings on Military Cooperation with Italy. [redacted]

The JCAE has scheduled a hearing on February 27 to review the proposed agreement with Italy pursuant to Section 144 (b) of the Atomic Energy Act, under which Restricted Data could be transmitted to Italy. State Department, Defense Department, and Atomic Energy Commission will testify.

[redacted]

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[redacted]

4. Confirmation Hearings. (UNCLASSIFIED)

My confirmation hearings were concluded today in a very satisfactory manner. The Committee reiterated its interest in the AEC keeping the JCAE "currently and fully informed." The Committee also expressed concurrence with my feeling that current emphasis on the high energy physics program must not result in lack of attention to other programs, such as low energy nuclear physics, chemistry, and materials research.

5. JCAE Begins Section 202 Hearings. (UNCLASSIFIED)

The JCAE commenced Section 202 Hearings on the "development, growth, and state of the atomic energy industry" on February 21. They heard testimony from Commission witnesses on the civilian nuclear power program. Although the hearing was friendly in tone, the Committee expressed dissatisfaction with what they regarded as inadequate progress in the civilian power program. There were also indications of strong interest in moving ahead with the Rover Project.

6. Hearings Scheduled on Project Rover. (UNCLASSIFIED)

The House Committee on Science and Astronautics has scheduled open hearings on the application of nuclear propulsion to space (Project Rover), which will begin February 27. I have been asked to appear on February 28. The Joint Committee on Atomic Energy is expected to hold closed hearings a week or two later on this program. These hearings are expected to cover several very basic policy issues with respect to administrative arrangements between AEC and NASA, scheduling of the project, especially with respect to initial flight test, and over-all importance of the program.

Glenn T. Seaborg

[redacted]

WLO/hm

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March 2, 1961

[redacted]

Dear Mr. President:

The following is the third informal weekly report to you on the status of developments in the atomic energy program.

1. Manned Nuclear Aircraft Program. [redacted]

I met on Tuesday, February 28, with Under Secretary of Defense Gilpatric and Dr. York. They requested AEC to make the selection of either the direct or indirect cycle reactor for use in the manned nuclear powered aircraft and accept responsibility for funding and managing the development of the complete power plant, including the jet propulsion engine. After discussion of this matter with both DOD and BOB the Commission has suggested to the Department of Defense that the implications of this matter are of sufficient importance to the national security and national economy to warrant discussing them with you prior to proceeding with a cycle selection. Dr. Wiesner is arranging this.

2. Nuclear Rocket Propulsion Engine - Project Rover. (UNCLASSIFIED)

I strongly suspect that both the House and Senate space committees will press for a flight test of the nuclear rocket propulsion engine at the earliest feasible date. They will probably become quite concerned when they learn that the present AEC and NASA budget does not provide monies which lead to a flight test. This is a matter that I am discussing with Mr. Bell and Dr. Wiesner.

3. Arrangements with Dr. Leland J. Haworth. (UNCLASSIFIED)

I have discussed with Dr. Haworth his assuming duties as a Commissioner on or about April 1 if there is no delay in Senate confirmation.

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4. JCAE Hearing on Military Cooperation with Italy. ([redacted])

During a hearing on March 1 on a proposed military agreement with Italy providing for transfer of Restricted Data,

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The Committee Members also appeared to be disturbed by the vulnerability DELETED in NATO custody with regard to sabotage and possible raids as indicated in the JCAE report of its trip to NATO countries.

5. JCAE Hearings Scheduled. (UNCLASSIFIED)

I am advised that the JCAE schedule of hearings during the next week will include the following:

Monday, March 6 - Executive session on status of nuclear weapons development program in the light of the nuclear test suspension. Testimony primarily by directors of AEC weapons laboratories.

Wednesday, March 8 - Executive session on the status and future of the nuclear manned aircraft program. Testimony from AEC, DOD and industrial contractors.

Glenn T. Seaborg

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

March 2, 1961

Dear Mr. President:

In my weekly report today I mentioned an executive session would be held by the Joint Committee on Atomic Energy on the status of nuclear weapons development program in the light of the nuclear test suspension.

I propose to take advantage of the excellent opportunity this hearing affords to introduce routinely during the course of the hearing, information on the hydro-nuclear experimentation being carried out in our laboratories so that the entire membership of the Joint Committee on Atomic Energy can become informed of this experimentation. It is my understanding that this would conform with your expressed wish that the excessive secrecy about this experimentation be lifted somewhat in order to improve our laboratory situation where some of our scientists may have a guilty feeling because of the extreme secrecy surrounding this nuclear weapons development work. I am also informing Dr. Wiesner of my intention in this matter.

Cordially yours,

Glenn T. Seaborg

The President
The White House

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DATE 10/24/90

See 1, 48

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[redacted] SOF 6/62F

Approved in S - 3/13/61

DEPARTMENT OF STATE

Memorandum of Conversation

DATE: March 2, 1961.

SUBJECT: MEETING OF PRINCIPALS

PARTICIPANTS: See Attached List

COPIES TO:

S/S
G
S/P - Mr. McGhee
S/AE - Mr. Farley
D - Mr. Gullion, Mr. Dean
D - Mr. Spiers (3)
EUR - Mr. Kohler
IO - Mr. Cleveland
Dept. of Def. - Mr. McNamara
CIA - Mr. Dulles
AEC - Mr. Seaborg
W.H. - Dr. Wiesner, Mr. Bundy
Mr. McCloy
Amcongen Geneva NUCDEL - Mr. Whitten

Secretary Rusk noted that the President had indicated a serious interest in seeing what could be accomplished in getting an agreement in the nuclear test conference. The Principals had the task of putting Mr. Arthur Dean, the U.S. Representative to the Nuclear Test Talks, in a position both to protect American interests and to get agreement with the Soviets if this is possible. Secretary Rusk remarked that it would be important to find points of agreement genuinely satisfactory to both sides since we know there are many areas where this will be impossible. He then commented on the relevance of the nuclear test conference to disarmament, recognizing that while the history of disarmament had not been encouraging, our people and others hoped for the limitation of armaments at lower levels. Many dangerous problems were involved in disarmament; one was the tendency of democracies to disarm at the drop of a hat. Secretary Rusk nevertheless felt it might be in our interest to accept an arms control measure if it could be done at this time. Secretary Rusk then asked Mr. McCloy for his views on the nuclear test conference.

Mr. McCloy remarked that while everything had not been irrevocably decided with respect to seeking agreement in the nuclear test conference, the President had recognized

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J. Diaz 9/25/90
REVIEWED BY DATE
*Ltr. ACOB, Smith To DOE, D.C. Gilbert 5/2/88
Hahn 10/1/90

that his request for postponement of the opening date of the negotiations implied that the U.S. intended to negotiate in good faith. Mr. McCloy further noted that considerable progress had already been made in the Geneva negotiations and that it would be unwise to strike out in a new direction in the negotiations. Interdepartmental discussions had been held on the issues in the negotiations and four issues which had been unresolved after these discussions should be cleared up at this meeting. After disposing of these issues there could then be a report by Dr. Fisk on the contents of his panel's report. Mr. McCloy noted that the final version had become available only that morning but that then he had felt it necessary to parallel the efforts of the Fisk Panel by proceeding with a review of the U.S. positions in the conference. He had, of course, been aware of how the work of the Fisk Panel was proceeding. Finally, Mr. McCloy reported, considerable progress had been made in coordinating our positions with the British, who had a delegation here under the leadership of David Ormsby-Gore.

Mr. McCloy then turned to the first item on the agenda, namely, the question of Safeguards for the Seismic Research Program. In explanation, Mr. McCloy said that the U.S. would like to detonate certain nuclear devices in its seismic research program, but that the U.S. proposals for proving these shots were not weapons tests had not been accepted by the Soviet Union. After reviewing prior U.S. safeguards proposals, Mr. McCloy proposed that the Principals adopt as a U.S. position the unilateral opening for inspection of devices of obsolete design. Mr. McCloy noted that the agencies had in the past generally accepted the proposal he was making and he suggested that the Principals now adopt this approach and agree on a unified approach to Congress.

Secretary McNamara stated that he concurred in the proposal.

Chairman Seaborg stated that he concurred, but added that legislation was obviously necessary before this proposal could be implemented. AEC support of this proposal was on the understanding that the Administration would be very careful to keep in close touch with the Joint Committee on Atomic Energy on this question. Chairman Seaborg further remarked that the Administration should separate the weapon connotation from the devices used in the seismic research program. He felt some things might be done to the nuclear devices used so that the device could not be called a weapon but rather a nuclear explosive.

Secretary Rusk agreed with both points.

Chairman Seaborg observed that it would be desirable for the Joint Committee to be consulted before the Administration's position on safeguards became frozen. Another thought had also occurred to the AEC.

Even if it agreed to the new U.S. safeguards proposal, the Soviet Union might later claim that the U.S. nuclear shots were, in fact, weapons tests. It therefore might be a good idea to have a competent neutral or a United Nations representative involved in the safeguarding operation so that this individual could certify the nuclear shot was not a weapon test.

Mr. McCloy said that he was worried about the proposal to involve a neutral since this might increase our difficulties with respect to the Nth country problem. He felt it might be considered strange that we could not show a nuclear device to the French, for example, but that we could show this to a neutral representative. Furthermore, the idea of declassifying the design of nuclear devices to be used in the research program had been repudiated because, among other things, it would involve showing the design to non-nuclear powers.

Secretary Rusk remarked that the Soviet Union had its own concept of which nations were neutrals; for example, the Soviets might not think of Switzerland or Sweden as neutral. He then asked whether Mr. McCloy would give some thought to this suggestion by Chairman Seaborg.

Mr. McCloy agreed that he would, but he thought this question of neutral or UN certification was a bridge we might cross when we come to it. Possibly if the U.K. said that the device was not a weapon, the Soviets would not have a very strong argument.

Dr. Wigner said that since the nuclear devices in question were clearly obsolete, he failed to see how the question of weapons testing would arise. Chairman Seaborg replied that some of the devices to be used in the research program had not been exploded in the particular yields which were specified for the program; this might raise some question as to whether these devices were new weapons.

Mr. Allen Dulles stated that CIA had no objection to the proposal concerning disclosure of nuclear devices to be used since the Soviet Union had nuclear weapons

which were much more sophisticated than the devices it was proposed to show the Soviets.

Dr. Wiesner remarked that the Soviet Union may object to the decoupling shots proposed for the research program on grounds that these shots would teach us how to evade the test ban agreement. There was some validity in this since a country which had not tried out decoupling would have to proceed very slowly and cautiously if it tried to evade the agreement in this manner. While he concurred in the proposal for unilateral disclosure, Dr. Wiesner wished to note that the decoupling shots were a weakness in the U.S. position. Chairman Seaborg noted that the decoupling shots were also for the purpose of learning whether these shots could be detected.

Secretary Rusk noted that the proposal for safeguarding a seismic research program could be taken as agreed and suggested that Mr. McCloy describe the next item on the agenda.

Mr. McCloy then turned to the question of Peaceful Uses of Nuclear Explosives. He proposed that the U.S. agree to give the Soviet Union the right to look at any devices which we use in our Plowshare program. This of course would mean that we would have to use obsolete devices unless we were willing to open more advanced devices to Soviet scrutiny. We would resist the idea of giving the Soviet Union blueprints, but we would give the Soviets a chance to look at the devices. Mr. McCloy said he understood that a MARK 11 device could be used for some aspects of Plowshare but that this was not the device which the AEC would like to use. This proposal would limit the development of the Plowshare program and therefore the AEC would prefer to retain the "black box" concept of safeguards for this program.

Secretary Rusk inquired how much interest the Soviet Union had shown in the negotiations in the use of nuclear explosives for peaceful uses. Mr. Stelle and Mr. Spiers replied that the Soviet Union had shown no interest at all beyond tabling a treaty article on peaceful uses to counter an article which the U.S. had submitted. The Soviets considered that their acceptance in principle of peaceful uses detonation was a concession to the West.

Secretary Rusk then turned to the other Principals for their views.

Secretary McNamara stated that he concurred in Mr. McCloy's proposal.

Chairman Seaborg stated that he would also accept Mr. McCloy's proposal but he believes that an upper limit on the number of shots in the program during an agreed time period, as proposed by the State Department, was not necessary. Dr. Wiesner remarked that there might be a radiation problem for which reason a ceiling on the number of shots would be useful.

Mr. McCloy agreed that the U.S. need not propose initially an upper limit on the number of shots but should rather wait until we hear from the Soviet Union on our revised proposal.

Mr. Dulles said that he had no objection to the proposal.

Mr. Bundy inquired whether Plowshare was a sensitive issue with the Joint Committee. Chairman Seaborg replied that it was but that the more important question for the Joint Committee was that of opening of nuclear devices to inspection. Mr. McCloy concluded discussion of this item by expressing his feeling that the AEC had made a considerable concession in the interest of achieving an agreement in Geneva.

Mr. McCloy then turned to the next item on the agenda: the question of Numbers of On-Site Inspections. Mr. McCloy reviewed the history of the negotiations on the number of on-site inspections and stated that he now wished to propose that the Principals adopt a position calling for 10 on-site inspections annually in the territories of each of the original parties with an additional on-site inspection to be added to the quota for each 5 eligible seismic events beyond 50 and with a ceiling of on-site inspections to be set at 20 for each original party. Mr. McCloy felt that this proposal would mean no significant change in the U.S. position if estimates of the number of seismic events in the U.S.S.R. were correct. Mr. McCloy stated that the scientists had not been able to tell him that any one specific number was the correct number of on-site inspections; while 20 on-site inspections had considerable merit, there was no magic in that number. The Soviet Union was able to argue that our quota number was just as political a figure as the Soviet proposal of 3. Furthermore, the U.K. had in a sense pulled the rug out from under us since Prime Minister Macmillan had told Khrushchev that a number of

on-site inspections(which we thought to be something like eight) whuld be an acceptable quota. Mr. Ormsby-Gore had been very appreciative of the escalator proposal and felt that he could sell it to the U.K. government. Mr. McCloy felt that it was important that the position with which we returned to Geneva reflect a fully agreed Western position. The difficulty was that the number of 20 was looked on by some Congressional leaders as essential. Mr. McCloy concluded by recommending that the Principals adopt the escalator proposal with a ceiling of 20 and a floor of 10 and remarked that he felt that the security of the country would not be impaired by a quota number of something less than 20.

Mr. Arthur Dean stated that there had been two days of very constructive talks with the U. K.and complete agreement had been achieved on the positions which Mr. McCloy was now presenting to the Principals. Mr. Dean felt that if the Soviet Union sensed any disunity between the U.S. and the U.K. on the quota question, the Soviet Delegation would hammer at this point with the result that the importance of the other moves we were making would be downgraded. Mr. Dean believed that under the escalator proposal we would generally get the number of inspections which we wanted in any case. As to the ceiling of 20, this was a political fact of life unless we sought to repudiate a number which we had already tabled. Secretary Rusk commented that the key point on this proposal in his judgment was whether the Administration could take the treaty to the country in the sincere conviction that the control system agreed upon was genuine and not a sham. He then asked the other Principals for their views.

Secretary McNamara stated that he preferred to hear the views of others before commenting.

Mr. McCloy said he felt the proposal he was making constituted a substantial deterrent to Soviet violation. He further stated that it was his understanding that Dr. Kistiakowsky, after consideration of scientific factors involved, had concluded that 10 on-site inspections in the Soviet Union would be an acceptable deterrent.

Dr. Wiesner pointed out that there would be an intelligence contribution which would help us on this problem and that we would also have unilateral capabilities for distinguishing between natural events and explosions. Dr. Weisner believed that one clandestine nuclear test would not be significant in changing U.S.-U.S.S.R. nuclear weapon

capabilities. With something like 20% sampling, it was unlikely that a series of tests could go undetected. Dr. Fisk remarked that his committee had examined the question of how many unidentified events would occur in the Soviet Union and had concluded that there would be something like 70 to 75 unidentified events greater than 20 KT yield in the Soviet Union annually. This assumed control posts only in the 3 original parties and assumed no decoupling. This number would be cut in half if the entire world-wide Geneva system were installed.

Chairman Seaborg felt that the question of the number of on-site inspections was the most important part of the whole treaty. It was the most important safeguard we had against Soviet violation. In this connection, he shared the concern expressed by Secretary Rusk about the support of the American people for the treaty. Chairman Seaborg also understood that there was a scientific basis for the U.S. proposal on number of on-site inspections. Utilizing certain analytical techniques, the number of really unidentified events in the U.S.S.R. could be reduced to about 20. If the escalator proposal were to be put forward, Chairman Seaborg believed the upper limit of 20 inspections should be deleted.

Mr. Bundy inquired whether Chairman Seaborg's comment concerning 20 suspicious events meant that there would be a one-for-one inspection of the really suspicious events with our present proposal for 20 inspections in the Soviet Union. Chairman Seaborg agreed that this was so and felt that because of this the treaty could be acceptable to the American people. Mr. Stelle remarked that the U.S. had already, in fact, suggested this proposal in Geneva when we had proposed that 20% of all located events be inspected. The difference was that we had not suggested a floor of 10 inspections. The Soviet Union had already rejected this proposal.

Dr. Wiesner said that he personally would like to hold to the flat number of 20 on-site inspections if the UK would go along with us. Secretary Rusk inquired whether the Soviet Union had provided us with any data as to the number of unidentified seismic events. Dr. Wiesner and Mr. Keeny said that the Soviet experts had agreed with seismicity figures which we had given them. Secretary Rusk commented that he had thought the escalator proposal would result in about 20 on-site inspections being carried out in the Soviet Union annually.

Secretary McNamara said that because of the fact that in some years there were many more than 100 seismic events in the Soviet Union, he felt it would be desirable to have a cumulative upper limit. In this way, we could take care of the years in which the numbers of earthquakes greatly exceeded the number of 100 by accumulating on-site inspections which we might not wish to use in the low seismicity years.

Dr. Wiesner stated that he had talked with Mr. Ormsby-Gore and had told him of his belief that the U.S. should stick with the 20 on-site inspections; he had also been told by certain Soviet scientists that if everything else were agreed in the treaty there might be no problem with 20 on-site inspections in the Soviet Union. He was somewhat surprised, therefore, that Mr. McCloy and Mr. Dean had received different impressions from the British.

Mr. Dulles said he would not comment on this proposal except to say that he felt his agency could be of some help in the problem of deciding which events to inspect. This would depend on the amount of work involved in an attempt at clandestine testing. For example, if large amounts of earth movement were necessary for a decoupling shot, intelligence might be able to pick up this activity.

Secretary Rusk concluded that the question of numbers of on-site inspection was such a sensitive one that, regardless of whether agreement could be reached among the Principals, it should be discussed with the President. This was generally agreed.

Secretary McNamara added that the Principals should speak to the range in frequency of seismic events so that the whole picture could be seen. Dr. Wiesner remarked that he felt the method of sampling seismic events was a tremendous deterrent and that a one-for-one inspection of seismic events was not necessary.

Mr. McCloy then turned to the last item on the agenda: High Altitude. He remarked that in 1959 a committee of U.S., U.K. and U.S.S.R. experts had set up a theoretical control system for monitoring outer space. Mr. McCloy proposed that the Principals adopt a proposal for a full ban on weapons tests at high altitudes and in outer space and install the experts' control system to monitor this environment. This system would be installed in phases, and components could be changed by agreement among the original parties. He felt that joint U.S.-U.S.S.R. cooperation

in putting in a control system for monitoring outer space could be a way of advancing our common knowledge. Mr. McCloy said he had concluded that we would not be losing very much by agreeing to a ban on weapons tests in outer space.

Secretary McNamara said he was not clear as to what kind of research program would be carried out in connection with the outer space monitoring system. Mr. McCloy replied that the U.S. and U.S.S.R. would cooperate in putting up a satellite system and establishing ground equipment; the data derived from this and from our own research would be made available to the U.S.S.R. We would expect to obtain similar data from the U.S.S.R. Dr. Wiesner remarked that a research program for outer space monitoring would not involve nuclear detonations. Mr. Nitze inquired whether it was not true that the Soviet Union could evade a test ban agreement in outer space. In this connection Dr. Fisk noted that the capabilities talked about in the control system proposed by the experts was detection out to a distance on the order of 1 million kilometers for unshielded detonations. Mr. McCloy added that he understood that it would require about a year to get a nuclear device out to this distance for a test. Secretary McNamara then stated that he would concur in Mr. McCloy's proposal.

Secretary Rusk inquired as to the feasibility of the control system suggested by the experts. Dr. Fisk replied that it was within the state of the art but that the components required did not exist at the present time. There was no further objection by the other Principals to Mr. McCloy's proposal.

Secretary McNamara then stated that he would like to raise two questions which he thought the Principals ought to discuss. The first was how we could disengage from the Treaty in the event of certain actions by other countries. The second was how we could disengage from the present moratorium on tests. Mr. Spiers replied that in the case of the first question there was a duration clause in the treaty which provided that the U.S. could withdraw from the Treaty in case it was not being fulfilled. Of relevance, also, was a phasing provision which required installation of control posts on a world-wide basis on a specified schedule. On the second question, Mr. McCloy believed that the President did not wish to set a date for discontinuing the moratorium but that he did contemplate a resumption of tests if it became apparent that the Soviets were stalling on reaching an agreement. Secretary Rusk stated that it was the position

of the Department of State that the moratorium should not be continued indefinitely if agreement were not reached. Secretary McNamara said that he strongly felt the moratorium should not be extended indefinitely and he wondered whether it were possible to plan in advance on how the moratorium could be broken off in the event of failure to agree on a treaty. Dr. Wiesner felt that such a plan in existence at this time would torpedo the conference. Mr. Dean remarked that as far as a plan for presenting the revised Western position was concerned, he anticipated about two weeks of detailed presentation at the end of which time the new western position would be fully exposed to the Soviet Union.

Secretary Rusk inquired how much of a lag there would be between the signal to go ahead with preparation for nuclear shots and the time of detonation. Chairman Seaborg and Gen. Betts replied that tunnels were ready and that approximately 3 to 6 months would be required for installing instrumentation and making final preparations. Secretary Rusk then stated that it seemed to him there was great merit in standing on statements which the President had previously made on this question of the relation between the effort toward agreement and the resumption of tests. He felt that how we handled a break in the moratorium would depend on developments in the conference since disputes over specific issues would have to be handled in different ways.

Mr. McCloy said that it would be very difficult to work out a plan now that would be worthwhile. Further developments in the conference would be of great importance in determining what we do. He had, however, given thought to this matter and had certain ideas as to what should be done.

Secretary McNamara then said he would pose the question in a different way: would we in fact resume tests if agreement in Geneva were not possible?

Mr. Bundy said that in any event, this would be a poor time to make the decision. Secretary Rusk said he had supposed the U.S. would resume tests if agreement in Geneva could not be reached. Mr. Bundy said that he felt Secretary Rusk's suggestion of staying within previous statements by the President on this question was wise and should be followed by the Administration. Secretary Rusk asked that a paper be drawn up compiling the statements by the President on this question.

Secretary McNamara inquired what we expected from France in connection with this treaty. Secretary Rusk replied that there was a phasing provision in the treaty which called for world-wide installation of a control system and that this envisaged nearly universal adherence to the treaty. Mr. Spiers stated that the objective had always been to obtain a world-wide system, to be installed in phases. It had been felt that by making common cause with other nuclear powers, we could put pressure on other countries to join the treaty. Otherwise there was little we could do to stop Nth countries. Secretary McNamara then inquired whether France could test for four years if its presence as a member of the treaty was not required until Phase II. Mr. Stelle replied that under U.S. proposals, the Control Commission could invite France to join the treaty at any time; if the French refused to join, the duration clause of the treaty could be invoked. While this problem pertained to France, it also pertained much more importantly to China. Secretary Rusk asked that Mr. McCloy draw up a paper specifying the conditions under which the U.S. could withdraw from the treaty.

Referring to certain other issues in connection with the nuclear test conference, Chairman Seaborg commented that there should be a tightening up of the provisions pertaining to participation of "other sids" nationals in special flights and on-site inspections teams. He felt that at least one-half of the personnel on such special flights and inspection teams operating in U.S.S.R. territory should consist of U.S.-U.K. nationals, rathers than leaving this open as had been suggested. Chairman Seaborg also questioned whether the U.S. representative in the Control Commission should be given authority to change the treaty obligation as regards phasing of the control system and installation of components within phases. Furthermore, he felt it would be dangerous for the U.S. delegation to attempt to determine whether the Soviets were interested in combining other arms control measures with the nuclear test ban agreement, as had also been suggested. Secretary Rusk replied that the staff would work on these problems in connection with further preparation by the Department of State of instructions for the U.S. delegation. As far as the authority of the U.S. representative on the Control Commission was concerned, that person would act in accordance with the wishes of the U.S. Government and subject to Constitutional processes. Mr. Dean remarked that on the question of Soviet interest in other arms control measures in connection with the test ban agreement, it was envisaged

the
that negotiations with/Soviet Union might still go on even if the U.S. broke off the moratorium. This, therefore, would not prolong the moratorium.

Secretary Rusk then asked Dr. Fisk to summarize the report of his committee. Dr. Fisk said that the report had been agreed to except for the last chapter which concerned the difficult question of what could be said of the effect of a test cessation on our military posture. This last chapter had been drafted to indicate that there was a spectrum of opinion on certain matters. Gen. Loper had not agreed to the last chapter and would submit a separate comment. Dr. Fisk then briefly reviewed the report, pointing out that there were varying views within his committee as regards the importance of very light weight strategic weapons and the importance of seeking further improvements in the technology of tactical nuclear weapons.

Gen. Loper stated that he wished it known that he had dissented from the last chapter of the report because he felt that it had not dealt with the problem of cost effectiveness, a matter which could be handled and which was of great importance to the national economy. Secretary Rusk expressed his appreciation to Dr. Fisk for the work he and his committee had done.

Mr. Bundy then inquired as to the timing of further actions in connection with the nuclear test conference. He remarked that he understood there was a certain urgency attached to seeing Congressional leaders and he inquired whether the Fisk Report should be made available to Congress.

Mr. McCloy replied that he had not addressed himself as yet to the problem as to what dissemination to make to the Fisk Report. Chairman Seaborg remarked that it did not seem to him that we could look for favorable legislative action if Congress could not review the Fisk Report.

After some discussion, the Principals agreed that the President should be consulted as soon as possible in regard to further action to be taken in preparing for the resumption of the nuclear test talks, and particularly on the unresolved question of numbers of on-site inspections.

The meeting adjourned at 6:40 p.m.

Attmt: List of Participants.

[redacted]

Attachment

MEETING OF PRINCIPALS

March 2 - 4:30 p.m. - Under Secretary's Conference Room

STATE
- Secretary Rusk
- Mr. Bowles
- Mr. Kohler
- Mr. Gullion
- Mr. Spiers
- Mr. Baker
- Mr. Goodby (reporting)

WHITE HOUSE
- Mr. McCloy
- Mr. Fisher
- Dr. Wiesner
- Mr. Keeny
- Mr. Bundy
- Dr. Fisk

DEFENSE
- Secretary McNamara
- Mr. Nitze
- General Lemnitzer
- General Loper
- General Dabney
- Mr. Lanier
- Admiral Dudley

AEC
- Chairman Seaborg
- General Betts
- Dr. English
- Dr. Walske
- General Luedecke
- Mr. Howard Brown

CIA
- [illegible]
- Dr. Scoville

US DEL
- Amb. Dean
- Min. Stelle

S/S
- Mr. Grant

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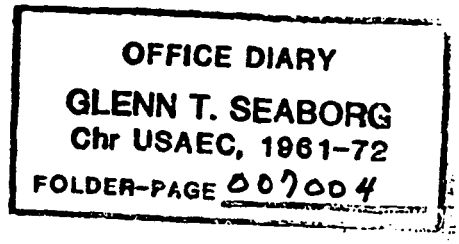
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Approved in S 8/18/51

Memorandum of Conversation

900394 3 OF 6 / D2A11

DATE: August 3, 1961
2:30 p.m.
Secretary's Conference Room

SUBJECT: Meeting of Committee of Principals on Disarmament

CLASSIFICATION CANCELLED* WITH DELETIONS BY AUTHORITY OF DOE/OC
J. Diaz 8/7/90
REVIEWED BY DATE
* DOS, 8-19-91, ACDA, ltr. 7-11-90, To Siebert, DOE, OCTP

PARTICIPANTS: See Attachment

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S/S-2	P	US NucDel, Geneva		Mr. Murrow - USIA	
IO	D-20	Secy. McNamara - DOD		Mr. Bundy - WH	
S/P	G	Dr. Seaborg - AEC		Dr. Wiesner - WH	
S/AE		Gen. Lemnitzer - JCS		Mr. Schlesinger - WH	
EUR		Mr. Dulles - CIA			

Secretary Rusk said the meeting had been called to discuss the US draft paper "Joint Declaration on Disarmament," circulated by a memorandum of July 28. The first problem concerned the difference between two phrases, "general and complete disarmament" versus "total and universal disarmament." Some of our allies had resisted our efforts to shift from the former phrase to the latter. Moreover, the two phrases tended to be identical when translated into other languages, as was demonstrated in the US-USSR bilateral conversations. The Secretary called on Mr. McCloy for additional comments on this issue.

Mr. McCloy recalled that in the bilaterals the Soviets had inquired as to the significance of the change to "total and universal disarmament." They had reminded us that we had accepted "general and complete disarmament" in the 1959 UN resolution on disarmament and had asked whether "total and universal disarmament" had a different meaning, and if so how it was to be defined. He had explained that we were using "total and universal disarmament" to make clear that we were not dealing in the bilaterals with the Soviet plan to which the term "general and complete disarmament" had become attached. The more the Soviets had emphasized the point, the more convinced he became that insistence on a new name for disarmament, especially in the UN, would unduly handicap our efforts. He had concluded that we would gain more than we would lose by dropping the new term and reverting to "general and complete disarmament" accompanied by the explanation that we were not thereby subscribing to the Soviet plan. In making this move we would be conforming to the views of our allies and to views in the UN.

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Secretary Rusk said he was not content with either "total" or "complete;" both terms were fraudulent. He did not believe "total" or "complete" disarmament would be achieved for many, many years; both the US and Soviet plans envisaged a gradual reduction of armaments by stages. If there was any difference between "general and complete disarmament" and "total and universal disarmament" it was a metaphysical one which did not comport with the dignity of the US, and we would be open to ridicule if we insisted on it. The President should not be asked to assume the burden of explaining this difference. We should attach the term GCD to a realistic and rational plan. In fact, it was time to talk only about realistic disarmament plans, to take the subject out of the realm of propaganda and into the realm of actions we were prepared to take. The Soviets had made headway by stealing Free World phrases such as "peace" and "freedom." We could make "general and complete disarmament" our own phrase if it were attached to a realistic and important proposal. In conclusion, the Secretary said he would have preferred the simple term "general disarmament" but felt on balance that the US paper should use "general and complete disarmament" unless there were strong objections.

It was agreed that the term "general and complete disarmament" would be substituted for "total and universal disarmament" throughout the US paper.

Secretary Rusk said the next question was whether the proposed International Disarmament Organization (IDO) should be "within the UN" or "within the framework of the UN." The State Department believed "within the framework" would allow greater flexibility in establishing IDO and accordingly recommended the use of this phrase. Mr. McCloy added that the UK favored this solution. It was agreed that the IDO should be "within the framework of the UN."

Mr. McCloy said the second paragraph in the opening statement of the US paper referred to creating "conditions in which all peoples can achieve the fulfillment of their own basic aspirations." He thought the word "peaceably" should be inserted before "achieve." Secretary Rusk said the term "legitimate aspirations" might be used. Mr. Schlesinger suggested that the passage read "conditions in which all peoples can strive for the achievement of their own basic aspirations." This suggestion was adopted.

The Secretary then asked Mr. McCloy to explain the alternate force level paragraphs on pages 6-7 of the paper. Mr. McCloy said the first alternative provided for inventory and verification of force levels, then a reduction in effect by the USSR and China to the US level and then a reduction by each to 2.1 million. The second alternative provided for an inventory followed by commensurate verified reductions by all states until the 2.1 level was reached. If we insisted on the first alternative, we would be vulnerable to the criticism that we were insisting on control rather than disarmament. We would be in a stronger position if we proposed the second alternative which demonstrated our willingness to begin proportionate reductions immediately.

Dr. Wiesner thought this might be a dangerous philosophy which in some areas would require us to reduce more than the Soviets. Mr. McCloy said the provision applied only to force levels. Dr. Wiesner felt that if the principle

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were applied to force levels, it would be difficult to resist its application to other aspects of disarmament.

Secretary Rusk said recent plans for an increase in our armed forces might solve the problem on a numbers basis. If our forces were to be increased above the 2.1 million level, then we as well as the Soviets would be reducing force levels to bring them down to 2.1 million. General Lemnitzer said our forces were now at the 2.5 million level and the new programs would effect a further increase. Mr. Matteson said the Soviet force level was 3.2 million including a quarter of a million in para-military forces. In response to a question from Dr. Seaborg, Mr. McCloy said that since the Soviets were farther above the 2.1 million level than the US, the reductions would have to be phased. Secretary Rusk said the problem might be handled by a provision stating that by a certain date all forces would be reduced to 2.1 million. If our forces were at 2.1 million, we would be laughed out of court for suggesting a reduction to that figure, but since we are above 2.1 million we have a willingness to reduce to offer in the negotiations. Mr. William Bundy said the term "balanced" in the second alternative had a connotation of reductions by equal absolute amounts. He suggested the substitution of "proportionate" for "balanced." General Lemnitzer agreed that "balanced" would cause trouble. Secretary Rusk agreed that "by equitable and proportionate steps" would be a satisfactory formula in the second alternative. General Lemnitzer preferred the first alternative as being more precise and understandable. Secretary Rusk felt the first alternative asked other countries to reduce and be inspected before we were willing to reduce. Such a proposal would produce a strong adverse reaction. General Lemnitzer said if the second alternative were adopted, the JCS recommended inclusion in it of the last sentence of the first alternative. Secretary Rusk said the paragraph might ask militarily significant states other than the US and USSR to reduce to "appropriate lesser levels." Mr. Matteson said there had been an understanding that "militarily significant states" meant that China would reduce to the same level reached by the US and USSR. General Lemnitzer asked whether the paper made this point clear. Secretary Rusk believed the principle that the Communist Chinese force level would be the same as the US and Soviet should be in the paper. He would be more comfortable if it were clear that 2.1 million was a maximum; the paper might refer to "appropriate levels not exceeding 2.1 million."

Mr. William Bundy suggested that the last sentence of the second alternative begin with the words "following initial verification of force levels." Dr. Wiesner said there could be all levels of verification, from present intelligence to a search of the USSR. Mr. McCloy said he had told Khrushchev that the USSR wanted inspection only after disarmament;

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Secretary Rusk said we would run into difficulty if we asked for initial inspection before there was any reduction. He suggested verification and reduction be linked by the following language: "In conjunction with verification of force levels, reduction will proceed by equitable and proportionate steps." General Lemnitzer wondered whether Khrushchev intended to exclude verification of forces manning missile sites; such forces might total

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half a million or more. Mr. Matteson said the paper contained a general principle requiring verification of all disarmament obligations. Hence it would not be necessary to write this requirement into each disarmament measure. Secretary Rusk said the insertion of a verification phrase, even though repetitious, in the armed forces paragraph of a long plan might not be undesirable. Mr. McCloy said Khrushchev had agreed that verification would count not only the armaments destroyed but would also include inspection to see that no armaments which should have been destroyed remain. But he did not agree to this as respects missile sites.

General Lemnitzer asked whether the paper had taken account of reserve forces. Secretary Rusk noted that the Germans before World War II had developed a formidable force of reserves with an army limited to 100,000. Mr. Matteson said the JCS definition of armed forces excluded those reserve personnel on training duty up to six months. The 2.1 million figure would include all personnel on active duty but exclude personnel on up to six months active training duty. We also include para-military forces, a provision which the Soviets would not accept. Mr. McCloy said careful definitions would be necessary in this area. Dr. Wiesner felt the emphasis in disarmament should be on material, since without the weapons the personnel could not form a formidable armed force. Personnel was difficult to inspect; personnel verification would be completely unnegotiable if we insisted on verification to within one percent. Mr. Matteson said the JCS had worked out a good random sampling technique on force levels which would require a minimum effort for verification. Dr. Wiesner said he was not worried about the scale of the effort if we could obtain access to the USSR. Total geographical access was probably not negotiable. Mr. Dulles thought raising the reserve question was opening a Pandora's box. Reserves had been discussed for years and years in disarmament negotiations and no one had succeeded in devising an acceptable formula. General Lemnitzer agreed with Dr. Wiesner that personnel without hardware would not be important. Mr. McCloy believed it was important to reduce personnel as a symbolic measure, even though inspection would be difficult. Secretary Rusk thought the matter of reserves might be flagged by a sentence as follows: "Arrangements for accounting for reserve components will be on a comparable and agreed basis." This would indicate our awareness of the problem. Mr. Matteson and Mr. McCloy felt that once this problem was raised it would be necessary to spell out a large number of matters in detail. The Secretary said we would be subject to attack by our friends abroad if we put forward a document with a gaping hole in it. Mr. Matteson said our allies would be the first to object to raising the reserve question, and Mr. McCloy felt such matters could not be elaborated in a document of this kind. The Secretary said we would not be able to dodge the point in the negotiations. He suggested the force level paragraph refer to "2.1 million on active service."

It was agreed that the force level paragraph should be revised along the lines of the above discussion.

The meeting then turned to the problem of a linkage between nuclear and delivery vehicle measures and conventional measures. Mr. McCloy said Defense and AEC preferred the linkage, but after reading the Defense papers on the

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subject he was troubled by their logic. Defense concluded that a cutoff of production of fissionable material would be advantageous to the US. If this was the case, why link the cutoff to other measures? General Lemnitzer believed it would be militarily unsound to stop production of fissionable materials without an agreement on conventional forces. Many of our programs, including Minute Man and Polaris, would have to be changed under a cutoff provision. The arguments he had advanced in the last Principals' meeting had been verified by a study of stockpiles. Mr. McCloy said he could see that there would be a use for fissionable material, but if the cutoff would limit the Soviets why not propose it? General Lemnitzer did not think the cutoff would be advantageous to the US. Secretary Rusk asked whether there was agreement that a cutoff now would be to our advantage. Mr. Gilpatrick said a cutoff might be to our advantage if we were sure it was carried out. General Lemnitzer said our tactical nuclear weapons were necessary to offset the great manpower reserves of the Sino-Soviet Bloc. If we agreed to a cutoff and the Soviets did not agree to manpower reductions, we would be at a disadvantage. Mr. Gilpatrick could not agree that a cutoff would be to our advantage today. Dr. Wiesner believed a cutoff would create difficulties for the USSR in air nuclear weapons and in an AICBM system which would require a large number of weapons than the Soviets could afford under a cutoff. The categorical statement that a cutoff was to our disadvantage did not seem reasonable to him. Dr. Seaborg said we would feel the pinch under the provision for transfer of fissionable material to non-weapon uses. Dr. Wiesner said Soviet agreement to a cutoff would be important evidence of the seriousness of Soviet disarmament intentions. Mr. McCloy said the cutoff was a verifiable measure. The Secretary noted that there was a kind of inherent linkage in the paper since Stage I was a package in itself. He was worried about the bracketed language if it meant that all conventional measures had to be completed before nuclear and delivery vehicle measures. Mr. Gilpatrick believed a concurrent if not a prior linkage was desirable. General Lemnitzer wished to take a look at the implications of concurrent linkage. Secretary Rusk said the problem should not be compromised here but should be presented to the President. Mr. Matteson said Canada was opposed to the linkage, while the UK was willing to accept a general statement to the effect that nuclear and delivery vehicle measures depended on progress in conventional disarmament. Mr. Matteson then read several sentences from General Lemnitzer's memorandum prefacing a July 21 JCS study to the effect that the cutoff was not disadvantageous to the US and was disadvantageous to the USSR.

It was agreed that the issue was of such importance that it would be discussed with the President after further discussions between State and Defense.

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It was agreed that USDA would revise the "no first use" paragraph along the lines suggested by the Secretary.

At this point Secretary Rusk left the meeting.

Mr. McCloy said it was necessary to keep flexible the character of the international force suggested in the paper. Both Defense and the Soviets favored a national contingents force as opposed to an integrated force of individual volunteers. In order to keep the matter open, he suggested the word "permanent" be deleted before the words "UN peace force" on page 11. This suggestion was agreed to.

Mr. McCloy then referred to a new paragraph added to make it clear that in a program limiting delivery vehicles provision would have to be made to assure that one side did not develop a defensive system, such as an AICBM system, that would upset the balance in delivery vehicles resulting from disarmament. Mr. Gilpatrick said Mr. McCloy's explanation was better than the language in the paper. General Lemnitzer said he could not understand this provision which would limit the inherent right of self-defense. Mr. McGeorge Bundy said USDA was trying to protect the US deterrent against neutralization by a Soviet defensive system. Mr. McCloy said the deterrence balance could be completely disrupted if one side could neutralize the other side's ICBM's. Mr. Gilpatrick said Defense would like to reflect on this provision. Perhaps appropriate language could be worked out. General Lemnitzer said the balance of deterrence had a great many intangibles, such as first strike intention and capability. Mr. Gilpatrick raised the question of shelters as a defensive measure disrupting the balance of deterrence and Mr. McCloy said this factor would have to be taken into account. Dr. Seaborg thought this provision would be hard to sell to the people since it contained a certain lack of logic. Dr. Wiesner thought it was not at all illogical.

It was agreed the provision would be further discussed by State and Defense.

Mr. McGeorge Bundy raised questions as to the Foster group of consultants and to future timing and procedure with reference to the paper. Mr. McCloy said the paper would be the US disarmament plan, accompanied by more detailed working papers on which the Foster group would be assisting. Several points in the paper, as indicated above, would have to be resolved with Defense, and the US would have to consult its allies again. Mr. Foster said his group would be working on position papers in support of the present paper. Mr. McGeorge Bundy said the President would be interested in the paper and suggested that it be discussed with him before the allies were consulted again. The paper might have an important bearing on any speech the President might make in the UN. In this connection, the emphasis on peace-keeping would be particularly significant. Mr. McCloy agreed. Dr. Wiesner suggested that since the US now had more time as a result of the fact that multilateral negotiations were not resumed on July 31, this paper should be made as detailed and concrete as possible, especially with respect to verification.

Mr. McCloy said the US-USSR bilateral conversations would be resumed on September 5, probably in New York.

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ATTACHMENT

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Participants

Department of State

Secretary Rusk (Chairman)
Ambassador Arthur H. Dean
Mr. Kitchen - D
Mr. Anderson - EUR
Mr. Grant - SS/RO
Mr. Matteson - D
Mr. Gehron - D
Mr. Spiers - D
Mr. Akalovsky - D
Mr. Sonnenfeldt - D
Mr. Weiler - D
Mr. Boggs - D

Department of Defense

Mr. Gilpatrick
General Lemnitzer
Mr. Bundy
Mr. McNaughton
Mr. Lanier
Colonel Stanton

AEC

Dr. Seaborg
Dr. Haworth
Dr. English
Dr. Cavanagh

CIA

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USIA

Mr. Wilson

White House

Mr. McCloy
Mr. Foster
Mr. Bundy
Mr. Fisher
Dr. Wiesner
Mr. Schlesinger
Mr. Keeny
Mr. Komer

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J. Diaz 8/20/90

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See 2, 144

SOFG/201-1/30

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Limited Distribution

September 8, 1961

Dear Mr. President:

The purpose of this letter is to obtain your special authorization for expenditure of special nuclear material as has been customary for previous nuclear tests. In accordance with NSC Action Memorandum [redacted] in which you authorized resumption of nuclear weapons testing, we are now preparing to detonate in a tunnel at the Nevada Test Site on September 15, 1961, [redacted] an approximate yield of 2 Kilotons. This will provide information for normalization in design of low boost weapons and proof test of this yield version of [redacted] warheads.

It is anticipated that [redacted] an approximate yield of [redacted] will also be ready for detonation on or after that date at the Nevada Test Site. This would be a proof test [redacted]

The third experiment which you have authorized is the test of the [redacted] Device. You will recall that this experiment is designed to test a new low yield weapon for tactical application, [redacted] This weapon is designed to maximize fusion yield. As I informed you previously, it is feasible on a "crash" basis to conduct this test on or about September 20. However, complete diagnostic instrumentation cannot be ready by that date and the Livermore Radiation Laboratory advises us that, if it were to be conducted that early, it would be virtually certain that the experiment would have to be repeated at a later date. The [redacted] device with complete instrumentation would be ready to detonate by about October 10. In view of the important technical advantages which this later date affords, our current plan is to conduct the [redacted] test on that date. We recognize, however, that there may be overriding policy considerations which would make it necessary to revise our planning and to conduct the test at the earliest feasible time. In that event, we can, at your request, carry out the experiment on the earlier schedule.

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After coordination with the Department of Defense, as you have directed, the remainder of the currently planned short term underground nuclear weapons development and effects test program will be submitted to you for approval.

For the initial three detonations referred to above, it will be necessary to expend up to the following amounts of special nuclear material:

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We request your approval of the expenditures of the materials listed above.

Respectfully yours,

(Signed) Glenn T. Seaborg

Glenn T. Seaborg

The President
The White House

Enclosure

I have noted the three tests referred to in this letter and approve the expenditure [redacted] of Uranium 235 and [redacted] of Plutonium in the conduct of these tests to be held at the Nevada Test Site in Calendar Year 1961.

HAND WRITTEN IN CHAIRMAN'S OFFICE
9/8/61
ECS/hm

SECRET

009044 1
SOF6/D2A/1
9/13/61

UNCL. BY DOE

DRAFT PROPOSAL FOR USE IN PRESIDENT'S STATEMENT ON DISARMAMENT IN UNGA

Contingent upon a stable agreement on Berlin and the beginning of disarmament negotiations in an agreed forum the US would make the following proposal:

Upon the day negotiations are resumed in a forum established by this Assembly, the United States will deposit in a country designated by this United Nations General Assembly a total of 30 medium jet bombers capable of carrying nuclear weapons provided the Soviet Union will deposit 30 such bombers.

The United States would continue to desposit medium jet bombers at the rate of one per day on the same terms while negotiations continue up to one year provided the USSR did likewise.

Upon signature of an agreement upon general and complete disarmament, upon nuclear testing or upon any other major measure of disarmament, the United States would be prepared to have all bombers so deposited destroyed under international observation. This step would be taken without any territorial inspection of the USSR or any other country.

The United States also proposes to transfer on the first day of resumed disarmament negotiations 300 kilograms of weapons grade fissionable material to the custody of any appropriate country or agency named by this Assembly to be withheld from weapons use, and to be reserved for peaceful applications provided that the Soviet Union will similarly transfer 300 kilograms of such material. Three hundred kilograms could be more than equivalent to all the destructive power of all wars in history. We will continue such transfers to transfer 300 additional kilograms on the same conditions each month so long as meaningful negotiations continue. Upon conclusion of any significant agreement in the field of disarmament we will consent, if the Soviet Union will do likewise, to the actual utilization of this material for peaceful purposes.

50FG/02F/34

[redacted]

SEP 15 1961

Dear Mr. President:

On September 8, 1961, I wrote to you requesting approval to expend up to certain amounts of special nuclear material for the conduct of three detonations of the currently planned short term underground nuclear weapons development and effects test program.

A reasonably firm, short term test program extending through February, 1962 has now been coordinated with the Department of Defense. The resulting schedule of devices including tentative firing dates is enclosed. This program has been designated Operation NOUGAT and includes the three tests you had previously approved. In view of the developmental nature of this program, it may be necessary to delete, substitute, add to or further modify items in the proposed program as continuing studies and early tests of the series may indicate.

During the course of this Operation, you will be advised of test results and any significant changes made in the content of the enclosed schedule. In the past, the Commission has sought separate Presidential approval only for the most significant changes and major additions. I would appreciate your advice as to whether or not you would desire this practice to be continued.

Submitted for your approval is our request to detonate about twelve devices (in addition to the three devices already approved by you) in Operation NOUGAT at the Nevada Test Site as set forth in the enclosed list. We are, of course, making plans in coordination with the Department of Defense for a follow-on program to Operation NOUGAT after February, 1962. I intend to submit to you shortly for your information the proposed content of such a follow-on program. It will be a very tentative program and will be subject to many changes before it is submitted to you for formal approval.

[redacted]

CLASSIFICATION CANCELLED
WITH DELETIONS
BY AUTHORITY OF DOE/OC
J. Dias 10/23/90
REVIEWED BY DATE
Kahn 10/24/90

For the detonations of Operation [redacted] indicated above, it will be necessary to expend up to the following amounts of special nuclear material in addition to the amounts already approved by you on September 9:

Uranium 233	-	DELETED
Uranium 235	-	
Plutonium	-	

Included in the total amount of Uranium 233 specified above is DELETED Your approval of these expenditures is requested.

Respectfully yours,

(S) Glenn T. Seaborg

Glenn T. Seaborg

The President
The White House

Enclosure
Operation [redacted] schedule,
Cys 1A, 2A and 3A

Indorsement

I have noted the program of tests referred to in this letter that are planned for detonation through February, 1962 for Operation [redacted]. I approve the expenditures DELETED DELETED in the conduct of these tests to be held at the Nevada Test Site in Calendar Years 1961 and 1962.

Rewritten in Chairman's Office
9/15/61 -- HCB/hm

See 2, 222

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 010043.5

915103

[redacted]

CLASSIFICATION CANCELLED*
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BY AUTHORITY OF DOE/OC
J. Dwig 1/16/90 H.Schmidt 1/16/90
REVIEWED BY DATE
* Ltr. OASD, McDonald to DOE OCTP, Siebert, 9/21/89

THE SECRETARY OF DEFENSE
WASHINGTON

October 9, 1961

Dear Mr. President:

In our letter to you of September 20, 1961, we outlined the basis for a proposed U.S. nuclear test program. In that report we informed you of the data which is needed and which can only be obtained through atmospheric testing. We now believe it is important that we further describe the experiments which are urgently required and recommend that you grant approval to prepare for a comprehensive test program. You will note that our greatest deficiency in effects data lies in those related to determining the vulnerabilities of our ICBM systems and sites, and those phenomena affecting the design of [redacted] systems and hardening of warheads to assure penetration of enemy defenses.

Some of the less complicated tests can be conducted in a few weeks, while the more complex ones require up to two years for preparation. An extended period of time is required to complete the series because preparation was limited during the moratorium while the United States was negotiating in good faith. It is also important, in this context, to note that the Soviets have now carried out some [redacted] airbursts in a short period of time. To accomplish this it is obvious that preparations must have been instituted about two years prior to resumption of testing. If we continue our unilateral restrictions or agree to a moratorium on atmospheric tests, we will have permitted the USSR to obtain a technological gain of several years and obtain information which will be denied us without atmospheric testing.

It is fallacious and dangerous to our national security to assume that we have reached a favorable plateau in nuclear weapons development, and that extensive efforts in nuclear testing are no longer required. On the contrary, from past experience we know that nuclear testing has enabled our scientists to make extraordinary progress, not only in weapon technology but in the discovery of previously unknown and unsuspected phenomena. We believe that similar gains can be made in the future.

The current nuclear test series being conducted by the USSR is a clear demonstration of their determination to improve their military posture and must be considered as the culmination of a continuing vigorous and aggressive weapons development and systems test program. In contrast, during the voluntary test moratorium started at the end of October 1958, the United States, acting in good faith, conducted no nuclear tests of new weapons and no nuclear tests to study effects phenomena associated with nuclear detonations or to prove stockpiled weapons. The currently authorized tests, with yield and environmental limitations imposed by underground testing, do not permit the Atomic Energy Commission and the Department of Defense to pursue all aspects of a dynamic and effective test program.

The critical need for effects data vital to the national security lies in the weapons effects area that relate to ICBM and ICMB site vulnerabilities. The importance of these effects was

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[redacted]

[redacted]

not recognized early enough before the onset of the moratorium to instrument for their measurement in tests underway at that time. As a consequence, very little quantitative information is now available, and it is to correct this deficiency that atmospheric tests are urgently required. In addition, if such testing is authorized, weapons development could proceed at a much higher rate and we could accomplish several desirable weapons systems and stockpile weapons assurance tests. To meet these critical needs, programs should be conducted on a high priority and urgent basis to:

a. Obtain the necessary data relative to the vulnerabilities of ICBM systems and to assure that our [redacted] will be effective in a nuclear explosion environment. We urgently need the following weapons effects tests:

(1) DELETED. If carried out at the Nevada Test Site, this test could be ready as a minimal experiment in six months with a more elaborate test in twelve months. This shot could also obtain urgently needed data on the design of underground structures for Command Posts and ICBM Launching Sites.

(2) DELETED. This could be ready as a minimal experiment in nine months with a more sophisticated experiment in eighteen months. Such an experiment would require an overseas site and could be conducted at Johnston Island, Christmas Island, or over the open sea.

(3) DELETED. This could be ready as a minimal experiment in nine months with a more fully instrumented test in eighteen months. The site for this experiment would be the same as (2) above.

(4) DELETED. This test could be ready as a minimal experiment in nine months with a more fully instrumented test in eighteen months. The site for this experiment would be the same as (2) above.

(5) DELETED. This test could be ready in approximately two years. The work could be conducted from Eniwetok or at Christmas Island, if a site were developed at this latter location.

b. Verify the full yield performance of untested weapons which are extrapolated designs and are presently in stockpile or are scheduled for stockpile entry in the near future. While such

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tests at full yield are not absolutely required, the tests indicated would give assurance as to the yields of the latest warheads and are tests that could be carried out at early dates. Specific tests are as follows:

Warhead	Yield	Readiness Times
	DELETED	3-4 weeks
		3-4 weeks
DELETED	Pershing & Nike Zeus	3 months
	Skybolt & Minuteman - DELETED	3 months
	Advanced Minuteman -	Spring 1962

Low yield mock-up tests of the [redacted] are scheduled for the present Nevada tests; however, full yield assurance tests are desired. Full yield tests of the tests listed above could be carried out on the time scales indicated using completely airborne operations from an overseas site.

c. Improve weapon technology with particular emphasis on increased yield-to-weight ratios, greater efficiency of thermonuclear burn and the development of clean weapons. The present tests in Nevada are contributing to these objectives, but this program is subject to serious limitations. Specific initial development shots which would now be planned requiring overseas tests are as follows:

(1) [redacted] clean device to [redacted] This test might be carried out underground but would require extensive preparation.

(2) [redacted] device to provide a candidate for and advanced Class D bomb (Full Fuzing Option). This experiment could be accomplished at less than full yield.

(3) [redacted] device to significantly increase the yield-to-weight ratio in this weight class. This could replace a limited yield test in Nevada.

(4) [redacted] device to significantly increase the yield-to-weight ratio of larger yield weapons and to obtain improved data relative to the development of larger yield devices. This experiment could be conducted at less than full yield, if desired.

(5) [redacted] device to increase yield-to-weight ratio in the [redacted] This test, of course, could be carried out underground.

(6) [redacted] clean device to contribute to "clean" weapon technology in this yield. [redacted]

The first of these tests could be ready in about six months with the remainder being completed in an additional six months. The operations could be conducted as airburst or barge surface shots with both options being desirable. However, all could be conducted as airburst, which in some cases would lead to loss of important diagnostic information.

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[redacted]

[redacted]

d. Conduct operational test firings of Polaris, Atlas D and ASROC (Anti-Submarine Weapon System) systems. These full-scale firings would serve the vital purpose of providing realistic operational training. Psychologically, such firings could have a significant beneficial impact on the military posture of our forces as well as the forces of our allies. From a purely technical viewpoint, operational test firings to include full-scale detonations of the nuclear warhead have not been required in order to prove proper operations of those complete systems which are now in the inventory.

These full-scale operations can be accomplished with adequate safety and should be considered for inclusion in our program of test firings. Of immediate importance, the following demonstrations are recommended:

(1) POLARIS - An operational Polaris submarine could be programmed for Polaris firing by mid-December. It is proposed that two missiles be fired at operational ranges with airbursts.

(2) ATLAS D - Two Atlas D missiles could be ready for launching at Vandenberg Air Force Base within two weeks' notice. This is an operational base which has sufficient instrumentation depth to accomplish this mission.

(3) ASROC - This surface launched, solid propellant rocket anti-submarine weapon is now operational in several classes of Naval ships. This system could be ready for full-scale test within two weeks.

Please note that the tests listed in (a) through (d) above are the most important and should not be construed as a complete listing.

Though a limited amount of valuable data can be secured from the current underground test series with low yield devices, it is being obtained at a relatively slow pace as is characteristic of underground testing. It must also be emphasized that testing underground can neither provide all of the effects data necessary to satisfy defense requirements outlined above nor permit the most rapid and full exploration of high yield weapon technology by the Atomic Energy Commission laboratories.

If it is desired to accelerate the present schedule of operations at the Nevada Test site, [redacted] significantly, it will be necessary to use balloon techniques. Under these circumstances the schedule could be modified as follows:

Event	Purpose	Present Schedule	Balloon Schedule
	To simplify basic design	Early November	Early October
	To prove full yield with reduced material	Mid November	October
DELETED	Proof test for [redacted]	Mid-December	October - November
(inherently safe)	(Reduce size single stage or very light primary)	Mid February	October - November
DELETED (mechanically safe)	(for two stage)	Mid February	December

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[redacted]

[redacted]

Similar advances in schedule can be made for some of the less complex tests in the follow-on program.

We believe the best course open to the United States is to strengthen our military posture by conducting a comprehensive test program as indicated above. This will involve atmospheric tests to supplement the current underground test series. Intensifying our test activities is mandatory if we are to get the maximum technical data as quickly as possible. This will enable the United States to minimize the advantages being gained by the USSR in weapon and effects technology during their current tests. Once the United States resumes atmospheric testing, we must be prepared to stand firm in the face of any propaganda and conduct our test programs as necessary.

If you decide to permit the preparations for the tests outlined in this letter, it is important to recognize that in spite of taking every precaution against it there would be a risk that knowledge of the preparations would become public. In view of this fact and because the preparations would necessarily be on a large scale, it might be desirable to announce in advance that such efforts are underway.

Contrary to the widely publicized statements concerning the hazard associated with the fallout from atmospheric tests, the Defense Atomic Support Agency has conducted extensive studies over the past few years on the world-wide fallout of radioactive materials resulting from atmospheric testing. These studies indicate that, in actual fact, world-wide fallout from past nuclear tests has not produced a demonstrable biological hazard, nor is it expected that any similar future tests would do so. The widespread belief that atmospheric testing is dangerous, arises in part from a misunderstanding of the basic differences between local fallout and world-wide fallout. It has been conclusively shown that the total radiation exposure to important areas of the body from world-wide fallout from all past tests is only 2 to 3% of the radiation exposure all individuals receive from natural sources. This increase is much smaller than the variations in dose that always have been imposed by nature on individuals living in different locales. We agree with the Defense Atomic Support Agency in this matter. As in the past, local fallout problems can be handled by appropriate safety precautions during the tests to insure freedom from danger.

In consideration of the above, we recommend that:

a. Approval be given for the Department of Defense and the Atomic Energy Commission to prepare for atmospheric and high altitude nuclear tests as outlined in this letter at suitable overseas locations, e.g., Christmas Island, Eniwetok, Johnston Island, open water and at the Nevada Test Site. Yield and operational limitations would be imposed as required to assure the health and safety of populated areas.

[redacted] b. Approval be granted to prepare for proof test of the [redacted] by air drop in approximately 3 - 4 weeks in the vicinity of Johnston Island with

DELETED

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[redacted]

[redacted]

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c. U.S. statements regarding the fallout hazard from atmospheric testing be based on known and proven facts rather than continued propaganda exploitation of the world's exaggerated fear of radioactive fallout from tests in the atmosphere.

d. Pending a decision to conduct the tests recommended, statements to the public should point out that the USSR nuclear weapons technology may well be overcoming our earlier lead, and the consequent national security need for a United States test program.

Sincerely,

/s/

Roswell L. Gilpatric

Inclosure:
Program Schedule

The President
The White House

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 010043.11

[redacted]

[redacted]

PROGRAM SCHEDULE

Chronological order of representative items shown in basic letter. Assume authorization date of 15 October.

October

Advance [redacted] schedule of [redacted] and [redacted] shots from November by use of balloons at NTS.

October-November

Advance [redacted] schedule of [redacted] (inherently safe) from December and February, respectively, by use of balloons at NTS. Demonstration of the Atlas D and ASROC systems.

5 to 12 November

Air drops of [redacted] and [redacted] bombs.

December

Advance [redacted] schedule of [redacted] (mechanically safe) from February, by use of balloons at NTS. Demonstration of the Polaris system.

15 January

Air drop proof tests of the [redacted] and the [redacted] (Advanced) warheads.

Spring, 1962

Air drop proof test of [redacted]

15 April

(1) Start of developmental series to include:

DELETED
- clean device
- Class D bomb device
- warhead device
- larger yield device
- warhead device
- "clean" device

(2) Earliest date for [redacted] DOD effects test on [redacted]

15 July

[redacted] DOD effects test at [redacted] feet.

9 to 18 months

[redacted] DOD effects test at [redacted] feet
[redacted] DOD effects test at [redacted] feet.

Two years

Full-scale [redacted] systems test.

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See 2, 222

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 010043.1

915101

OCT 10 1961

Dear Mr. President:

The enclosure to the letter of September 20 from Secretary Gilpatric and myself discussed the pros and cons of different environments for testing nuclear weapons. It included recommendations that preparations be made to give an immediate readiness posture for low-yield atmospheric tests in Nevada and a 3-months' readiness posture for large-scale tests at Eniwetok, and that attention be given to the possibility of conducting atmospheric tests through the medium of completely air-borne operations. In my letter of October 7, I pointed out that any appreciable speed-up in our presently-planned program could be accompanied only by going to atmospheric testing.

The present letter will discuss various aspects of testing in the three locations mentioned above, including technical feasibility for various kinds of tests, time scales, costs, etc., together with the possible effect on the schedule of our presently-planned program, should such methods be adopted. A letter of October 9, 1961 from Secretary Gilpatric describes possible tests of mutual interest as well as certain complete systems demonstrations primarily of concern to the Department of Defense.

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AUTHORITY: DOE - DFC
BY C. A. WILSON, DATE 8/15/88
Confirmed 8/16/88

The earliest possible atmospheric tests of developmental significance are some of those now proposed for the approved FISHCAT Program which could be accomplished from one to two months ahead of the current schedule by using tethered balloons at the Nevada Test Site. (Such tests are, of course, subject to possible delays due to weather.) Balloons are on hand. Rehabilitation of the ground handling equipment and training of the crews are the pacing factors of the steps required to achieve readiness; these steps will take from 10 days to two weeks. Sampling aircraft and diagnostic equipment can be ready within the same time frame.

An advance of as much as four or five months in the schedule for some of the tests in the follow-on program enclosed with my letter of September 19, 1961 could also be accomplished by use of the balloon technique. Toward the latter part of this program, testing could be conducted much more rapidly, if not inhibited by the lengthy process of preparing underground sites. The cost of balloon tests is appreciably less than of those conducted

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10/10/61

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underground, or those utilizing towers, but there is some sacrifice in the technical information attainable.

A speed-up of those tests involving yields too large to be conducted in the atmosphere in Nevada could be accomplished by utilizing an air drop technique over the Pacific, again at some sacrifice in the technical information obtainable. Proof tests of bombs, which do not require extensive diagnostics, could begin in from two to four weeks. Tests of missile warheads or developmental devices requiring the fabrication of drop containers could begin in two to three months. This sort of wholly air-borne operation, which would be conducted from air bases on Hawaii, would require aircraft for dropping the devices, for radio-chemical sampling and for air-borne diagnostics such as "bangmeters," photography and other measurements. We are assured that these aircraft and the necessary manpower are available and require only adequate priority to preempt their use.

This technique could be used for several of the tests in the follow-on program (letter of September 19, 1961). Certain of these tests (e.g., the Pershing and second generation Minuteman warheads) originally planned as low-yield mock-up tests might be conducted at intermediate or full-scale yields. This technique would also permit the introduction of some development testing involving yields so large as not to have been included in the follow-on program. The method would also be applicable to proof testing medium and large-yield weapons not suitable for underground testing.

The cost of such air-borne drop tests is estimated to be from 250 to 300 thousand dollars per event to the AEC, plus comparable DOD operating costs.

For those large-yield tests involving such complex and precise instrumentation as to require a land base, it would be necessary to open up an Island Site in the Pacific. The Eniwetok or the Johnston Island installations could be rehabilitated for this purpose. The former is larger and would permit a greater variety of tests; the latter has an available missile-launching site. To prepare the Eniwetok installation would entail removing tropical growth, rehabilitating buildings, roads, and docks, and reconditioning the utilities and other mechanical support elements. Some minor new construction would be required. As an alternative, it might be possible to negotiate with the U.K. for the use of Christmas Island, which we understand has been kept in stand-by condition and which

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has the advantage of not being in the Trust Territory. In any event, such an island operation would require activation of a military task force to furnish adequate logistic support. From four to six months would be required to accomplish all the steps necessary to begin a meaningful test series. Several million dollars would be required for initial rehabilitation of either of our own sites. The extent of further investment required would depend on the scope of the test series to be conducted. It has been our previous experience that AEC costs alone at Eniwetok averaged about two million dollars per event for an extended series of tests.

In summary, it is clear that acceleration of relatively simple tests, in the present program, can be accomplished by testing on tethered balloons at the Nevada Test Site, that larger-yield proof tests and certain developmental tests can be carried out by a completely air-borne operation within the next few months, but that it will take at least six months and a major operation to open up a Pacific Test Site for an extended development test program.

These three methods of atmospheric testing together with our underground capability would permit flexibility of response to the wide variety and frequent surprises of the developmental program.

I am sending copies of this letter to Secretary Rusk, Secretary McNamara, Mr. Bundy, Dr. Wiesner, Mr. Dulles, and Mr. Foster.

Respectfully,

Chairman

The President
The White House

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See 2, 266

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OFFICE DIARY
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FOLDER-PAGE 010104.1

OCT 18 1961

915104

Dear Mr. President:

In my telephone conversation with you yesterday afternoon concerning a proposed statement relative to the USSR announcement of their intention to test a 50 megaton weapon in the near future, I indicated that I would provide you with some further information.

Enclosure 1 is a listing of the detonations conducted by the United States [redacted] The yields have not been announced or otherwise made available on those detonations which are underlined on the listing. All of these detonations have occurred at Eniwetok or Bikini, except two detonations at altitude over Johnston Island in 1958. It is noted that the highest yield detonation we have conducted was 15 megatons at Bikini in 1954. This was a surface burst -- a condition which would tend to maximize local fallout.

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BY AUTHORITY OF DOE/OC
REVIEWED BY [signature] DATE 12/7/88
[signature] 12/5/88

Also attached, as enclosure 2, are tables showing effects of a 100 megaton and 50 megaton weapon detonated at the best altitude to create the tabulated effect. These are order-of-magnitude estimates, which necessarily have been compiled on a hurried basis. The extensive radius of thermal effects from detonations in the atmosphere up to at least 50 miles altitude is particularly worthy of note. Prompt radiation from the detonation is not significant, in that blast damage and thermal damage ranges are much greater.

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The effects of fallout which might be expected are contained in enclosure 2, also. These effects vary markedly with altitude and, in an air burst of sufficient altitude that the fire ball does not intersect the surface, local fallout would be minimal. If the altitude of detonation is increased, the residence time of the fission products in the atmosphere also increases and distribution becomes more nearly worldwide. In a detonation at 50 miles altitude in the equatorial region, average residence time in the upper atmosphere would be five to ten years and would probably increase with increased altitude of burst. This would allow fission products to decay such that the intensity of fallout would be very drastically reduced over what it would be if fired at a lower altitude.

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An effect not specifically covered in the attached tables is the destruction which could be caused by under-water detonations somewhere near our coastline or harbors. It could be of particular concern because of the relative ease with which weapons could be placed in such positions (e.g., Commercial Ship) under conditions short of active war. In addition to effects of blast and fallout from such detonations, destruction from wave action could be very great -- even to the extent of a tsunami, or tidal wave. Ability of a detonation of this magnitude to create such tidal waves is not certain, but technical evaluation indicates there is a good probability under certain conditions.

We have discussed with our weapons laboratory directors our capabilities to fabricate and stockpile weapons of 50 megatons and 100 megatons. The 100 megaton weapon would be about 6 feet in diameter, 12 feet in length and weigh about 30,000 pounds. The 50 megaton weapon would be somewhat smaller, but would have a weight of 20,000 to 25,000 pounds. It is their view, in which I concur, that on a "highest priority" basis a weapon of either yield could be fabricated and placed in stockpile in about a year, possibly even six months. This priority effort, however, would seriously interfere with the other work of the laboratories and with our weapons testing program. In an approach which would minimize interference with other weapons programs, weapons of these yields could be fabricated and stockpiled in two years. A test of such devices at a yield of 5 megatons to 10 megatons would be necessary to provide assurance of the performance of these weapons in stockpile. Our highest yield weapon now in stockpile is DELETED and weighs 10,500 pounds. DELETED

DELETED

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The Department of Defense probably can provide estimates as to the capability of the USSR to deliver weapons of this size. We have no reason to believe that they could not deliver such a weapon over the United States.

While most of the effects information included in this letter are unclassified, enclosure 1 and those portions of the letter discussing our capabilities to fabricate and stockpile these weapons, composition of our present stockpile and Soviet delivery capabilities are, of course, highly classified.

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FOLDER-PAGE 010104.3

I am taking the liberty of providing a copy of this letter to Secretary Rusk in response to his request for assistance in this regard prior to his press conference this afternoon.

Respectfully yours,

Chairman

The President
The White House

Enclosures:
2 tabulations, as above

cc: Secretary of State

Chmn

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FOLDER-PAGE 920144

List of Nuclear detonation [redacted] that have been carried out by the United States. DELETED

91510

Items underlined in list have not been publicly announced.

Name	Date	Location	Type	Yield
Mike	31/10/52	Eniwetok	Surface	10.4 *
Bravo	28/2/54	Bikini	Surface	15.0
Koman	25/4/54	Bikini	Barge	11.0
Union	4/5/54	Bikini	Barge	7.0
Yankee	13/5/54	Bikini	Barge	13.5
Nectar	20/5/54	Eniwetok	Barge	1.7
Cherokee	20/5/56	Bikini	Air	DELETED **
Zuni	27/5/56	Bikini	Surface	3.4
Dakota	25/6/56	Bikini	Barge	
Apache	8/7/56	Eniwetok	Barge	
Navaho	10/7/56	Bikini	Barge	DELETED
Tewa	20/7/56	Bikini	Barge	4.5
Fir	11/5/58	Bikini	Barge	DELETED
Koa	12/5/58	Eniwetok	Surface	1.3
Walnut	14/6/58	Eniwetok	Barge	DELETED
Oak	28/6/58	Eniwetok	Barge	0.9
Poplar	12/7/58	Bikini	Barge	
Pine	26/7/58	Eniwetok	Barge	DELETED
Teak	1/8/58	Johnston	252,000'	***
Orange	12/8/58	Johnston	141,000'	

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BY AUTHORITY OF DOE/OC
Signature John 12/5/88
Date
Signature L Liang 12/7/88

* Public announcement on Mike shot was made and yield was given as 14 This yield was revised to 10.4 MT; however, this latest yield figure has not been released.

** Announced as several megatons yield

*** Announced as yield of megaton ranges

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FOLDER-PAGE 010104.5

OPTIMUM AIR BURST FOR EACH EFFECT
(Approximated; further study would be needed before specific figures are released to the public.)

915106

EFFECT	DISTANCE OF EFFECTS FOR 50 MEGATONS (In miles)	DISTANCE OF EFFECTS FOR 100 MEGATONS (In miles)
Overpressure 24 Psi Dynamic Pressure, 2.5 Psi (Destruction of Hardened Sites)	2.75	3.5
Initial radiation dose - 700 rems	2.75	3.2
Overpressure 5 Psi Dynamic Pressure 0.7 Psi (Ordinary building)	14	17.5
Second degree burns to bare skin	45	66
Ignition of fire kindling fuels	43	60
Fireball Radius Max. (in the lower atmosphere)	3 3/8 (17,600 feet)	4 3/8 (23,000 feet)
Fireball Radius for negligible local fallout	2 5/8 (13,800 feet)	3 3/8 (18,000 feet)

GENERAL EFFECTS

A 50 MT shot would have to be detonated at an altitude of approximately 50 miles or greater to avoid burn and blast damage on the Earth's surface.

Depending on atmospheric conditions, the fireball could be directly visible at a distance of 600 miles. Atmosphere glow and aurora effects would be observed at greater distances.

At a burst altitude of 1000 miles a nuclear detonation of 50 or 100 MT could be directly visible at a distance of 2300 miles on the Earth's surface. Fireball size would be somewhat larger than a detonation at an altitude of 50 miles.

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Enclosure 2

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Chr USAEC, 1961-72
FOLDER-PAGE 010/04.6

Such high altitude detonations would probably affect long range radio communication channels because of disturbances to the ionosphere and the Earth's upper atmosphere. These effects could be noticeable for a number of hours following the shot and would be most pronounced in radio channels passing through the general area of the detonation.

Depending on the height of burst and atmosphere conditions (cloud cover visibility, etc.), burns to the retinal tissues of eyes might be expected as far as the fireball is directly visible. The radiation causing these burns would be released in the first infinitesimally short flash of light. An observer would have to be looking in the general vicinity of the burst to receive this eye damage.

With increasing altitude beyond an altitude of 50 miles, the amounts of fallout returning to the Earth would be less than if the detonation took place at lower altitudes. At an altitude of 50 miles above the equatorial latitudes, the average residence time of the debris in the upper atmosphere appears to be five to ten years. However, at high altitudes above the polar regions, fallout could return to the Earth much faster than it does in equatorial regions.

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THE WHITE HOUSE
WASHINGTON

UNCL. BY DOE
[redacted]

October 23, 1961

MEMORANDUM FOR

THE CHAIRMAN
ATOMIC ENERGY COMMISSION

The President approves your proposal to tell Sir Roger Makins, Chairman of the United Kingdom Atomic Energy Authority, that from the point of view of technical feasibility, the United States sees no objection to the detonation of a small-yield U. K. device during the current U. S. underground test series, as described in your letter of October 19, 1961.

A decision as to whether or not to make public British participation in the test can be delayed until it is known that the test will definitely take place.

You are also authorized to explore with Sir Roger the possibility of our using Christmas Island and its facilities in the event that the United States decides to implement plans now being prepared for the resumption of atmospheric testing.

McGeorge Bundy

900601

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 11020

Saturday, November 4, 1961 - D. C. Office

I worked on various AEC papers and answered some letters, including those criticizing my and the Government's supposed views on atmospheric testing.

I had lunch at the Metropolitan Club with Jim Ramey (Executive Director, JCAE), Dwight Ink and John Graham. We brought Ramey up-to-date on weapons testing, proposed collaboration with England (their test at Nevada and our use of Christmas Island), reactor projects to be postponed because of the FY '62 budget cut, the recent reorganization of the AEC, which Ramey thought was done in a poor manner, and other matters.

Bundy called me to say that the President has a letter (copy attach. from the British Prime Minister saying that they would like to use our underground testing facilities. He said that the White House is inclined to pool this request into the Christmas Island issue for whatever bargaining power it might hold. He is sending a copy to me immediately, asking that I take a good close look at it, and then we can discuss it. They will be drafting an answer this weekend.

He then said I should talk to Farley about the most favorable manner for negotiating. I told him that at this stage our plan is as follows: representatives of AEC, DOD. and State are going to London to talk to Ambassador Bruce.

BY AUTHORITY OF DOE/OG
DATE 11/1/89
SIGNED BY
11/22/89
* Memo, NSC, Graboske to DOE, OCTP, dtd. 9/18/89.

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FOLDER-PAGE 11021

At about the same time we will be talking to Ambassador Ormsby-Gore here. Then, if necessary, someone at a somewhat higher level will go from here to talk to the Foreign Office.

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[redacted]

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11/18/61-3

Eric had a birthday luncheon which twenty of his school friends attended. 11092

900640

Sunday, November 19, 1961

I spent the day at home with the family. The first snow of the season started tonight. 11093.1

900641

Monday, NOvember 20, 1961 - D. C. Office

I spent most of the day attending a PSAC meeting, where the main issues were the content of the U.S. atmospheric testing program, a description of the conclusions to be drawn from the Russian tests

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the need for content of a U.S. civil defense policy, and the need for a Nike Zeus anti-missile program.

In the late afternoon I presided over Commission Meeting 1801 (action summary attached). 11093.2

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WPSchmidt 6/13/86
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S. Seaborg 6/18/86

[redacted]

WPSchmidt
Consultant
OADR
XO 12356
S. Seaborg 6/1

See 2, 431

[redacted]

SOF 6/D2F/34

November 29, 1961

Dear Mr. President:

[redacted]s requested in NSC Action Memorandum [redacted] a careful study has been made of all of the nuclear weapon test shots proposed by the weapons laboratories and by DOD for inclusion in an atmospheric test program which might be conducted over a three-month period, beginning in the spring of 1962. The proposals were reviewed in the light of the continuing objectives of our nuclear weapons program, our position vis-a-vis the USSR -- taking account of the marked advances revealed by their recent test series -- and our current state of readiness as adversely affected by the test moratorium. Some 49 possible test shots were reviewed, of which a minimum of 27 are recommended for inclusion in the early program.

The program under consideration has both general and specific objectives. In common with all technologies, the development of nuclear weapons combines the techniques of theoretical and experimental science with the development and design of specific devices. At each stage, data based on past experiments and tests are combined with known theory to devise new and more revealing experiments and improved devices which are subjected to experiment and the process is then repeated. At appropriate points the results are used as the basis for the design of specific weapons. The trends of the developments and the objectives and characteristics of the weapons are, of course, subject to such external factors as delivery capabilities, expected enemy countermeasures, the availability of special materials, etc.

The normal cycle of a year or so was, of course, perturbed by the test moratorium. During the three-year period the information gained from the Hardtack series was exploited about as far as it is feasible to go without further experimental checks. New weapons introduced represent the greatest extrapolations from tested configurations that it is prudent to use without further test. Understanding of the underlying principles and of the probable behavior

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10/23/90

of extrapolated arrangements were extended by calculation and analysis to the limit in the absence of additional data. Except in a few limited areas, further substantial progress would not be possible without additional experiments. The resumption of underground testing has of course made it possible to progress in those aspects of the program for which experiments and tests are feasible in that environment. There remain, however, larger and more important areas that cannot be covered in an underground program. Hence, over a major portion of weapons technology, above-ground testing is essential to any substantial future progress and recovery of momentum by the Laboratories.

Urgency is added to the need for progress by the substantial advances made by the USSR. In certain areas of the underlying technology, they have surpassed any results that we have achieved or, indeed, know how to achieve with any degree of certainty; some of their devices, notably the larger ones, go beyond our own. Even more importantly, they have a new accumulation of experimental data on which to base still further advances. Especially if exploited through still further tests, these advances could well result in drastic, and possibly decisive, changes in the relative positions of the two countries unless we too make substantial progress.

Certain specific areas are of special military interest. Each potential adversary now has, or soon will have, a stockpile of strategic nuclear weapons such that if delivered on target, virtual destruction of the enemy would result. Increasingly, therefore, much of the future effort of each side will be directed at measures designed to prevent the delivery of enemy weapons while, at the same time, preserving the deliverability of one's own weapons in spite of the enemy's preventive measures. This game of counter- and counter-countermeasures can take many forms including (1) measures for destruction of enemy weapons on base--countered by hardened bases, and mobility (aircraft in flight, Polaris submarines, mobile Minutemen, etc.); (2) anti-missile systems including the use of defensive nuclear warheads--countered by hardening of offensive missiles, by clustered warheads and/or decoys and by offensive warheads effective at greater altitudes where defensive measures are more difficult; (3) increased defensive capabilities against aircraft--countered by low level penetration, requiring rugged "lay-down" types of weapons, or by long-range air-to-ground missiles; (4) interference with radar and communications through nuclear explosions as well as by conventional means.

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In general, strategic effectiveness can be enhanced by increasing the diversity of methods of accomplishing a given mission, thus complicating the defenses, and by improvements lessening the requirements on the carrier. For example, large dividends can result from improvements permitting weapons of a given destructive potential to be carried by missiles as well as by aircraft, by Minuteman or Polaris as well as by Atlas, etc.

These considerations lead to urgent requirements for (1) increased knowledge of the effects of nuclear explosions on hardened bases and on missiles and on radar and communications -- as bases for designing both improved defensive measures and effective counters against enemy defenses; (2) developments leading to decreased nuclear vulnerability of our own offensive warheads; (3) decreased weight-to-yield ratios of strategic missile warheads in order to permit increased diversity and greater pre-strike mobility and to increase penetration capabilities through the use of clusters and/or decoys, through hardening of the individual missiles or through use of greater yields at higher altitudes; (4) developments increasing the effectiveness of our own defensive weapons through enhanced effects and through decreased weight-to-yield ratios, permitting longer range and higher altitude delivery at given yields or greater kill range at given weights.

In the area of tactical weapons, two considerations predominate: (1) developments permitting greater diversity of delivery methods for given missions such as developments permitting the use of simpler and more mobile launching mechanisms; enhanced effects and decreased weight and size are important here; (2) improvements and economies making possible wider deployment of tactical weapons in advance of knowledge as to places of potential need; reductions in requirements for special nuclear material per weapon are of importance in view of the large numbers that are involved. (Clearly, in this area, the number of weapons deployed is far larger than would ever actually be used.)

In view of the above considerations and our present situation, our test program can be considered under three major headings: (1) measurements of weapons effects; (2) tests of advanced concepts leading to better understanding and to markedly improved and less vulnerable weapons; and (3) tests of actual weapons incorporating substantial extrapolations from previously tested configurations so that both developmental and verification objectives are achieved.

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[redacted]

It is clear that measurements of weapons effects must be conducted in the environment to which they will pertain and, hence, require experiments in and above the atmosphere. It is also important that many of the tests required, for example, those relating to anti-missile systems and to improvements in strategic penetration, perforce involve large yields and, hence, either cannot be conducted underground at all or only slowly, with great difficulty.

It has been our experience underground to date that such things as the mechanical difficulties of digging very deep (up to 2,000 ft.), large diameter holes (36 inches), bring into question the feasibility of using the vertical hole approach for testing yields much above 20 KT. We have proposed and did plan that yields up to 100 KT be conducted underground in tunnels; however, our experience with post-shot contamination in the tunnels at the Nevada Test Site up to this time gives us some concern that our planning in that aspect was not realistic. It is now estimated that, if feasible at all, tests of this magnitude could be conducted at a rate of not more than a very few per year, even under favorable conditions, in a given tunnel complex. In contrast, large yield devices can be tested in rapid succession in the atmosphere with relatively little advance preparation of the means of testing.

A second important factor in relative capability is that of diagnostic instrumentation. For test shots which can be satisfied by relatively simple instrumentation plus good radiochemical analysis, tests in the atmosphere can be much more effective in furnishing early information than can underground experiments, at least with current techniques. This is especially important when the results of one test determine parameters to be used on a succeeding test in the same series. (In one, so far extreme, case it required almost two months to do the digging necessary to obtain an adequate radiochemical sample from a shot in the current series.) Even relatively complex instrumentation is easier for atmospheric tests if barge shots can be used.

Both time and place will influence the choice of test shots that can be included in an atmospheric test program. In accordance with ~~your~~ the memorandum we are planning on a target date of April 1, but recognize that it may be advisable to postpone the date by a month or so, as more specific plans may require.

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The choice of test site will dictate how the tests can actually be conducted. Technically the Eniwetok Proving Ground is the most desirable, extending as it does over a substantial area, with a lagoon suitable for barge shots. All of the contemplated tests could probably also be conducted, though not so well, at Christmas Island. Since Eniwetok has political difficulties and the availability of Christmas Island is at best uncertain, prudence dictates that we be prepared to test elsewhere if necessary. Fortunately, many of the proposed tests could be conducted without a highly-developed island site, although they would benefit from such a site. Some could be done by air drops probably staged from Hawaii with limited instrumentation on some small island, such as Johnston, not suitable for more extensive development; with some degradation of diagnostic information, others could be carried out by air drop over the open ocean using such instrumentation as could be carried in accompanying aircraft or on ships. However, some of the most complex experiments are of questionable feasibility except over an extended land base such as Christmas Island; in the absence of such a base, serious consideration should be given to conducting some of these above ground in Nevada. In any case, for geophysical reasons, one important test to determine the effects of a nuclear explosion on hardened missile bases could be conducted only in Nevada. A special requirement also exists in connection with rocket lifted test shots for which Johnston Island is the logical launch point because of available facilities.

It has been proposed that tests be conducted in space in order to avoid fallout. Preliminary analysis of space vehicle capability and reliability and difficulty of instrumentation indicates that it would cost approximately 100 million dollars over a 2-year period to develop such a capability and about 20 million dollars per shot thereafter. Consequently, it was not considered available for this program.

Another important consideration in planning the test series is the restraint to be placed on yield because of fallout and its political implications. The series now proposed would have a total yield of approximately [redacted] this compares to the recent Soviet tests totalling approximately [redacted] By appropriate test techniques, it should be possible, within limits, to restrict the worldwide fallout, at the cost of producing local fallout. The balance struck would be dependent on the choice of site.

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[redacted]

In studying the proposed series of test shots, it is apparent that no great advance in weapon technology can be attributed in advance to any one proposed experiment. Indeed, it is rare that a single test shot can, by itself, lead to a major advance in nuclear weapon technology. Progress in this area is much more likely to come from a broadly based, interrelated series of experiments--some empirical in nature and some the result of careful calculations--from which one can then advance to bolder, more advanced concepts. The group of 27 tests which appears to be a minimum program must therefore be considered in the context of the gains that could be made from this group of experiments as a program, recognizing that they fall logically into three categories.

The first category covers the general area of the effects of nuclear weapons on such things as hardened missile bases, on missiles in flight, on radar and communications and on naval vessels and their equipment. It is axiomatic that weapons effects in a given environment must be understood if we are to be able to plan for the proper design of weapons to fit a particular military requirement. While there have been many nuclear tests which sought to develop information about weapons effects, it is apparent that there are still significant areas of unknowns of importance to the military use of nuclear weapons. Four tests that fall solely in the effects category appear to be feasible for inclusion in an early series, but other recommended tests will have effects implications. The area of greatest interest lies in effects at very high altitudes as they apply to AICBM defenses and to the kill capability of our own AICBM warheads. A series of five such tests has been projected, varying in yields from a [redacted] to about [redacted] and in altitudes from 20 Km to above 400 Km. However, practical considerations with respect to development of instrumentation techniques and related preparations make it unrealistic to plan for more than two of these shots in the short time available. It is important that preparations go forward to conduct the others, and perhaps additional ones in the next test series. The effects of antisubmarine warheads are also of interest, as are the effects of the electromagnetic pulse from a surface burst as they relate to the operational effectiveness of hardened missile bases. One each of such tests is included.

The second major category into which test proposals fall is that of advanced concepts for improving weapon effectiveness and decreasing warhead vulnerability. Advances range all the way from exploring changes in [redacted] design of "standard" devices

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through the exploring of very advanced concepts for greatly improving the efficiency of thermonuclear "burn". New ideas in thermonuclear technology promise great enhancement of the fusion-to-fission ratio [redacted] Direct practical objectives include significant reductions in the weight-to-yield ratio of all classes of offensive and defensive weapons; decreased vulnerability of our own offensive weapons; enhanced weapons effects, including progress [redacted] and reductions in special nuclear materials, particularly for tactical and defensive warheads.

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Although it would certainly be desirable to include all of the proposed tests of advanced concepts, practical political considerations, and the short time available for design and fabrication of devices dictate that some of these proposals might be postponed to a later test series.

While the program recommended here represents the current best thinking, it must be pointed out that the underground test program particularly in the area of advanced concepts, is almost certain to produce surprises which will dictate changes in any atmospheric series which might be planned now. Accordingly, one must recognize this and retain flexibility to add, substitute, or otherwise modify the program. On the assumption that such flexibility will be possible, for example, the recommended program has not included tests proposed by the laboratories that repeat completed or scheduled underground tests, or other tests that can presumably be carried out underground; in the event of failures in the underground test program, appropriate revisions to the atmospheric series will be required. On the other hand, knowledge gained from successful underground tests may call for elimination or modification of some of the presently proposed atmospheric tests.

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In addition to provisions for flexibility, current planning should provide for preparations for a second test series, about a year later, looking to more dramatic advances than are possible in an early time frame. In fact, it is essential to plan for a second series in order to accomplish the very important effects tests that could not be included in this early time scale. In looking at what test devices can be made available in the April to July period, it is apparent that we are suffering to some extent from the three-year test moratorium. During that period, while the United States was negotiating in good faith, the bulk of our nuclear weapon design effort was oriented towards devices that could be stockpiled with adequate assurance without tests. Thus, the climate was not conducive to bold, new concepts requiring experimental checks. The possibility of being able to test seemed very remote. In contrast, the available evidence indicates that from the very outset of the moratorium, the Soviets have anticipated atmospheric testing and have oriented their efforts toward significant advances requiring such testing.

In summary, it is clear that a rate of progress adequate to maintain our relative military posture can be attained only through resort to atmospheric testing; indeed, much vital information on effects and many possible technical advances, would not be realized at all through underground tests alone.

Accordingly, it is recommended that a program to consist of a minimum of 27 test shots as indicated on the attached Enclosures "A" and "B" be approved for atmospheric testing to be conducted over a period of approximately three months beginning in the spring of 1962. A description of each of the additional tests proposed for consideration by the laboratories and by the DOD, but not now recommended for inclusion in this first series, is also attached as Enclosure "C". For your information Enclosure "D" lists all known nuclear explosions conducted to date by the various countries.

Sincerely,

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Glenn T. Seaborg
Chairman, NSC Committee on
Atmospheric Testing Policy

The President
The White House

Enclosures

See 2, 442

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GLENN T. SEABORG
Chr USAEC, 1961-73
FOLDER-PAGE 12070

epartment of Defense
Washington

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12/11/61

900698

[redacted]

December 1, 1961

MEMROANDUM FOR THE CHAIRMAN, JOINT CHIEFS OF STAFF

SUBJECT: Atmospheric Testing

REFERENCES: Memo to Chmn, JCS, from SecDef - 12 Oct 61;
Memo to Chmn, JCS, frm DepSecDef - 3 Nov 61;
NSC Action Memo #112 - 13 Nov 61

1. At the meeting of the President with the NSC Committee on Atmospheric Testing Policy held on 30 November 1961, the following decisions were reached:

a. Preparations for the program outlined in the letter to the President from the Chairman of the Committee of 29 November 1961 was approved. Attached is the list of events. The approval referred to the general scope of the development program; however, after further review some events may be deleted or substitutions made. With respect to the effects program preparations for four tests are authorized as follows:

(1) 1 - 2 MT at 400 km altitude. Johnston Island.

(2) [redacted] km altitude. Johnston Island.

(3) [redacted] KT near surface shot at the Nevada Test site. Final authorization as to allowed yield and height of burst of this shot will depend upon the amount of off-site fallout expected for each alternative. In this connection the Defense Atomic Support Agency will be asked to provide the necessary study.

(4) [redacted] ASROC Test in the Pacific Ocean.

b. Preparations for the tests should be based on the assumption that, except for the one Nevada shot, the operations will be staged out of Johnston and Hawaii. Parallel continuing efforts will be made to acquire and ready Christmas Island; however, time is of the essence and such efforts with regard to Christmas Island should not be permitted to delay the preparation for the operations from Johnston and Hawaii. If Christmas Island becomes available in time it can be planned for use for the first operation; if not in time, for later operations.

* CLASSIFIED ENCLOSURE(S) WITHDRAWN
BY AUTHORITY OF DOE/OC
G. Dunn 8/13/90
DATE
REVIEWED BY
* Ltr. DOD to DOE, OC dated 8/13/90
* Ltr. DOE to DOE, OC dated 9/11/87
* Ltr. NSC Staff to DOE, OCTP Sitrep-1 dated 2/13/85

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The preparations should be made on an urgent basis to permit completion of the needed tests at the earliest possible time and to accomplish firing in the shortest feasible period. For planning purposes the target date for readiness to fire should not be later than 1 April and, if possible, it should be advanced. The length of the operation should be a minimum, if possible two months, but in no case more than three months.

d. Planning and preparations for a follow-on operation about a year later should continue.

e. As much development and effects testing as possible will continue to be accomplished underground. This means that preparation of underground sites should proceed at the maximum possible rate.

f. The President has not made the decision whether or not to conduct atmospheric tests. The decision will be reached at the time it is necessary to make a public announcement or about two weeks prior to the first readiness date.

2. The President intends to make no further public announcements now; however, the Assistant Secretary od Defense (Public Affairs) will prepare contingent plans to answer queries which may arise with respect to the preparations.

3. You are authorized and directed to take the necessary actions to implement the foregoing decisions.

/s/ Roswell Gilpatric

Incl.:
Proposed Tests
NS Action Memo #116 - 1 Dec 61

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 12071

Addition to Thursday, December 21, 1961 (Unclassified, Edited)

...arriving in Bermuda at 1:00 p.m. (their time).

We had lunch at the Bermudiana with Sir Norman Brook, Sir Evelyn Chuckburgh, Secretary Dean Rusk, Ormsby-Gore, Earl Home, General Chester V. Clifton, Sir William Penney and William Tyler (Deputy Secretary of State). We discussed the Berlin and Congo problems, the Indian invasion of Goa, The Dutch-Indonesia problem, and the status of the U.K. possessions throughout the world.

Between 5:00 and 6:30 p.m. I attended the meeting of President Kennedy and Prime Minister Macmillan at Government House and participated with Rusk, Home, Penney, and Brown in a discussion of the atmospheric testing question and our possible use of Christmas Island.

Sir William Penney opened with a technical summary. He believed the U.S. was still slightly ahead. He felt both sides might now be forced to attempt setting up an antimissile defense. This would be a fantastically difficult and costly effort. The Prime Minister was concerned about the piling up of bigger and bigger bombs if the arms race proceeded unchecked. He felt that the U.K. would probably drop out but the two superpowers would go on and on piling up sophisticated weapons. Meanwhile "everyone else" would have simple Hiroshima-type bombs within twenty-five years. This was an intolerable prospect. Mankind could not go on this way. We had to make another effort to reach an agreement.

Macmillan noted that both the United States and Great Britain had made great efforts in the test ban talks. David Ormsby-Gore had spent three years in Geneva,"the dullest city in the world." The talks had almost succeeded and then somebody - he asked me to forgive the allusion - unveiled the "big hole" (he was referring to the decoupling method of evading detection of underground tests under a treaty, and the need for control son underground tests got out o hand. People were saying that underground test were not very useful. We might have had an agreement; the failure to get one was a great pity.

Now there was a decision to be made. Should there be a new test series for which the British would allow the use of Christmas Island? Or should we make a serious new disarmament effort? Could not he and the President and Khrushchev get together and make a great new effort to break the cycle of the arms race? It might fail, but if so we would have lost only a few months. He had been reading Russian novels in order to learn what he could about the and felt that they might come around.

The President commented that Soviet behavior over the last nine month suggested that they did not want an agreement. Was it not true, for example, that they had been preparing since February the test they initiated in September?

The Prime Minister asked what a 100-megaton bomb would do to people. Penney replied that it would burn up everyone in even the largest city. The Prime Minister next asked how many large bombs it would take to destroy England. Penney estimated that eight of the existing multimegaton weapons would be enough to"make a terrible mess" of England. The Prime Minister continued that he had asked Khrushchev what would

happen if all the bombs in the world went off and Khrushchev had said there would be nobody left but the Chinese and the Africans.

The Prime Minister observed that a large proportion of the U.S. strategic weapons were based in England, and then added: "Every time you lift the phone, Mr. President, I think you may say that you intend to go, and I wonder what answer I would give."

President Kennedy felt that before long the nuclear arms race would come to a standoff where neither side could use these weapons because it would be destroyed if it did. Rusk said this would work only if it were a standoff in which both sides believed. Brown agreed, saying the standoff would have to be psychologically as well as technologically stable.

Macmillan thought the position of the Russians might be changing. Their economic structure was really not very different from that of Western Europe. In both cases railroads and mines were nationalized. They had a ruling class that enjoyed special privileges, including sending their children to schools like the British public schools. In other words the forces of humanity were operating the same in all countries. Couldn't we allow these forces to bring us closer together instead of persisting in the arms race?

Foreign Minister Home observed that the new U.S. plan for general and complete disarmament was basically very similar to the Soviet plan except in the important area of inspection. This being the case, could we not make the impending meeting of the Eighteen-Nation Disarmament Committee a moment of major effort? Perhaps it could be kicked off by the eighteen heads of the state.

I remarked that the test ban negotiations might have to be linked with general disarmament because the problem of secret Soviet preparation made it harder and harder for the West to accept a test ban treaty as a separate measure. The President adverted again to the discouraging experiences of recent months. We could not get taken twice. Even though he was a great antitester, he felt we ought to make preparations for a test series and then carry out the tests unless we got something substantial in some other field that helped our security in the world. The President added that there was only one serious issue, the balance of missile/antimissile capabilities.

Lord Home repeated that there must be a major effort to get on with disarmament and stop the arms race. The President replied that the timing was difficult. We could not start an atmospheric testing just when we were kindling new hopes for disarmament.

The President summarized the discussion by saying that there appeared to be three questions:

1. Should the U.S. "prepare to test and then test?"
2. Should there be a parallel effort on disarmament?
3. Would the U.K. help the U.S. testing program by making Christmas island available?

Macmillan then said that he thought the discussion had been most helpful and that he felt better.

I had dinner at Government house with the Governor General of Bermuda Sir Julian and Mrs. Gascoigne, President Kennedy, Gascoigne's son and his wife, Bundy, Shuckburgh, Brook, Rusk, Bohen, Ormsby-Gore, Home, Clifton, Penney, Tyler, and others. I sat one place removed from President Kennedy at the table, which gave me

an opportunity to talk to him. He invited me to go along - and I accepted - on his trip to California to give the Charter Day address at Berkeley on March 23, 1962; he also accepted my invitation to visit the Livermore Laboratory at that time. I also had the opportunity, over coffee cups, to talk to President Kennedy and Prime Minister Macmillan about nuclear testing; they both feel that the U.S. overemphasized the value to the Soviets of their cheating on underground testing and were unhappy that the U.S. made so much out of the "Big Hole" method of evasion by "deoupling," because it is now apparent that it would have taken the USSR many, many years to catch up through underground testing. They feel that if the test ban treaty had been consummated, without worrying so much about clandestine underground testing, we might be in much better position today so far as the arms race is concerned and would also be further ahead of the USSR.

The trip to Bermuda took me away from the first annual reception that Helen and I gave at our home for the members of the Chairman's and Commissioners' staff in recognition of the Christmas season. In my absence, Helen went ahead with the reception. Howard Brown was very helpful in that he introduced many members of the AEC staff to Helen whom she had not yet met. In the course of the evening I telephoned home from Bermuda to express my greetings. Howard Brown and Pete tried to set up an amplifier system so that I could talk to the assembled guests, but they were not successful in accomplishing this.

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901137

January 22, 1962

Dear Clint:

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DELETED I have asked Dr. Seaborg and Secretary McNamara to look into all these matters further and report to me. I will see that you are advised of the results of their investigations.

Sincerely,

(sgd - John F Kennedy)

Honorable Clinton P. Anderson
Chairman
Subcommittee on Security
Joint Committee on Atomic Energy
United States Senate
Washington, D.C.

CLASSIFICATION CANCELLED *
WITH DELETIONS
BY AUTHORITY OF DOE/OC
J. Dias 3/5/90
REVIEWED BY DATE
* Ltr. NSC Grabeske To DOE. OCTP Siebert dated 2/10/89
Rahm 3/5/90

[redacted]

See 3, 213

GENERAL ADVISORY COMMITTEE
TO THE
U.S. ATOMIC ENERGY COMMISSION
P.O. BOX 1538
WASHINGTON 7, D.C.

February 16, 1962

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FOLDER-PAGE 014077.1

Dr. Glenn T. Seaborg, Chairman
U. S. Atomic Energy Commission
Washington 25, D. C.

Dear Glenn:

The 78th Meeting of the General Advisory Committee was held in Washington, D. C., on January 29, 30 and 31, 1962. All Committee members were present at all sessions with the exceptions that Dr. Wigner was not present on the morning of January 29 and Dr. Pitzer was not present at either session on January 31. The present members of the Committee are Philip H. Abelson, Manson Benedict, Willard F. Libby, Eger V. Murphree, Norman F. Ramsey, J. C. Warner, Eugene P. Wigner, John H. Williams, and K. S. Pitzer, as Chairman. Also present were Robert A. Charpie, Secretary, and Anthony A. Tomei, Assistant Secretary. 915128

The following recommendations and actions of the Committee are herewith presented:

(1) Weapons Matters

The Committee found the conclusions of the Bethe report very sobering. The report shows that the Russian weapons capabilities have been very substantially advanced by their last test series. In addition to the high yield weapon they seem to have discovered methods of obtaining yield-to-weight ratios at least as low as our best, but in ways unknown to us.

Although the Committee was pleased to learn that plans for an extensive series of weapons tests in the atmosphere are far advanced, we are distressed not to see more genuinely new devices scheduled for test. To us this suggests that weapons development was allowed to lag seriously during the three-year test moratorium.

It is our hope that the maximum effort will be made to obtain information of value to the defense against intercontinental ballistic missiles. The possibility that logistic or technical difficulties might result in delay, cancellation, or failure of the 50 km effects shot presently planned concerns us deeply. Adequate provision should be made so that a second 50 km effects shot can be carried out in case the first fails. We hope that provision also can be made

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to include a 2000 km high altitude shot to support research on the same subject.

The Committee believes the weapons laboratories should begin work immediately on the design of a clean 100 megaton bomb or warhead and that new studies of the possible uses of such a weapon should be undertaken. The problems of design and construction in this yield range are so new that we cannot afford to remain ignorant of them. The question of how to test such a device need not be explored now. The recommended design effort may well determine the need for an actual test.

(2) U. S. Weapons in Foreign Countries

The Committee discussed the distribution of weapons in NATO countries and the extent to which this might contribute to the nuclear weapon development and production capability of these nations. The Committee believes that this question is dependent on many non-technical matters and that the Committee does not have adequate information or authority to make definite recommendations. The Committee does believe that a foreign nation would obtain information of value to a weapons development program from the data on U. S. weapons characteristics currently being made available to NATO countries, particularly if these data were supplemented by the results of clandestine visual and radiographic inspections.

The Committee was greatly concerned by the information revealed in the Joint Committee Report on NATO Nuclear Weapons Arrangements of February 11, 1961. The danger of a catastrophe from an illicit use of a nuclear weapon by an irresponsible group is a very real one to the avoidance of which vigorous technical and administrative efforts should be devoted. Technically there are many possibilities, some of which are being explored at Livermore and elsewhere to provide a much greater weapons safety than exists at present. Such investigations should be vigorously supported. The observations made by the Joint Committee may indicate the desirability of the establishment of an independent organization to inspect periodically the custodians, custodial procedures, and weapons in foreign countries.

(3) Underground Explosions

The GAC was pleased to hear presentations on the Gnome Project by Drs. Kelly and Higgins. It was apparent that the effects observed were different from those at Rainier and were not precisely those which

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had been anticipated. It is clear that much remains to be learned concerning phenomena accompanying underground events. At the same time it seems likely that there will be continued need for underground testing. The desirability of better understanding of the accompanying phenomena seems obvious.

In this connection the study of decoupled events seems important in view of the following potential benefits to the test program:

1. Containment of larger shots at shallower depths.
2. Substantial decrease in seismic intensities both close-in and distant.
3. Ability to obtain radiochemical samples more rapidly.

The Committee feels that tests should be carried out in which decoupling is thoroughly investigated. This would involve firing shots in cavities of substantial size preferably in a structure that offers the possibility that the cavity would not be substantially damaged.

A salt dome where the cavity could be created by dissolving the salt at substantial depth is believed to have many advantages for such a test. There is a good possibility that the cavity could be used for a number of tests and could be located deep enough so that relatively large yield tests could be carried out. It is likely that material for radiochemical analyses may be more readily recovered. Tests in such a cavity could yield definite information on the feasibility of producing plutonium and tritium by underground explosions. Valuable information on underground explosions for producing electric power could also be obtained.

(4) Controlled Thermonuclear Reactions

The General Advisory Committee was briefed by the Los Alamos and Princeton groups on the present status of their efforts in the field of controlled thermonuclear reactions. The Committee felt that it would be desirable to receive a similar briefing from the Oak Ridge and the Lawrence Radiation Laboratories at its next meeting in March.

Following this briefing, the Committee will activate an Ad Hoc Sherwood Subcommittee consisting of Drs. Abelson, Ramsey, and Williams, as Chairman, to be responsible for making further detailed investigations of operations both in the above Laboratories and in other places. Subsequently the Committee will make recommendations to the Commission regarding future work in the controlled thermonuclear field.

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(5) AEC Reports to the GAC

The GAC met with Dr. English, Dr. McDaniel and Mr. Burchard regarding the adequacy of reports provided to the GAC. The Committee is generally satisfied with the format and content of the present monthly report to the GAC. It is useful, however, only if it is available on a current basis. The other routine reports which the GAC receives continue to be very useful to the Committee. In addition the GAC feels the need for receiving more detailed classified information than can be given in the monthly report, because of its rather wide distribution. As a supplement we suggest that sensitive classified information of value to the Committee be supplied in an Appendix to the monthly report, one copy of which would be sent to the GAC office in Washington together with the copies of the regular monthly report to the GAC.

(6) Ernest Orlando Lawrence Awards for 1962

The recommendations of the GAC for the Lawrence Awards for 1962 have been presented to the Commission in a separate letter dated January 31, 1962.

(7) Chairman of GAC

Dr. Manson Benedict has been elected as Chairman of the GAC for 1962.

(8) Weapons Subcommittee

The Weapons Subcommittee will visit Los Alamos on March 2, 1962, and Livermore on March 5, 1962. The Subcommittee will also meet in Washington on March 28, 1962, to hear briefings on the weapons test results and plans, and a summary of new intelligence information.

(9) 79th Meeting

The 79th Meeting of the GAC will be held at the Brookhaven National Laboratory on March 29, 30 and 31, 1962. The agenda for this meeting will include the following topics:

1. Project Sherwood at ORNL and LRL
2. BNL program
3. Report of Weapons Subcommittee
4. Fermi Award recommendations

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(10) 80th Meeting

The 80th Meeting of the GAC will be held at the Berkeley and Livermore sites of the Lawrence Radiation Laboratory on July 9, 10 and 11, 1962.

Sincerely yours,

Ken

K. S. Pitzer
Chairman

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This document consists of 12 pages.
Copy No. 1 of 30 Series A

February 16, 1962

PROPOSED ATMOSPHERIC TEST PROGRAM

915129

This memorandum will review and bring up to date the major objectives, the program content, and the operational plans for the proposed atmospheric test program. A list and brief descriptions of the events now being planned are given in attachments. More detailed explanations of important departures from the original program are given in the body of this document.

General Objectives

The over-all objective of the program is to increase our understanding and improve our technology in the fields of weapons and weapon effects. During the three-year test moratorium the information gained from the 1958 HARDTACK series was exploited to the utmost both to design the most advanced weapons that could prudently be stockpiled without further testing, and to extend our understanding of the underlying principles by calculation and analysis. Further progress was difficult and slow. Inability to experimentally test extensions of existing principles and new ideas gravely hampered the weapons laboratories, reduced their momentum and, indeed, made it difficult to hold together the experienced teams of scientists and engineers.

WITH DELETIONS
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DATE 11/23/88
11/28/88

Resumption of underground testing has, of course, permitted progress in important areas, and has had an invigorating effect on the laboratories. It is possible, though with difficulty in many cases, soon to test all present single-stage devices, including the [redacted] devices. With improved techniques it may be possible in the relatively near future to test two-stage devices of yields up to, say, 100 KT, and higher limits will probably ultimately be reached. However, experiments and tests at the larger yields must be conducted in or above the atmosphere; furthermore, certain weapons effects measurements can be conducted only in the atmospheric environment to which they pertain.

In the proposed atmospheric program stress has been placed on certain areas of special military interest, importantly those relating to delivery capabilities of our weapons in the face of enemy defenses and to our own defense against enemy weapons. Specific objectives include (1) increased knowledge of the effect of nuclear explosions on hardened missile bases, on missiles and their warheads and on radar and communications, all of importance to both offense and defense; (2) developments leading to decreased nuclear vulnerability of our own offensive warheads; (3) decreased weight-to-yield ratios of strategic missile warheads; decreased weight at given yields would permit greater diversity and pre-strike mobility of vehicles, and the incorporation of such penetration aids as clustered warheads or decoys and the hardening of individual missiles; conversely, higher yields would permit detonation at higher

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altitudes, increasing the problems of defensive systems; (4) developments increasing the effectiveness of our own defensive weapons through enhanced effects and through decreased weight-to-yield ratios, permitting longer range and higher altitude delivery at given yields or greater kill range at given weights. Corollary benefits would result from greater diversity of delivery methods for tactical weapons and economies in the use of nuclear materails, of importance for tactical and defensive weapons where large numbers must be deployed over wide geographical areas.

The Technical Program

The technical program has been developed in the realization that no great advance in weapons technology can be anticipated from any one proposed experiment. Progress is much more likely to result from a broadly based inter-related series of experiments--some empirical in nature, some based on careful calculations--from which one can move forward to bolder advanced concepts. The experiments and tests must, therefore, be considered in the context of the gains that can be expected from the program as a whole, underground and atmospheric, recognizing that it falls logically into three principal categories: (1) tests of advanced concepts leading to better understanding and to markedly improved and less vulnerable weapons; (2) tests of actual weapons, incorporating substantial extrapolations from previously tested configurations so that both developmental and verification objectives are achieved; and (3) measurements of weapons effects, primarily the responsibility of the DOD.

The presently proposed experiments and tests are listed in Appendix "A" together with their estimated yields. (Possible additional proposals from the DOD are not included.) Brief descriptions of each event and its purpose are given in Appendix "B". The twenty-five items are expected to be reduced by one or two by further consolidation of the plans.

Deletions and Additions. The list incorporates several changes from that recommended to the President on November 29 by the NSC Committee on Atmospheric Testing Policy.

The following deletions have been made from the November 29 list:

1. The [redacted] and the three [redacted] experiments have been shifted to the underground program.
2. The [redacted] experiment, intended to investigate the possible [redacted] could not be readied in time for this test series. A related, low-yield experiment will be done as part of the underground program.

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[redacted]

3.

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The following consolidations have been, or are being, made:

1. The "Sioux" effects measurements will be performed in connection with the DOD hardened missile base effects test, thus eliminating the need for a special shot for "Sioux."

2.

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Five new items have been added to the list. Three of these, the [redacted]' the high yield [redacted] and the 200-pound clean device do not differ markedly in kind from other tests. They are described in the attachments. Two others merit special attention:

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1. For many reasons it is desirable to develop the capability of testing in outer space. This method would have the obvious advantages of avoiding fallout and other causes of public agitation; indeed, special and complex surveillance systems would be required even to detect the tests. Tests could be launched from continental bases on whatever schedules were required. Once developed the techniques need not necessarily be more difficult or expensive than off-continent atmospheric tests. One might hope that such a capability, together with advances in underground techniques would eventually largely eliminate the need for atmospheric tests except for those involving environmental effects. With these advantages in mind, there is proposed a very high altitude experiment, the primary purpose of which is to

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Measurements will be made of the X-ray yield, the neutron spectrum (by time of flight), the gamma rays (giving the primary to secondary time interval, and the fission yield) and the optical signals. Although similar measurements will be made in connection with the 400 Km effects test "Starfish," they will be of limited value for the primary purposes of this experiment because of the presence of appreciable atmosphere at 400 Km, and for technical and operational reasons relating to the methods of observation. The device, an [redacted] whose yield will have been determined in an earlier part of the test series, will be exploded at an altitude as near 2,000 Km as is feasible. The same launching site and observation stations will be used as for the high-altitude effects tests. It should be noted that this experiment might increase the duration of the series by a week or two, although it is believed that this can be avoided.

2. Balloon test in Nevada. At the present stage of technical development, many of the experiments included in the underground program would yield quicker and more accurate results if performed above the ground; this is of special importance in those having a bearing on the atmospheric program. Furthermore, it has been suggested that world public opinion might be more favorable should the atmospheric series be begun with a test at the Nevada Site. With both considerations in mind, we have tentatively added to the atmospheric series an as yet undetermined low yield device to be fired from a balloon. Of several candidates the final choice will depend on the schedule for beginning the atmospheric program and on the results of underground tests.

Cratering Shot. By letter of February 12 to Mr. Bundy, I have proposed that the DOD cratering shot (DANNY BOY) at the Nevada Test Site be incorporated in the underground testing program even though it will vent appreciably to the atmosphere and some fission products will be released. Should it be decided that this is not appropriate, it should be added to the atmospheric list. It is important that this test be executed on March 1 or very shortly thereafter. The personnel assigned to it form part of the test team needed in other locations for the atmospheric series and should be released as soon as possible.

Nuclear Yield: Fallout Considerations

The program has been planned with due regard to restraint on yield, particularly fission yield. The total estimated yield is slightly less than

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Practically all of the fission products from the series will be released over the Pacific in such locations that local fallout will be no problem. There will, of course, be no local fallout from the high altitude tests. A special situation does exist with respect to the hardened missile base effects test. In order to produce the desired effects, the device must be fired at such a low altitude that the fireball will touch the ground and a substantial fraction of the radioactivity will be included in the local fallout. The device is, however, of far lower yield than many previously exploded in Nevada so that with careful attention to meterological considerations, radiation hazard can be avoided. (The situation was described in my December 18, 1961 letter to Mr. Bundy, but a height of burst of 240 feet was assumed rather than the 10 feet or so that will actually be used.)

Locations of Tests

The tests will be conducted in three general locations. The missiles carrying the devices involved in the high altitude tests will all be launched from Johnston Island; observations will be made from instrument bearing rockets and from ground-based stations on various islands. The hardened missile base effects test and, if it is so decided, at least one low-yield balloon shot will be conducted at the Nevada Test Site. All the other tests will use Christmas Island as a base of operations. Most or all will be by air drop in the general vicinity of the Island, with diagnostic instruments based on ships and in many cases on the Island.

If the very high altitude experiment directed at developing a capability for testing in outer space is indeed performed, results from it, together with those from the hardened missile base test and others will so far remove the need for a surface shot at an isolated island such as Baker, that it would not be required. This has been assumed in the program outlined and the weapons test which would have provided the nuclear explosion is assumed to be an air drop.

Schedule Consideration

The series has been planned to cover a period of two and one-half to three months beginning on April 1. This would require public announcement not later than March 15. Because of the close relationship of the latter date to the beginning of the Disarmament Conference, the suggestion has been

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made that a few events be conducted earlier, beginning about March 1. It has further been suggested that the first atmospheric test be conducted in Nevada. Since the hardened missile base effects test cannot be ready before mid-May, we have made preparations to fire a balloon shot in Nevada if so desired. As explained earlier, this would be one of the events now schedule in the underground series which it would be advantageous to conduct above the ground. Firm notice at least one week before the scheduled time would be required. Should it be desired one or more follow-up Pacific air drop tests could be conducted during March provided two weeks' advance notice were given.

Summary and Recommendations

The proposed atmospheric test series described in this memorandum and its attachments would, if carried out, contribute significantly to our understanding of weapons technology and weapons effects, and would make possible the design of considerably more advanced weapons and weapons systems than now are feasible. Full realization of the potentialities would require, however, that further tests exploiting the new data be conducted at a later date, say, in 1963.

DEL The total yield of all the shots is approximately [redacted] of which about [redacted] are due to fission. This is about [redacted] of the fission yield of the 1961 Soviet tests. With the exception of one test in Nevada, local fallout problems can be avoided.

One, and possibly two or three tests will be conducted in Nevada; three high altitude tests will be launched from Johnston Island; the remainder will use Christmas Island as a base.

The series can be carried out over a two and one-half to three months' interval, beginning on April 1. The starting date could be advanced to as early as March 1 by utilizing an above-ground shot at the Nevada Test Site, assuming one week's notice. Tests in the Pacific would require at least two weeks' notice. Advancement of the schedule would extend the series length by an equivalent amount, since the more complex experiments toward the end cannot be readied earlier.

It is recommended that the proposed program be adopted now for planning purposes and that a decision to carry out the pregram be made at the earliest possible date.

/s/

Glenn T. Seaborg

Attachments:
1. Appendix "A"
2. Appendix "B"

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APPENDIX "A"

AEC-SPONSORED ATMOSPHERIC TEST PROGRAM

Experiment	Nickname	Sponsor	Yield, Megatons Fission	Yield, Megatons Total
Part I - ADVANCED CONCEPTS				
Nevada balloon shot 1/	* -	-	low	low
DELETED	MESILLA,	LASL		DELETED
	NAMBE,			
	OTOWI.			
	CHETCO,	LRL		
	YUKON,			
	TANANA,			
	MUSKEGON.			
	YESO	LASL		
	ROSEBUD	LASL		
	*SUNSET	LASL		
	*SWANEE	LRL		
	BIGHORN	LRL		
	PETIT	LRL		
	*URRACA	LASL		
Part II - DEVELOPMENTAL AND WEAPONS VERIFICATION				
DELETED	QUESTA	LASL		DELETED
	ADOBE	LASL		
	AZTEC	LASL		
	ARKANSAS	LRL		
	*ENCINA	LASL		
	TRUCKEE	LRL		
Part III - EFFECTS				
400 Km Altitude (Johnston Island)	STARFISH	DOD		DELETED
50 Km Altitude (Johnston Island)	BLUEGILL	DOD		
Base Hardening (Nevada)	SMALL BOY	DOD		
ASROC Effects (at sea)	SWORDFISH	DOD		
			Approximate Yields	
Part IV - CONTINGENCY ITEMS				
DELETED	CALVAVERAS	LRL		
	*MISSOURI	LRL		

1/ Proposed as a low-yield balloon shot to start the atmospheric test program, if desired; device not yet selected.
2/ Total of seven events may be reduced; firm statement in this regard will not be available until about March 1, 1962. DELETED
3/ Fired if there is a gross malfunction of [redacted]
4/ Fired if earlier tests of similar two-stage devices are not definitive.
* Tests added since November 29, 1961 letter to the President.

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APPENDIX "B"

Description of Events

Proposed Atmospheric Tests - By Functional Category

I. ADVANCED CONCEPTS

These tests should lead to major advances in nuclear weapon technology. The proposed experiments in the advanced concept area represent a balanced mixture of (1) the empirical approach with early availability of improved weapons in those weight classes known to be of interest, and (2) bolder experimental steps leading toward new devices of significantly higher levels of weapon effectiveness.

1. Balloon Test at Nevada Test Site (Added event)

This item has tentatively been placed on the list in order to provide an initial test above ground at the Nevada Test Site if so desired. Various low yield devices are being considered all of which could advantageously be tested above ground in order to achieve quicker and more accurate results than in underground tests. The final choice will depend upon scheduling considerations and on the results of certain underground tests.

2. DELETED (MESILLA, NAMBE, and OTOWI) (LASL), and

3. DELETED (CHETCO, YUKON, TANANA, and MUSKEGON) (LRL)

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[redacted]

III. NUCLEAR WEAPONS EFFECTS

Tests in this category are designed to provide critically needed information of the nuclear effects of nuclear explosions on missiles and related components, missile sites, radar and communications, and naval vessels and their equipment.

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UNCL. BY DOE

Memorandum of Conversation

DATE: March 1, 1962

Approved in S, 3/3/62

SUBJECT: Meeting of Committee of Principals

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PARTICIPANTS: See Attached List

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M - Mr. McGhee	IO - Mr. Cleveland	DOD-Sec. McNamara
G - Mr. Johnson	EUR - Mr. Kohler	DOD/ISA - Mr. Nitze
S/B - Mr. Bohlen	S/AE Mr. Furnas	AEC-Chairman Seaborg
S/P - Mr. Rostow	ACDA-12	CIA-Mr. Amory
	~~INR - Mr. Hilsman~~	White House-Mr. Bundy
		Dr. Wiesner
		~~USUN-Ambassador Stevenson~~

The Secretary asked Mr. Foster to outline the problem before the Committee. Mr. Foster referred to his memorandum of February 28 to members of the Committee which detailed the problems for consideration and which centered on the necessity to know where we are going as we attempt to become more precise in the forthcoming negotiations regarding the September 25 Plan, particularly the first Stage. ACDA has attempted to focus on the possibilities of reducing the power to destroy while preserving the power to deter. Mr. Foster recalled that ACDA Plan #1 emphasized the exploration of the possibilities of reduction on a parity basis of strategic delivery vehicles which were at the heart of the modern nuclear threat. The February 28th memorandum suggests five alternative bases for effecting reduction in strategic delivery vehicles and also other armaments. He noted that these alternatives had been discussed with the Defense Department. He would now like to get the views of the Committee on which alternative it might be most useful to pursue in further detail and which might serve as the basis for meaningful bilateral agreement with the Soviets which would avoid the necessity of including China at the early stage. The second major item for consideration was what particular methods of verification and control

warranted more exploration. He referred specifically to the ACDA work on zonal inspection and sampling techniques.

At Mr. Foster's request, Admiral Parker presented a series of charts illustrating in specific terms the impact on the US and USSR's strategic delivery vehicles of each of the five approaches, i.e. reduction by types, reduction by categories, reduction by total number of vehicles, reduction by total megatonage capacity within categories and reduction by total megatonage delivery capacity.

Secretary McNamara expressed the wish to go back to the more general considerations after viewing the charts presented.

The Secretary inquired whether we have at hand the practical inspection techniques to verify the kind of reductions proposed. Mr. Foster said that we have good capabilities, even unilaterally, to check on aircraft. If we had as well sampling and ground control posts, the capabilities would be excellent. We do not have the same feeling of confidence with regard to inspection of reductions in the missile areas. He noted that there was an inter-departmental committee studying this problem which is reaching the conclusion that,with specified improvements, a high degree of confidence might be achieved. Dr. Wiesner noted that in the first phase there was little need for any inspection beyond verification of destruction. As the disarmament process got deeper, verification of destruction alone would not suffice. The Secretary said the broad question is whether we move toward proposals involving proportionate reductions or toward parity in reductions. Secretary McNamara said an additional basic question was whether our initial proposals should apply to conventional and nuclear armaments across the board or should be limited to reduction of strategic nuclear delivery vehicles alone. The Department of Defense would not support either limitations related only to strategic nuclear delivery vehicles or reductions on a parity basis in the initial stages. If the parity concept is to be applied, Defense would like strategic nuclear reductions tied in with conventional reductions. Therefore, he would like serious attention to be given to proposing reductions, by categories, of all important weapons -- both conventional and strategic nuclear. However, he would be willing to consider as a substitute for the proposed reduction of all classes. reduction of certain classes of strategic

nuclear vehicles on a proportional basis. Until some of these basic considerations had been decided, he felt it would be unproductive to discuss the details of the five possible approaches outlined in the February 28th memorandum. He noted that the JCS has serious questions on a number of these points and he asked that General Lemnitzer be allowed to comment in due course.

Mr. Foster said that it was easy to speak of across the board reductions but he is much concerned by the sheer magnitude of the problem. That is why ACDA recommended the exploration of the degree of risk which might be involved, in a limited first stage, in dealing with strategic nuclear vehicles alone. Such a proposal would not only be more readily operable, it would be more negotiable. This would also allow us in the meantime to build up our conventional forces, where we are inferior. He noted that there were certain categories of strategic aircraft which would be phased out in any case in the not too distant future. Although there would inevitably be some risk in a first stage such as he was proposing, this may be worth doing because of its greater simplicity with respect to inspection. The numbers presented by Admiral Parker, in his view, indicated that there were some steps we could safely take in this direction even though they would have to be followed by conventional cuts.

The Secretary said he was interested to know whether we can begin to achieve steps in disarmament which are consistent with our security and that of our allies. From this point of view, he questioned whether the problem of administrative difficulty was really relevant. The major question was whether we impaired our security. Mr. Foster indicated his complete agreement with this observation. He was looking for the best of both worlds. In the judgment of many close students the approach that he proposed was a feasible one both from the administrative and security standpoint. This approach would not only result in saving a lot of money but have a significant effect on the possible destructiveness of war should it come.

The Secretary asked whether if we made the kind of reductions

in the nuclear field of which Mr. Foster spoke we would have to build up our conventional forces. General Lemnitzer said that it was impossible to identify a precise point at which this would be the case. We were in a bad way at present regarding our conventional strength in Europe in any case. Mr. Foster agreed it was impossible to be precise. A 50% reduction in the nuclear field might indeed force us to build up our conventional armaments.

Secretary McNamara said that a proportionate reduction of 30% would probably not require more of a build-up in conventional forces than will be required anyway. He noted that he was not certain the JCS would not take the same view.

Mr. Rostow inquired whether it would not be easier, if we opted for the sampling or zonal approach to inspection, to reduce on an across-the-board basis. It would be complicated and difficult to restrict the inspection to selected weapons. Mr. Foster said he was not sure this was the case since we intended to concentrate on the big items. Dr. Wiesner agreed that it would be much easier if everything were reduced, since there would be no basis then for excluding certain plants from inspection. He thought that in the first phase it would be possible in the case of all major armaments to rely on initial declarations and upon our own unilateral intelligence capabilities; inspection of declared levels would not be required. He was not sure that it was in our military interest to concentrate only on strategic nuclear delivery vehicles.

General Lemnitzer said that the JCS's view was that although the approach limited to strategic nuclear delivery vehicles might be simpler from the standpoint of counting, these should not be separated from other elements of disarmament. The JCS was also worried about omitting China. The JCS view was that nuclear reductions should be linked with conventional reductions. Further they feel it is important to move cautiously and slowly and to have a sure test of the inspection system at an early stage. Anything that limits the inspection process is "phony". If inspection is limited only to certain categories of weapons it is simpler to spoof.

The Secretary asked what the effect would be on total U.S. security if we were to propose a 30% reduction in all weapon categories across the board. Secretary McNamara observed that the answer to this could not be simple since disarmament cannot be viewed as only an alternative to the status quo - since that will not continue - but to what the situation would be in the future if disarmament did not take place. Without disarmament, the Soviets will continue to close the nuclear gap. This is why he would be willing to support disarmament action which in effect limits the increase in nuclear armaments on both sides. He felt that a 30% reduction would leave us in a stronger position than we would be in if the present situation continues. Mr. Nitze stated that an across-the-board cut of 30% in all armaments would freeze the inferiority of the United States in conventional armaments. He wondered how our allies would react to such a freeze in U.S. conventional inferiority vis-a-vis the Soviet Union. He noted it was highly unlikely that the allies would do what they might otherwise do to improve their conventional strength position if we adopted a program such as Mr. Foster was referring to. Mr. Foster felt that the need for improving our conventional position was another sound reason for sticking to a first stage which was limited to nuclear vehicles, although the ultimate objective is to deal with all categories of weapons. The major expected Soviet increases would be in this field; the approach he was suggesting would check this increase. Dr. Wiesner raised the question of the possibility of a stand-off with the Soviet Union; namely that the U.S. would reduce proportionately more in the strategic field than the Soviet Union, and the Soviets in turn would reduce proportionately more than the U.S. in the conventional field.

The Secretary inquired how we would establish the basis from which the reductions would begin. Mr. Foster said that we were taking a January 1, 1964 target date for a basis. We would begin on the basis of declarations of strength by either side. As the inspection capabilities increased in the early periods we would improve our possibilities of spotting any cheating in declarations. He felt that not much risk was involved in such an approach. Mr. Amory noted that the quality of our information varies drastically from one category of

weapons to another. We could catch any arrant cheating in the declarations in many of the categories right at the beginning (he cited heavy bombers and tanks as an example). Mr.Foster said that we had not viewed verification of the starting level as a requirement. He described a zonal approach to inspection, which he said would probably offer the best opportunity of gradually closing in on the problem while avoiding taking a politically untenable position. Dr. Wiesner said that our unilateral intelligence information was good enough to allow us to rely on initial declarations, particularly in view of the relatively modest size of the first cuts. The Secretary observed that it might be well to have some sort of challenge procedure in the event we suspected that the declarations were substantially incorrect.

With respect to the basic question, the Secretary stated that his view was that we should adopt the proportional rather than the parity concept. He felt also that any significant nuclear cuts should be linked with cuts in the conventional area. Dr. Wiesner raised the problem of production cut-off, noting that the attractive feature of such a cut-off would be the degree it would ease the inspection problem. Secretary McNamara stated that any continuation of production would be within some formula related to the reduction. The Secretary asked for views on the five alternative approaches presented in the paper. Mr. Amory noted that the fifth alternative presented most incredible difficulties from the standpoint of inspection. He favored very much the use of categories. Secretary McNamara noted that Defense would object to approach #3, although it might be the easiest to carry out. Dr. Wiesner felt that approach #1 might be preferable. Secretary McNamara suggested that a combination of #1 and #5 might be examined. Either one could be modified in the direction of the other. He did feel, however, it was unproductive to discuss these details in this meeting and proposed that a sub-committee be established.

Mr. Bundy asked what the basis was of the 30% figure. He did not feel that this was an impressive figure over a three-year period, if the basis for reductions was total megatonage

capacity. Why not, for example, a 20% cut each year? The Secretary preferred the smaller number in view of our special geographic disadvantage vis-a-vis the USSR. Mr. Rostow said that he was not worried about the propaganda drawbacks in the 10% a year proposal. It had a serious ring to it and would meet the world's appetite for some kind of a down-turn in the present situation. Mr. Foster said that 30% was quite substantial enough and would meet the pressures we were under for early specifics from our allies. Mr. Fisher noted that this general percentage fitted in with the 2.1 million force level in the first stage of the September 25th Plan.

Mr. Foster inquired whether it was the sense of the meeting that it would be best to work for an across-the-board cut of about 30% over a three year stage. If this was the case, we could work out more of the specifics for presentation to the President on Tuesday.

Secretary McNamara said that he could accept this expression of consensus. While he preferred a reduction of all weapons he believed that it would be well to study as an alternative, the plan for proportionate reduction limited to strategic nuclear delivery vehicles. He proposed the establishment of a technical sub-committee to consider the five approaches and possible modifications thereof. Mr. Kaysen said that we could substantially improve our position by talking in a more forthcoming way about the follow-on second stage and making clear that we were thinking of a similar or even larger cut in this subsequent stage, assuming the first stage went well. Dr. Wiesner agreed.

Mr. Rostow asked how specific we could be with regard to inspection. Mr. Foster said that we would be in a position to discuss the zonal approach on an informal basis with the Soviets but that we would not be ready with all of the details required for a formal proposal. We could indicate our willingness to explore ways of ensuring that the "intrusion" was proportionate to the disarmament involved.

Secretary McNamara proposed that we agree to pursue three areas of study: (1) the specifics relating to a 30% proportionate reduction in all major weapons categories, conventional

and nuclear; (2) a similar reduction limited to specified categories of strategic nuclear delivery vehicles; and (3) a sub-committee to study the five approaches and to develop any necessary modifications in them. He said that he considered that such reductions could be accomplished as between the U.S. and USSR, without involving China, although an escape clause of some kind would be necessary and we could not go beyond 30% without China. He said that the sub-committees studying the first and second problems should consider also the kind of formula which might govern cut-off of production in both cases. In answer to a question by Mr. McGhee, Secretary McNamara said that he would not propose exceptions be made in "defensive" weapons. If we were to reduce our ICBM's he would want to insist that Russian SAM's be reduced.

Mr. Kaysen said that we need specifics on the inspection problem as well, in view of the central place inspection has had in our disarmament position. He felt we should organize ourselves to present a decision-issue to the President on Tuesday on the zonal inspection approach. We should decide whether this approach is good enough to warrant discussion with the Soviets. Mr. Foster noted that ACDA recommended the zonal approach as a basis for further exploration, informally, in the negotiations, and for further study within the United States Government. Mr. Marengo reported on the work of the inter-agency inspection group which would meet again next Monday. Secretary McNamara said that he was not yet in a position to decide on the specific acceptability of the zonal approach although he could accept, in principle, the concept of inspection being proportionate to the disarmament accomplished. Mr. Kaysen said he had not wanted to imply that we should be pressed to decide on details such as the number of zones, etc.

With respect to transfer of fissionable material from past production, Mr. Amory said that since US-USSR stockpile ratios were on the order of five-to-one, we should be willing to offer to transfer material on at least a two-to-one basis with the Soviets. He suggested we offer to make an initial transfer of 100,000 kilograms to 50,000 from the Soviets. Secretary McNamara noted that the JCS has not yet accepted the idea of a transfer on a one-for-one basis, although he, himself, was

quite prepared to accept this. General Lemnitzer said that all of the Chiefs were not yet ready to go along with a one-for-one transfer until they had seen the results of our next series of tests.

Dr. Wiesner said that he thought it was better to make no proposal than a one-for-one proposal since this would be so clearly non-negotiable and would not be taken seriously by the Soviets.

LIST OF PARTICIPANTS

Department of State
- Secretary Rusk, Chairman
- Mr. McGhee
- Mr. Bohlen
- Mr. Davis
- Mr. Rostow
- Mr. Hughes
- Mr. Gardner
- Mr. Furnas
- Mr. Manning
- Mr. Garthoff
- Mr. Manfull, S/S

Arms Control and Disarmament Agency
- Mr. Foster
- Mr. Fisher
- Mr. Beam
- Ambassador Dean
- Mr. Stelle
- Mr. Byroade
- V/Adm. Parker
- Dr. Long
- Mr. Spiers
- Miss Goetz

White House
- Mr. McGeorge Bundy
- Dr. Jerome Wiesner
- Col. J.J. Ewell (representing General Maxwell Taylor)
- Mr. Keeney
- Mr. Kaysen

Atomic Energy Commission
- Dr. Glenn T. Seaborg (first part of meeting)
- Dr. Leland J. Hayworth
- Dr. Paul Ager
- Dr. George Kavanagh

Department of Defense
- Secretary of Defense McNamara
- Mr. Paul Nitze
- Mr. John McNaughton
- Col. Stanton

Central Intelligence Agency
Robert Amory, Jr.
Mr. Louis Marengo

USIA
Mr. Edward R. Murrow

See 3, 304

UNITED STATES
MIC ENERGY COMMISSION
WASHINGTON 25, D.C.

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
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Dear Manson:

The Commission has carefully reviewed the recommendations and actions of the General Advisory Committee at its 70th Meeting which were transmitted by Dr. Pitzer's letter of February 16, 1962. The Commission notes with pleasure that you have been elected Chairman of the GAC for 1962.

The Commission's comments on the Committee's recommendations are as follows:

(1) Weapons Matters

The concern expressed by the GAC over the results of the recent Russian nuclear weapons test series, as indicated in the Bethe report, is shared by the AEC. Those apparent technical advances are not only significant in themselves but they are also indicative of the competence of USSR scientists as well as the momentum which presently prevails in the Russian weapons development program. A new Russian series, greatly improved as a result of information gained from the 1961 series, could well be initiated later this year. Although we do not have supporting evidence for such a prediction, neither is there any evidence to the contrary so it is probably prudent to anticipate such action.

The matters of expression of distress that more genuinely new devices are not scheduled for test and inference that weapons development was allowed to lag seriously during the three-year test moratorium have been encountered in various places as the testing series has developed. Numbers-wise, or proportionately, it is true that there are more tests of better known or less venturesome designs than there are of the more advanced ones. This, in itself, is not abnormal in any series. Additionally, for this series, the very short preparation time and the uncertainty of test area location and thus the instrumentation and diagnostics available led to a more conservative test list than we would have normally done. As for the inference of lagging in development, from the onset of the moratorium in 1958 until

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very recently, the AEC and the weapons laboratories were operating on the assumption that if testing were ever resumed, it would only be permitted underground. Such a course of action leads to emphasis on the lower yield designs. Thus, studies in the higher yield ranges were largely limited to conceptual studies and these could not be finalized, produced, and made ready for testing in the limited preparation time available. We have, however, managed to include some of the advanced, high yield designs. The [redacted] devices are examples. Although the present proposed atmospheric series involves less than a third of its activity in the verification of existing weapons, it should be noted that these weapons were largely developed during the test moratorium. They represent the most advanced weapons that this country can presently produce and the checking of their proper performance is considered of paramount importance.

The presently planned high altitude shots include the 50 kilometer effects shot of which the GAC again expressed their concern over possible exclusion. Preparations are firm for this event and this shot is planned with suitable logistic and technical backup. In addition, there is included a 400 kilometer effects test. These two tests are to a certain extent complementary, with additional high altitude tests desired in future series to obtain corresponding information through a range of altitudes. Provisions have also been made to include a 1,000-2,000 kilometer shot, the primary purpose of which is to develop a capability for nuclear weapons testing above the sensible atmosphere, and, in addition, to gain effects information.

With regard to the belief expressed by the GAC that the weapons laboratories should begin work immediately on a design of a clean 100 megaton bomb or warhead, the DoD has been asked again if they have any interest in such a development. It has been the view of the DoD that a weapon of this yield offers little strategic advantage over weapons of a lesser yield. Nevertheless, the laboratories have continued work. This work involves extrapolating existing designs to larger and larger yields. This process has led to our belief that we could produce a 100 megaton bomb in approximately a 50,000 lb. package which could be carried

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in the B-52. This is presently the estimated capability of the USSR after the 1961 series. Although the 100 MT bomb (or the Russian version of it) is not a clean bomb, it is estimated that for the same weight, a clean yield of [redacted] can be achieved, of which only [redacted] would be fission. Results of the proposed atmospheric series hopefully will improve the design of a weapon of this size.

(2) U. S. Weapons in Foreign Countries

With regard to U. S. weapons in foreign countries, the Commission considers each request for transmission of restricted data very carefully, taking the latest security inspections and intelligence reports into account. Attention is devoted to minimizing both the amount and type of information which is approved for transmission. Favorable determinations are made where it is considered that the communication to the foreign country of certain restricted data would promote and would not constitute an unreasonable risk to the common defense and security. It is consistent with the legislative history to determine that an appreciable hazard of contributing significantly to the nuclear weapon design, development, or fabrication capabilities of even a friendly power would constitute an unreasonable risk.

The Commission has worked closely with the Defense Department in identifying possible methods of covertly obtaining weapon information such as by radiography. The development of more adequate security criteria has also been a joint AEC-DoD effort. The effort is designed to improve the overall security of weapons and weapons information in foreign countries.

The laboratories have done extensive research on the general problem of weapon design in an attempt to thwart unauthorized use of nuclear weapons. Considerable research and development effort is being expended by the laboratories on devices which make the weapon inoperable unless certain codes or combinations are actuated properly. These are known as command and control devices. We are currently working with the DoD in a study to determine which devices can be placed in various weapons systems. We have been requested by the DoD to place a command and control device in the Jupiter system in [redacted] as soon as possible.

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As a further effort, the Commission will join the DoD in sending a joint team to Europe in the near future to review the progress made in strengthening procedures for protecting Restricted Data and preventing unauthorized use of weapons. Through this means the Commission will be informed of the exact situation surrounding weapons in foreign countries and be in a better position to assist the DoD as appropriate. The Commission has at various times the opportunity to visit weapon locations overseas for other purposes. Such visits appear adequate to keep the Commission generally informed of the weapons situation in foreign countries. By Presidential directive, the DoD is responsible for the physical security of weapons in its custody.

(3) Underground Explosions

We concur in your view that much remains to be learned about the phenomena associated with underground detonations. As indicated in your recommendation, these phenomena might be applicable to several programs. Specifically, they might apply to the Atomic Energy Commission's Weapons Test and Plowshare programs and to the Seismic Improvement Program of the Department of Defense.

General investigations in the area of decoupling have been under way for an extended period of time; since last September this effort has been intensified - primarily by the Livermore Laboratory and the Nevada Operations Office. At this time it appears that costs and other problems inherent in decoupled shots (when compared with other avenues of testing, such as in the atmosphere, in outer space, or underground with controlled venting) do not yet warrant a specific program aimed at decoupling testing, per se. Notwithstanding, the area of decoupling will continue to be investigated, particularly in light of the results being obtained from the underground test program.

In the Plowshare Program there is a need for data on the phenomena associated with detonations in a cavity. However, the program funding limitations and more urgent requirements for other types of experiments do not permit us to undertake this experiment at this time. We hope to be able to do so in the future. In the interim, we have asked the Livermore Laboratory to look into the feasibility of conducting an experiment (Project Coach, which is already in the Plowshare Program) in a cavity.

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As a part of the Vela Uniform program, certain studies have been performed or are under way at two salt domes in Mississippi. The size and shapes of the domes have been defined by drilling. A contract for $225,000 has been awarded to study cavity washing techniques. A contract for $150,000 to study the feasibility of installing instrumentation in the "in situ" medium to study behavior during construction has been awarded. The Bureau of Mines is continuing to study means of disposal of the large quantities of salt generated by the cavity construction. These studies should produce the necessary information on which a decision regarding the feasibility of large cavity construction in salt can be based. However, at this time there are no funds available in FY 1962 and 1963 to proceed with large cavity construction.

Both the Tatum and Bruinsburg Domes in Mississippi have been considered for weapons test sites. Because of the small lateral size of these domes they cannot be used for large yield tests and they appear suitable for only a limited number of small yield tests. Also, because of the great depth of the domes beneath the surface, their use for routine small yield tests is not considered practicable. For these reasons, neither of the domes is considered adequate for development as a test site.

(4) Controlled Thermonuclear Reactions

Arrangements have been made for Drs. Van Atta and Post of the Lawrence Radiation Laboratory and Drs. Snell and Macklin of the Oak Ridge National Laboratory to present briefings at your March meeting similar to the Los Alamos and Princeton presentations made at the January meeting.

Activation of the Ad Hoc Sherwood Subcommittee and the subsequent recommendations of the Committee will prove useful to the Commission.

(5) AEC Reports to the GAC

With reference to the need of the Committee for more detailed classified information than is provided in the Monthly Report

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to the General Advisory Committee, the Commission suggests that the Chairman of the GAC meet with General Betts, Director of Military Application, Mr. Quinn, Assistant General Manager for Plans and Production, and Mr. Burchard, who is responsible for the present report, for the purpose of identifying the types of detailed coverage desired.

Sincerely yours,

Chairman

Dr. Manson Benedict
Chairman, General Advisory Committee to the
U. S. Atomic Energy Commission
Washington, D. C.

1A&2A: Addressee
3A&4AP Chairman
5A: Commissioner Haworth
6A: General Manager
7A: REH - Chron

(See drafts of comments from PNE, DMA, Controller, and Research)

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Com. Haworth

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March 22, 1962

Dear Mr. Secretary:

As you know, a series of meetings during the week preceding the departure of the U.S. Delegation to the 18-Nation Disarmament Conference resolved a number of questions related to the initial U.S. proposals to be presented to the Conference, but left other questions undecided. The U.S. Arms Control and Disarmament Agency has been reviewing those issues not fully resolved within the U.S. Government in order to arrive at recommendations which could form the basis of a U.S. position.

The purpose of this letter is to transmit to you for your comments the tentative views and recommendations of ACDA on several of the unresolved issues. As ACDA prepares its views on other issues these will also be submitted to you for comment and clearance.

Categorization of Strategic Nuclear Delivery Vehicles. It has been tentatively agreed that we should divide strategic nuclear delivery vehicles into two categories. We believe these two categories should be termed long-range and medium-range. In considering the criteria to be used to distinguish between these two categories, it is recognized that it is possible to arrange the limiting criteria in

The Honorable
Robert S. McNamara,
Secretary of Defense.

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REVIEWED BY J. Diaz 8/13/90 DATE
*Letter ACDA, SMITH, To DOE, GILBERT, OC 5/2/88
8/13/90

a U.S. proposal so as to provide us certain advantages by virtue of the characteristics of weapons peculiar to our current inventory and theoretically to prevent the Soviets from having the same advantage. However, as a practical matter, we cannot expect that the Russians will be taken in by such tactics. Therefore we should decide whether it is more advantageous to us to have a plan which permits a conversion between medium weight bombers and long-range systems within the framework of a total reduction, the Russians having the same option, or whether it will be better to preclude such a conversion on both sides. In view of the decision to continue some modernization of our forces, we believe it would be best to distinguish between the two categories of strategic missiles on a basis that would permit conversion between medium weight bombers and long-range systems.

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All missiles between 300 km and 5,000 km maximum range and all armed aircraft between 15,000 kg and 30,000 kg empty weight would fall in the medium range strategic delivery vehicle category except as noted above.

Criteria for Determining Destructive Capability. It has been agreed that in reducing strategic nuclear delivery vehicles, a dual criteria will be used: numbers plus some measurement related to destructive capability. We believe that total gross loaded weight (maximum designed take-off weight for aircraft) is probably the most reasonable measurement to use for total destructive capability. Such a limitation would, we believe, inhibit the Soviets from trading smaller delivery vehicles for larger delivery vehicles or from building considerable numbers of larger missiles to carry 100 megaton warheads. Such an additional limitation is obviously advantageous for the long-range category of missiles since otherwise there would be no limit on the size of vehicles that the Soviets might build. Although in the medium-range category there will be weight and range limits on individual aircraft and even probably on individual missiles as a result of engineering criteria, the medium-range category still confronts Western Europe with a potential threat of vast destructive capability. While the requirement for a dual criteria may be considered less necessary in the medium-range category, we believe it is still desirable for political as well as technical reasons to limit this category by total gross loaded weight as well as numbers.

Reduction Criteria for Armaments Other Than Strategic. The question remains open whether a criterion in addition to numbers should be applied in determining reductions of tactical nuclear and conventional armaments. We are inclined to believe that, with the possible exception of the 5 - 300 km missile category, an additional criterion such as total weight would simply complicate the verification process without achieving any additional meaningful

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limitation. There may be some advantage in placing an additional weight limitation on the 5 - 300 km missile category. However, the range limitation of 300 kilometers itself may provide all the limits we would need. To summarize, we believe it advisable to reduce the above categories solely on the basis of numbers.

Categories of Non-Strategic Weapons. We believe the categories of non-strategic armaments which were listed on page 13 of the March 3 memorandum for the President are appropriate with two exceptions:

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b. We suggest that a new category encompassing surface-to-air missiles, but excluding AICBM's be added as Category (7). The inherent short-range characteristics of this category distinguishes it from the anti-missile missile category. Reductions in armaments in this category, and limitations on production and testing, should be treated in a similar manner to that adopted for other non-strategic weapons.

Production Limitations. It has been previously agreed that production of strategic delivery vehicles and other armaments would be limited in Stage I to some percentage of the numbers of vehicles and

armaments in the inventories of the U.S. and U.S.S.R. at the beginning date of Stage I. However, upon re-examination, we believe there are some serious difficulties which would result from applying limits on production based upon an agreed percentage of existing inventories of each category of weapons. As far as strategic nuclear delivery vehicles are concerned, this method would affect the U.S. and U.S.S.R. about the same since inventories on both sides will be roughly equal. The problem of basing production quotas on inventory of agreed categories becomes more serious in the non-strategic category. In some of the non-strategic categories of armaments, particularly land weapons, the vastly superior Soviet inventories would permit them to produce at far greater rates than the United States.

In each category, this apparent asymmetry can be adjusted by basing the annual production limitation for both sides on a percentage of that national inventory which is the smaller. Thus, in those categories where the USSR is numerically superior, e.g., tanks, the U.S. inventory would be the basis for limiting production for both sides, and vice-versa. For the strategic categories, inventory would be determined by the product of the numbers of units and their respective gross load weight. For armaments other than strategic, numbers of units in each category would constitute the inventory. Further, we believe that consistency with an over-all disarmament program indicates the desirability of establishing permitted production rates for Stage I below past production rates in those cases in which there has been substantial production (e.g., strategic delivery vehicles). However, we recognize that in certain categories, such as armaments for ground forces, past production in the U.S. has been so low, as compared to that in the U.S.S.R., that, in these cases, establishment of production limitations on the basis of past production may present serious problems. These are the bases of ACDA's recommendations

on the question of production. ACDA is not at this time recommending the specific percentages that should be proposed.

It is our present thinking that permitted production rates should be required to absorb any replacements required as a result of accidental loss of any type of armament as well as production for testing and training. However, production for peaceful purposes, e.g., space vehicle boosters, would have to be declared and verified but would be permitted within specified limits and safeguards. ACDA is also studying the problem of how production limitations would affect sales or grants of armaments from the major powers to smaller powers.

Testing of Weapons Systems in Categories Proposed for Reduction or Control. The U. S. is committed by the September 25 Plan to proposing that testing of agreed categories of strategic nuclear delivery vehicles and agreed types of weapons designed to counter such vehicles should be limited or halted in Stage I. The U.S. is not committed to halting or limiting the testing of other armaments.

We believe the U.S. should take the following position in elaboration of the September 25 proposals or testing in Stage I:

a. As general principles:

(1) As long as some production is permitted some testing should be permitted.

(2) In Stage I, testing would be allowed only for those armaments for which production of operational units was planned prior to the end of Stage I. However, this restriction should be subject to abrogation if the period of transition from Stage I to Stage II is delayed excessively.

b. Limitations on testing should apply to strategic missiles, but not to other strategic nuclear delivery vehicles. Strategic missiles, defined as those having a maximum range of 300 kilometers or more, would thus be the agreed category referred to in the September 25 Plan. For each state concerned, an annual quota of strategic missile tests should be established. For the U.S. and the U.S.S.R. the quota should be fixed at a figure which bears the same proportion to the permitted annual production of strategic missiles that the number of tests of such missiles now considered necessary bears to current production of such missiles.

c. Within the quota, either new types of vehicles or newly-produced units of older types could be tested.

d. Delivery vehicles produced for peaceful purposes could be tested outside the quota figure, but within specified limits and safeguards and subject to inspection to insure that the vehicles were in fact being utilized for peaceful space exploration purposes rather than for military tests.

e. The testing of anti-missile missile systems is covered in the succeeding paragraph.

AICBM. Concerning AICBM's, the memorandum to the President stated that "restrictions be placed in Stage I on production, deployment and testing of anti-missile missiles by the U.S. and U.S.S.R." ACDA believes that these restrictions should be such as to reduce to zero any existing AICBM's and to prohibit any production or testing of such weapons. This recommendation is premised on the assumption that agreement would be reached prior to any Nike-Zeus systems becoming operational in the U.S. Once these systems become operational in the U.S., we, of course, would have to re-examine our position.

Our recommendation is based on our strong belief that the destabilizing effects of technological breakthroughs in this area pose such a potential threat that we should prohibit these weapons as far as practical, i.e., destruction of existing weapons and prohibition on all production and testing.

We will make available draft staff studies which were taken into account in formulating this letter.

I believe that after you have had an opportunity to review these subjects it would be appropriate to form a joint task force of DOD and ACDA representatives to discuss and consider the above views and recommendations, and any others which the Department of Defense may wish to advance. If this idea meets with your approval, I would appreciate your designating Defense representatives to meet with me with a view to early establishment of an agreed U.S. position on these matters for use of the U.S. Delegation in Geneva.

Sincerely yours,

/s/

Adrian S. Fisher
Acting Director

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC 1961-72
FOLDER-PAGE 16045

Friday, April 6, 1962 - D. C. Office - Wilmington, Del.

The Commission decided to negotiate with General Motors - NDA, perhaps with General Motors as the prime contractor for the MCR.

From 11:10 to 11:50 a.m. I attended a meeting on dispersal in the Cabinet Room of the White House. Present were: The President, Messrs. Gilpatric, Gerald Johnson, Taylor, Graham, Alexis Johnson, Henry Owen (State), Farley, Bundy and myself. The President started by asking Gilpatric to summarize the problem. Gilpatric said that authorization has been given for the deployment of DELETED

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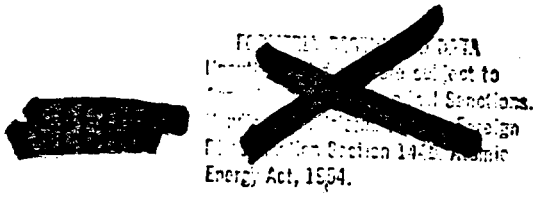
The President inquired with respect to such items as DELETED still in con Wel

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DELETED I explained the matter of the transfer of information

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CLASSIFICATION CANCELLED
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BY AUTHORITY OF DOE/OC
REVIEWED BY [illegible] DATE 11/22/89
* NSC Memo, Grabeske to DOE, OCTP, dtd. 9/18/89



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Bundy emphasized that one of the difficulties facing the U. S. is that, in view of our statements regarding the build-up of conventional forces, our willingness with respect to nuclear forces is suspect. The President inquired whether we run frequent inspections, and whether by this means we couldn't prevent the information being lost. The President again said [redacted]

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Owen suggested that perhaps the solution was [redacted] Bundy added, in agreement, that perhaps they should stay in the custody of the igloo. [redacted]

The President agreed that we should go ahead, in principle, with the dispersal plan, due to the commitments that have been made, but acquaint Norstad with the conditions under which we would proceed. Bundy said that it would probably be necessary to do the same for the U.S. forces as we do for the non-U.S.

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NATO forces. The President said again, and Gilpatric agreed, that we should [redacted]

Taylor said that we had better check with our NATO leadership before making a final decision.

The President asked whether there was anything that should be done so far as the JCAE was concerned. Graham replied that the present climate in the JCAE is very good. He suggested that it might be well if the President asked Holifield to come to the White House for a talk in the Rose Garden. The President replied that it was for reasons like this that the Rose Garden was being replanted.

Bundy summarized by saying that the Gilpatric memorandum, then, is approved, with the proviso that [redacted] and this includes U.S. and non-U.S. forces, subject to reconsideration after hearing from Norstad. There will also be a delay on [redacted] subject to State Department and DOD agreement on this matter.

The President also stated that he would like a report on the present status of command and control research and implementation into weapons, and how the rate of progress could be increased by giving this higher priority, which he directed that it should have.

From 12:00 to 12:40 p.m. I attended a meeting on disarmament in the Cabinet Room of the White House. Present were: The President, Messrs. Gilpatric, Rusk, Foster, Fisher, McCone,

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Wiesner, Keeny, Haworth, myself, Kaysen, Bundy, Wilson, LeMay, McNaughton, and one other military.

Rusk opened the meeting by saying we need a draft disarmament working paper by the end of next week, and that we will probably all meet again with the President next Friday. The President asked who had been working on this, and learned that McNaughton in Defense and the Disarmament Agency people were the main contributors.

The President said he hoped that we could have a document for use in Geneva by the end of next week, if possible. Foster said he didn't think it would be possible to have a complete document, but before we could have a preliminary document, the answers to the four questions raised in today's memorandum (i.e., the memorandum of April 6, (see 4/5) to the President, from Foster) would be needed. The President wanted to know what was the minimum information needed for next week's deadline, and then went on to inquire why we weren't further along on this. Gilpatric said that the DOD could take part of the blame for this because they hadn't come to firm conclusions on a number of matters. Rusk added that the Principals will meet again next Wednesday. The President then asked that we go ahead and consider the four points.

Foster began by speaking to point one, which is based on the President's decision at our March 9 meeting to reduce armaments. He explained that this can be done by categories or by types. Gilpatric said that DOD favors reducing by types,

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rather than by categories. LeMay said that the JCS are skeptical of either method and would want the treaty to stick to broad language. Wiesner said he favored reduction by types. Among other things, this would avoid wrangles over definitions of the categories. Rusk said that we needed examples, using actual numbers in order to make our points. Fisher defended the concept favored by ACDA that reduction should be by categories.

Wiesner reiterated his feeling that | DELETED

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LeMay reiterated that he wanted the treaty to be stated only in general terms.

At this point the President said he thought he saw why the treaty had taken so long, because of the complexity of this question. He asked the DOD view on this first question, and Gilpatric said they agree with Wiesner.

The President asked Foster whether he felt strongly about this, and Foster indicated that he thought reduction by types was the more dangerous course.

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Rusk indicated that DOD and State should get together to find a solution so as to diminish the negotiating difficulty at Geneva. He suggested that the President not decide this matter today, but wait until DOD and State had each prepared a suggested draft.

Since point two had been more or less covered by the discussion of point one, the discussion went on to point 3 -

[redacted]

The President asked whether there was general agreement on the memorandum's position on this, and Gilpatric said that DOD agrees in general terms.

With respect to point 4 - DELETED

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The President suggested leaving this matter to the discretion of the people working on the draft of the treaty.

The President asked that a drafting group be gotten together, consisting of ACDA people, DOD people (apparently Smith and McNaughton), Wiesner and Kaysen. (After the meeting

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it was determined that Haworth also would participate.)

The President then noted again that the Principals will meet on Wednesday, and that this group will meet to consider the revised draft on Friday.

The President asked when such a draft was absolutely needed, and Rusk replied that it was now two weeks overdue and that he simply must have it in a week to ten days.

Wiesner also pointed out the need to decide who the parties to the treaty would be. There are such questions as to the role of the Chinese, etc.

The President asked what our position on the Chinese is at Geneva, and Foster said that it was that they should be in by the time of the second stage of the treaty.

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Wednesday, April 11, 1962 - D. C. Office

At 9:30 a.m. I presided at Information Meeting 140 (notes attached). We discussed the Rickover seed and blanket follow-on. Wilson and Haworth, especially, oppose it or question it.

From 10:00 to 10:50 a.m. I attended a Meeting of the Principals in the Secretary of State's Conference Room. Present were: Messrs. Rusk, Foster, Fisher, Keeny, Wiesner, McNaughton, Gilpatric, General Lemnitzer, General Smith, Kaysen, Wilson, Webb, Haworth, ~~myself,~~ Kavanagh, ~~and a representative of CIA.~~ DELETED encl 9

Rusk asked Gilpatric whether he ~~was~~ is satisfied with the present U.S. mix of weapons, and Gilpatric said that, in general, he ~~was~~ is. Gilpatric said that we ~~might~~ may not need ~~as~~ such large production allowances as ~~had~~ has been suggested. Foster said he thinks the security of the U. S. is better served by changing the present mix, as would be the case if the reduction of armaments would be by categories, as he favors.

Wiesner, sensing that most of the Principals favored reduction by type, rather than categories, asked whether it would~~n't~~ be possible to make a decision now. However, Foster said that he wants the opportunity for the President to hear a discussion of both alternatives. Kaysen made the point that the difference between the two alternatives may not be great if the difference between the two alternatives may not be great if the production allowance is smaller than the 10% yearly reduction.

The discussion then went on to a second item, having to do with the matter of whether the reduction of armaments should

WITH DELETIONS BY AUTHORITY OF DOE/OC REVIEWED BY Ted Yager DATE 1/9/90
+ DOE, OCTP 9/18/87 + DOE, Brubaker, 1/10/90

[redacted] Foster didn't favor this. He pointed to the complication of including [redacted] in this concept. Wiesner said that [redacted] would not be included; only [redacted] would be included. Foster thought it was late to raise this issue now. Gilpatric said that the Joint Chiefs of Staff agree with Foster's viewpoint but that he, McNamara and McNaughton favor the inclusion of the [redacted] in the reduction because they think this would be helpful. Rusk said he ~~thought~~ thinks he ~~saw~~ sees some advantages to this. He pointed out, for example, that this ~~might~~ may be helpful in the event that we ~~might~~ may some day get into a negotiated settlement on open cities. ~~The CIA representative~~ DELETED pointed out that it ~~was~~ is easy to inspect for fixed missile sites. Rusk then suggested that this reduction be left in if the DOD recommends it to the President, and Gilpatric said that DOD does so recommend.

The third point discussed was the matter of [redacted] Foster favors inclusion of this, but, since Gilpatric recommended that it should not be included in the treaty, Foster agreed with him. Haworth pointed out that the listing of the signatory countries, as is done on page 66 of the draft of April 11th, might allow a single small country to block the treaty, and it was agreed that this could easily be changed to meet this objection.

In summary, Kaysen said that the following ~~had~~ has been agreed to: (1) We would present to the President the two alternatives

concerning reduction by categories or type. In this connection, there is the question of where the [redacted] fits in, and there is recognition that the size of the production allowance plays a vital role in the decision between these two alternatives; (2) Reduction of [redacted] will be part of the treaty; (3) The reduction of [redacted] will not be part of the treaty; (4) The alternate language on page 43 of the April 11th draft will be used; and (5) the spare parts language stays in the treaty.

[redacted]

From 5:00 to 6:00 p.m. I attended a disarmament meeting in the Cabinet Room of the White House. Present were: The President, Rusk, Foster, Fisher, McCone, Wiesner, Keeny, Dryden, ~~myself,~~ Haworth, Bundy, Murrow, Kaysen, McNaughton, ~~and~~ a representative of the Chiefs of Staff, and McNamara and Lemnitzer joined the meeting at 5:30 p.m.

Rusk explained the reduction by category in comparison ~~to~~ with reduction by type. He emphasized the key role of production in the decision between the two. He says that, if production is not small, we would have a modernization program rather than a disarmament program. Foster said he thought there ~~was~~ is more flexibility in reduction by category, and said he wanted the DOD to be sure that they ~~saw~~ see the implications of reduction by type with small replacements. Rusk said he ~~thought~~ thinks about 5% per year of production might be negotiable while Foster said it might be only 3%. The President decided to go ahead with reduction by types.

Rusk again asked whether DOD understood the figures, and McNaughton answered in the affirmative. McNaughton said they want production by type ~~so as~~ in order to keep the plants warm, that is, keep them in good condition. The President pointed out that this presents a real problem from the standpoint of public relations in the disarmament negotiations. He wanted to know how we could explain the reason for keeping our plants warm. Wiesner said we needed to protect ourselves until we are sure of disarmament.

[redacted]

the Soviets

The President asked if ~~they~~ agreed to inspection from the beginning, could we forego this. Kaysen said the explanation should be along the lines of saying that it is an honest plan and that the Soviet plan is not honest; ~~that~~ it is a complicated problem not to be solved by a radical change, and ~~that~~ serious people should think about starting cautiously. Wiesner also mentioned the need for economic turn-around time.

The President then said OK, but we can back off from this insistence on production if we can get inspection from the very beginning, and, of course, the success of our negotiating such a position depends on our skill in handling it. Rusk said the DOD must agree that the production should be low, and McNaughton said they do so agree, and they can work out suitable language.

Next, the question of the reduction of launch pads was considered. The representatives of the Chiefs of Staff said that the Chiefs can't agree to this because they haven't had enough time to study it. McNaughton said that he and McNamara and Gilpatric feel this should be included and that they see no defect in the argument for putting it into effect from the beginning. The representative of the Chiefs said it could be put in later, and Rusk pointed out ~~it~~ it could also be put in at the beginning and dropped later.

McNamara and Lemnitzer, who entered the meeting at this stage, both agreed that the reduction in launch pads should be put in the treaty from the beginning.

The next question involved the reduction in reserve

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armament and Rusk suggested that it should not be in the treaty.

The President asked who ~~was~~ are going over to Geneva and was told that Foster and McNaughton ~~were~~ are.

Kaysen pointed out the problem of accepting jurisdiction of the international court under the treaty. Lemnitzer objected to the inclusion of the principle of zonal inspection in such definite language, and McNamara suggested that the language in the last sentence of page 27 of the April 12th draft could be made more conditional by including the phrase, "for example." The President said that the more he looks at this problem, the more complicated it seems to be, and, therefore, he appreciates the efforts of Foster, Fisher, McNaughton and the others who have worked on it.

The President then turned to the matter of testing, and suggested that we need letters to the Canadians and Mexicans in connection with the test treaty situation. The discussion then revolved around the draft of a letter which is to go to the Canadians requesting their cooperation in discussions on the treaty, and pointing out the advantages to them in so doing. A similar message will also be drafted to go to Mexico.

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The President asked why it ~~was~~ is necessary to test the Atlas and Polaris warhead and missile together. Lemnitzer said that, even in the most primitive weapons, trouble has been found, and he

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(Gen. Eisenhower)

cited as an example the trouble with torpedoes in World War II. Bundy pointed out that the Polaris test was scheduled to come ahead of the Atlas test, and the President suggested that we should definitely go ahead with the Polaris test. There was further discussion with respect to the Atlas test with Wiesner questioning the need to have a nuclear warhead present in such a test.

I said I tended to agree with Wiesner and explained that, although such a test might in itself be desirable, it is questionable whether it is worth the political price that would have to be paid.

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Although McNamara first spoke in favor of the Atlas test, he indicated that he understood the problems and agreed to re-examine the possibility of substituting something else for the Atlas test that might accomplish some of the same objectives.

The President admonished that maximum security should be placed on the Polaris test.

[redacted]

901042

THE SECRETARY OF DEFENSE
WASHINGTON

APR 27 1962

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC. 1961-72
FOLDER-PAGE 16210

Dear Glenn:

In implementation of national policy as exemplified by National Security Action Memorandum No. 147, dated April 18, 1962, I am planning to give a presentation at the NATO Ministerial Meeting at Athens beginning on May 4, 1962, which will include information on our atomic delivery capabilities.

The information listed in the inclosure which is included in my presentation has been reviewed within the Department, and by the Joint Atomic Information Exchange Group and is considered within the scope of the NATO Agreement.

I am convinced that transmission of this information is not only essential to intelligent NATO planning, but of definite value to our mutual defense.

Therefore, pursuant to Executive Order 10841, and Section 144b of the Atomic Energy Act, I have determined that this proposed cooperation will promote and will not constitute an unreasonable risk to the common defense and security. Furthermore, I have determined that the proposed cooperation will not reveal important information concerning the design or fabrication of the nuclear components of atomic weapons.

If you join in this determination I shall advise the President, and ascertain that there is no objection and then notify the Joint Atomic Information Exchange Group that transmission has been authorized.

In addition, the Joint Committee on Atomic Energy will be notified of this determination prior to the presentation of the specified information to NATO.

16210

CLASSIFICATION CANCELLED*
BY AUTHORITY OF DOE/OC
REVIEWED BY J. Diaz DATE 11/1/89
*Ltr. NSC, Rorabacher, To DOD, OCTP, Gilbert 9-19-89

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GLENN T. SEABORG
Chr USAEC. 1961-72
FOLDER-PAGE 16211

Since I plan on leaving in a few days, your early consideration is requested.

Sincerely,

BOB

Inclosure:
Extracts from Presentation to
NATO Ministerial Meeting

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission

cc: MLC
JAIEG

3, 460

ENERGY COMMISSION
WASHINGTON 25, D. C.

MAY 1 1962

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 017011.1

Dear Mr. Gilpatric:

915172

The purpose of this letter is to provide you with a status report of our efforts to prepare proposals for inclusion of permissive devices in non-U.S.-NATO systems as requested in your letter of February 27 and in Mr. Johnson's letter of March 3. As you know, the subject of permissive devices was discussed with the President on April 6 in connection with the question of further dispersal of nuclear weapons to non-U.S.-NATO forces. At that time, the President requested a status report by the Commission on their permissive device work. I am, therefore, sending a summary of the contents of this letter to the President, and am providing you with a copy of that letter.

Of the systems listed in your February 27 letter, I have preliminary information regarding our ability to incorporate permissive devices in certain systems as discussed below:

a. JUPITER/49 - The most expeditious means of incorporating a permissive device in the Jupiter/49 system would require the use of "handmade" or development quality hardware. Such handmade permissive devices and associated controllers to support three Jupiter squadrons could be provided at the following rate: [redacted] at the end of September 1962, [redacted] in October, [redacted] in November, and [redacted] month thereafter, until all three squadrons have been retrofitted and a quantity of spares has been built.

Assuming our estimated total of kits, controllers, and testers to be accurate, the equipping of the three Jupiter squadrons can be expected to be completed about the end of February 1963. The warhead modification would be accomplished as a field retrofit using AEC trained and supervised DOD teams.

The total cost for such a "crash" program for Jupiter would be approximately 1.8 million dollars. This cost would consist of 1.3 million dollars for material [redacted] modification kits which include the XMC-1541 code switch, [redacted] XMC-1573 decoders, [redacted] XMC-1574 encoders and [redacted] XT-431 battery testers

[redacted]

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which include spares) and .3 million for Sandia Corporation development costs. Funds have not been programmed for either the accelerated completion of the component development work or the production of modification kits and controllers; hence, a diversion of funds from other high priority weapon programs will be required this fiscal year and FY 1963. Also, since development engineering man power is currently in short supply due to the atmospheric test series, activation of such a new high priority program would cause a delay of several months in some of the current active weapon development programs. The potential delays in other weapon programs will be discussed in more detail in a later paragraph. Another consideration is that the development quality hardware will be of a currently undefined quality, will probably not be equal to war reserve components and, therefore, may subsequently require an additional retrofit.

In contrast to the "crash" program outlined above, a continued normal, although accelerated, development program for MK-49 permissive devices would result in war reserve quality modification kits and associated controllers being available in about two years. Such a normal program would not interfere with other weapons development programs and would cost approximately 1.2 million dollars compared with the 1.8 million dollars associated with the accelerated program. In either the "crash" or the normal program, funds over and above those currently in the FY 1963 budget will be required, or a corresponding reduction in weapons production will result.

b. DELIVERY AIRCRAFT/7 - The fastest method of including permissive devices in this bomb can be achieved by continuing to build development quality hardware beyond quantities needed for the Jupiter program. Following such a course of action would permit availability of modification kits and associated controllers starting in mid CY 1963. If such a course were pursued, the Atomic Energy Commission would recommend building only about [redacted] kits per month using the development quality hardware in order to be able to phase over from development quality to war reserve about the Spring of CY 1964. The cost per retrofit kit for the MK-7 would be roughly the same as the Jupiter. If a normal development program is followed for the MK-7, it is estimated that initial kits and controllers could be available in 24 months without any effect on other programs. Also, with

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FOLDER-PAGE 017011, #3

respect to the MK-7, consideration should be given to the worth of making such a modification in light of the planned retirement program, and the desire to accomplish only minimal changes to the MK-7 weapons prior to their retirement.

c. DELIVERY AIRCRAFT/28, 43 and 57 - As in the previous systems, the most expeditious method of incorporating permissive devices in these weapons would be achieved to follow a "crash" program. It appears that kits and controllers could be provided beginning in mid CY 1963. The cost of the modification kits for these weapons would be about twice as much as the kits for the Jupiter and MK-7 programs. The higher costs apply since the permissive devices for these weapons will be installed [redacted] A normal but expedited development program would result in initial delivery of modification kits and controllers in approximately 24 months. It should be pointed out that the ability to provide normal development hardware in 24 months for these and the other programs, assumes that some allocation of initial production quantities of permissive devices and controllers can be made among the various systems.

In regard to these bombs and the MK-7, no in-flight capability as indicated in your February 27 letter, will be possible with the proposed modification kit on the time scales discussed in this letter. It will be necessary to arm the permissive device on the ground prior to take-off. Time scales well in excess of the 24 months would be required to provide the in-flight capability. I would like your concurrence on the acceptability of the ground armable permissive device.

d. SERGEANT/52 AND FREEDOM/50 - Through the use of development quality hardware modification kits and controllers could be available for the MK-50 and MK-52 warheads beginning in about mid CY 1963. The cost of the modification kits for these warheads would be approximately equal to the cost of the Jupiter and MK-7 kits. A normal development program would result in war reserve quality hardware starting in approximately 24 months. NOTE: With respect to the systems outlined above, and the initial production under either a "crash" or normal but expedited program, it may not be possible to achieve sufficient production capability to satisfy requirements for all systems simultaneously; some allocation of production may be necessary.

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e. OTHER SYSTEMS - Work on the other systems listed in your letter of February 27 is proceeding on somewhat lower priority than for the systems covered in the preceding paragraphs. As significant information is developed, I will make it available to you.

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Chr USAEC, 1961-72
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In regard to the systems that were discussed with the President on April 6 and the systems listed in your February 27 letter, there appears to be certain inconsistencies which I believe should be resolved. For example, your list included the DAVY CROCKETT/MK-54 system which was not discussed with the President. On the other hand, the NIKE-HERCULES/MK-31, the 8" HOWITZER/MK-33, and the CORPORAL/MK-7 were discussed with the President, but were not included in your February 27 letter. Additionally, I would like to know if the AEC should be working on permissive device installations in the United Kingdom's systems employing U.S. weapons other than the Canberra MK-7 and Valiant MK-28 which were listed in your February 27 letter. I intend to broaden the scope of our investigation to include these additional systems only after notification by you that they should be included. Another point that needs to be clarified as a result of the April 6 meeting with the President, is whether or not the AEC should be making plans for incorporation of permissive devices in U.S.-NATO nuclear systems. I am informed that you are proceeding on the basis that the application of permissive devices is restricted to non-U.S.-NATO forces. I would appreciate a confirmation of this fact since there are budgetary and production implications involved; this will be especially pertinent if the AEC weapons production program funding is held to some arbitrary limit, as this will result in substantial reduction in other production programs. As indicated in this paragraph, it would be helpful if the AEC could receive your statement of all systems/warheads in which you contemplate the use of AEC furnished permissive devices.

Regarding the delay of other high priority weapons development programs caused by "crash" programs to install permissive devices in the Jupiter MK-49 and possibly other systems, I believe we need some guidance from you. If it is determined that "crash" programs are necessary, I request that you advise the priority of effort for the following programs, since necessary development engineering man power must be taken from the lower priority items: TX-28-X3, B-43 Mod 1 Nose, XW-50-X1, XW-52-X2, TX-53, XW-53, TX-54, TX-57 and XW-59.

Certain preliminary actions have been taken by the responsible laboratory in order to respond to "crash" programs if the decision is made to pursue such a course of action. For the near future, these preliminary steps will cause little disruptive effect on other programs and a minimum expenditure of funds. However, it is not possible for this situation to prevail for an extended period. Therefore, I would

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Chr USAEC, 1961-725
FOLDER-PAGE 017011.5

like to know if, as indicated in your previous correspondence, you desire to review formal proposals for each installation prior to the AEC authorizing production measures. This particular aspect requires immediate attention so that I can have our efforts adjusted accordingly. A formal Jupiter MK-49 report has been prepared and is now being evaluated. It is expected that reports on the remaining six systems will be completed by November 1962.

Somewhat related to the above paragraph is the point that in the case of the missile systems, parallel engineering and modification effort should be accomplished for the DOD portion of the system so that the AEC modified warhead will be available and compatible with the DOD portion on parallel time scales.

In determining whether or not a "crash" program should be pursued, it is pertinent to note that a high probability exists that there would be some loss of system reliability, some disruptive and delaying effects on other high priority programs and, of course added expenditures. This must be balanced against the recognized advantage of availability of devices, at least for limited programs, approximately one year earlier than would be provided by a normal but expedited developmental approach. You may wish to consider building only the Jupiter MK-49 on a "crash" basis with other programs to follow in a normal but expedited developmental pattern. This approach would have the advantage of allowing the devices for other than the Jupiter systems to undergo a program of testing and improvement and would permit development of procedural arrangements for handling the code before additional systems become involved.

I would appreciate hearing from you at an early date on the several points that need prompt consideration.

Sincerely,

[redacted]

Chairman

Honorable Roswell L. Gilpatric
Deputy Secretary of Defense
Department of Defense

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Enclosure:
Cy 3A ltr to President

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Chr USAEC, 1961-72
FOLDER-PAGE 017011.6

FOLLOW-UP

915124

MAY 1 1962

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Dear Mr. President:

In response to your oral request of April 6th, I have summarized briefly - in the following paragraphs - the Atomic Energy Commission's development effort on permissive devices and, also, the status of programs leading to the incorporation of such devices in certain non-U.S. NATO systems, with particular reference to the MK-69 Jupiter system.

In 1960, the Atomic Energy Commission began investigating improvements on warhead design to minimize the probability of inadvertent or unauthorized commitment of a nuclear weapon. Initial and present efforts to this end are primarily oriented toward development of permissive devices which could be added to nuclear weapons and which would allow arming of the weapon only after receipt of a prearranged code by the device.

The permissive device - as now conceived - must be embedded in the nuclear warhead; consequently, an individual intent on causing an unauthorized nuclear detonation will need a certain amount of time to by-pass the permissive device by "picking" or by forcing entry into the warhead. (Of course, in order for an individual to cause an unauthorized detonation, he must have physical access to the weapon.) The time required to by-pass the device can vary from a few hours to days, depending upon the degree of skill and knowledge of the individual and the equipment available to him. It should be emphasized that the permissive device represents only an obstacle to the individual attempting to cause an unauthorized nuclear detonation, and does not afford protection from capture of weapons by unfriendly forces. Auxiliary controlling

AUTHENTICATED BY G. A. WILSON, DATE 8/17/88 Plaff
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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 017011.2

equipment, not installed in the weapon but necessary for the operation of the permissive device, includes a recoder to "set" the device and an encoder to provide the proper coded signal to actuate the permissive device. The specific code required to operate the permissive device can be held at any desired level of command, assuming that adequate communications will exist to permit timely transmission of the code in periods of emergency.

In addition to our work on permissive devices, effort is also being directed toward investigation of anti-tamper features for nuclear weapons - involving the use of a system designed to monitor a sealed warhead and to permanently disable critical parts of the warhead if unauthorized penetration of the warhead is attempted. This development is in an early stage, and its applications to weapons - if proven feasible - may require up to four or five years before production items will be available.

As a result of past correspondence between the Department of Defense and the Commission, the AEC laboratories have been investigating the incorporation of permissive devices in the Jupiter MK-49 and in certain other non-U.S. NATO systems. I have prepared a letter to Mr. Gilpatric which provides an interim report on the results of these investigations; I enclose a copy for your information.

Expedited development and installation of such permissive devices in the Jupiter system could be accomplished in about two years without interference with other weapons systems. It is possible, however, on a "crash" basis, to accomplish modification of the Jupiter system, using development-quality hardware which would be of uncertain reliability. This "crash" program could begin in September of this year and be completed in February, 1963. Similarly, for other weapons systems (Delivery Aircraft/7, 28, 43, and 51, as well as Sergeant/52 and Pershing/50, and other systems), an expedited program could be accomplished in about two years, but it would again be

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possible, on a "crash" basis, to use development-quality hardware to further expedite these modifications so as to permit installation of the first devices in March of 1963.

In regard to the budgetary impact of incorporating permissive devices, it is estimated that - based on limited engineering data and knowledge of actual production costs - the cost of adding permissive devices and associated equipment for systems which will be dispersed to non-U.S. NATO forces by the end of June, 1962, will be about twenty-five million dollars. Of this amount, thirteen million dollars would be required in Fiscal Year 1963, and the remaining twelve million in Fiscal Year 1964. Also, additional development funds of about three to five million dollars are required in Fiscal Year 1963. Of course, additional dispersal beyond June, 1962, will result in further expenditures for permissive device modification.

If a "crash" program should be pursued, there is a high probability that there would be some loss of system reliability, some disruptive and delaying effects on other high priority programs, and of course added expenditures. This must be balanced against the recognized advantage of availability of devices, at least for limited programs, approximately one year earlier than would be provided by a normal but expedited developmental approach.

I have taken the liberty of providing a copy of this letter to Mr. Gilpatric.

Respectfully yours,

Glenn T. Seaborg

The President
The White House

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Enclosure

[redacted]

Pertinent but not cited, 3, 505

[redacted]
SECRETARY OF DEFENSE
WASHINGTON

MAY 14 1962

Re: N 800043

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 017096.3

Dear Glenn:

This letter is in reply to yours of 1 May 1962 concerning the program of [redacted]

915123

Our immediate concern is with the installation [redacted] in weapons [redacted]

The priority of systems has been discussed in previous correspondence and I am aware of the discrepancies which have developed. These can be readily resolved. As has been already prescribed, the [redacted]

The next most important systems are [redacted] A crash production rate [redacted] for bomb units commencing in mid-CY 63 would provide a valuable capability until the WR production begins in mid-CY 64. Production of [redacted] would meet the requirements for [redacted] especially in view of the progressive retirement of this weapon. If WR production can be available by mid-CY 64 it is not warranted to program [redacted] but rather point all effort in the WR production toward these weapons. [redacted]

It is our understanding that an early interim and somewhat limited [redacted] capability would be available [redacted] If such is the case and production and dispersal arrangements of these bombs permit, a timely capability could be achieved

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[redacted] This installation would be replaced as the more sophisticated WR units become available. I would appreciate your comments on the feasibility of this proposal and estimates of availability dates if appropriate.

Of the remaining systems, the priority list should be as follows:

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I will ask the Services and DASA as appropriate to submit specific proposals [redacted] for each of these systems. As appropriate, the Military Characteristics channels will be utilized.

The development of the priority of systems from which manpower effort should be taken for the "crash" program will require further consideration. I will provide this by 1 June 1962.

I realize that the quantities of the different weapons involved are important to your planning. I trust that the numbers specified for the "crash" programs are adequate for the present. I would appreciate advice on the latest dates when estimates of the other systems will be required.

Sincerely,

Roswell Gilpatric
DEPUTY

Dr. Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission

[redacted]

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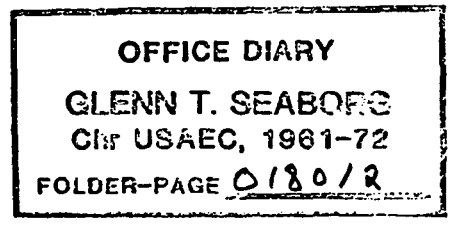
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TROL AND DISARMAMENT AGENCY

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Memorandum of Conversation

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Approved in S 6/8/62

AEC-1 Dr. Seaborg

30

DATE: May 31, 1962

UNCL. BY DOE

SUBJECT: Meeting of Committee of Principals, May 31, 1962

PARTICIPANTS: See attached list

COPIES TO: list attached (36)

The Secretary asked Mr. Foster to outline the issues before the Committee.

Mr. Foster noted that seven issues were being presented to the Committee for decision and two additional issues for discussion. He regarded the most important issues for decision as those concerned with the possibility of reducing military bases in Stage I; the question of a criterion for measuring "destructive capability" and application of the criterion to additional categories of armaments; and the problem of relating retained armaments to agreed force levels. Remaining matters for decision were concerned with the initiation of certain studies.

The Committee then turned to the discussion of specific issues.

1. Military Bases.

In response to a question by the Secretary regarding the extent of discussion of the bases problem at Geneva, Mr. Foster stated that this question had been discussed as much as any other

single issue. As in past disarmament discussions, the Soviet Union has maintained that it is surrounded by U.S. "foreign" bases. The issue is particularly acute in present negotiations since, in view of our proposed 30 percent reduction of armaments and substantial reduction of armed forces, we probably would not need all bases. In view of other Stage I reductions, the non-aligned countries believe that bases should also be reduced. The ACDA recommendation is designed to blunt the Soviet attack on foreign bases by continuing our present position that no distinction can be made between foreign and domestic bases but opening the possibility of some reduction in bases both by the United States and the Soviet Union in Stage I. The Delegation believes it can defend this position.

The Secretary recalled that our foreign bases came into existence because of post-war Soviet pressures. These pressures produced not only bases but military alliances as well. If we placed ourselves in a situation where we could not bring support to our allies, we would confer military advantage on the Soviet Union. We have to maintain our capability to project our forces to the Eurasian land mass. A particular base may be regarded as crucial by certain allies. Therefore, it is difficult to discuss bases in general, and we will need to examine the problem in terms of specific bases.

The Secretary thought, however, that there were certain things that might be said about bases during the negotiations. We could call attention to the fact that we are in the process of eliminating some bases. Morocco and Dhahran, or other examples, might be cited, as appropriate. Moreover, some discussion of bases will be necessary in connection with surprise attack measures. But before we could agree to a formula for reduction of bases in general, we will have to look at bases one by one. Unless we can find some we would be willing to give up, we cannot agree to a reduction.

Mr. McNamara agreed that it would be all right to discuss actions we were already taking to reduce bases. However, he was reluctant to encourage discussion of the possibility of reducing

bases in Stage I. He believed that the matter should be studied in relation to conditions that would exist in Stage I. What we might require in the way of bases may not vary directly with reductions of armaments and armed forces. For example, we might want even more dispersion of nuclear delivery vehicles, and our capability to project our forces might require a shifting rather than a reduction of bases. Moreover, there are problems of definition. We have some 6,700 installations we call "bases", 4,500 in the United States and 2,200 abroad. These range from listening posts to elaborate installations for B-47's.

The Secretary asked whether there should not be a cut-off point for the study of bases and suggested use of a restrictive definition which would limit the study to consideration of bases where combat forces are located.

Mr. Foster thought that the present study could be limited in this manner. With respect to the broader issue, he said that although he agreed with much that the Secretary and Mr. McNamara had said, he thought that as we built more hardened missile sites and POLARIS submarines, we would probably reduce bases, such as those for B-47's. We ought to take advantage of this circumstance in the negotiations. He believed we could protect essential bases better by considering all bases together rather than by allowing the Soviet Union to single out foreign bases.

The Secretary expressed the view that if we could reach agreement on an otherwise satisfactory Stage I, we might consider a Stage I reduction of bases. But with the Soviet Union taking a rigid attitude on inspection and other issues, there did not seem to be much point in going through the agony of trying to reach agreement on bases. There are so many obstacles in the way of agreement, we ought to get some of the others out of the way first. He called attention to the Soviet Union's reversal of its decision on the proposed declaration on war propaganda and said that he considered this move interesting as an indication of Soviet tightening up of its relations with the Free World. He was inclined to place some stock in the report

through the Polish representatives in Geneva that the Central Committee had overruled Gromyko in this matter in order not to show concessions to the United States at this time. He thought that we would see more pressure in other areas (Berlin and Southeast Asia) as well as in disarmament.

Mr. Foster wondered whether we could not, as a matter of tactics, refer to the possibility of reduction of bases as needs change and offer the possibility that later in the negotiations we might consider doing something about bases in Stage I. Meanwhile, we should study the matter in detail.

Mr. Nitze thought there was a question as to what should be said before the study was completed.

The Secretary suggested that a page or two be prepared and cleared with the interested agencies.

Mr. McNamara agreed with the Secretary's suggestion that something be put down on paper. This might include reference to reductions already under way.

Mr. Kaysen questioned the tactics of trying to take credit for reductions already planned. He thought that if it had been concluded that we should for the present reaffirm our position, we should "take the heat" and inform ourselves by study. Calling attention to reductions already under way might simply reopen the issue.

Mr. Foster did not feel that it had been decided that we were precluded from discussing reduction of bases in Stage I if real progress were made in other areas.

The Secretary thought that bases were among the last items that should be discussed. We should see if what is agreed opens up possibilities for reducing bases. There may be some such possibilities.

Mr. McNamara agreed that there was no question that we would get rid of some bases.

The Secretary inquired whether we could get an urgent study of the bases problem. We should use a restrictive cut-off on the definition of bases and focus on installations where combat forces are located. He thought we should look at such bases from two standpoints: first, to see if even now there are some we plan to eliminate; and second, to determine the impact of other Stage I measures on the need for bases. In response to a question from General Smith regarding the status of NATO infrastructure bases, the Secretary stated that we would not necessarily call the presence of our forces on someone else's territory a determinant of a United States base.

Mr. McNamara agreed that a study of the problem should be undertaken.

2. Stage I Force Levels for the U.S. and USSR.

Mr. Foster noted that only a study had been recommended. ACDA felt that we didn't know enough about force levels of 2.1, 1.9, and 1.7 million to determine the acceptability of reductions below the proposal of 2.1 million level. We thought, however, that the 2.1 million level may have acquired a degree of undeserved sanctity. Although we were under pressure to accept a compromise at 1.9 million, we did not know whether a level of 1.9 million would enable us to meet essential requirements.

Mr. McNamara recalled that the Joint Chiefs had studied the force levels problem last summer and regarded their study as definitive. Defense was prepared to study the matter further; however, they would like to take a somewhat different approach than that suggested in the ACDA memorandum. They would like to approach the problem from the standpoint of using their imagination to find ways of maintaining at the 1.9 and 1.7 million levels the same effective combat strength that would be available at the 2.1 million level. There might be ways of doing this.

The Secretary thought we would need very convincing reasons to support whatever level we decided to insist on. We ought to be able to distinguish clearly between levels of 2.1, 1.9, and 1.7 million in order not to go further down the slippery slope than we thought we should go. He recalled that he had been queried about this matter by certain of the Foreign Ministers in Geneva. He had offered two arguments in support of the 2.1 million level: first, we thought this figure could be accepted without the participation of Communist China; second, we thought this level would enable us to project our power to the Eurasian land mass if necessary. We will need to give as much content to our conclusions as we can.

Mr. McNamara considered it important to distinguish between two aspects of this matter: first, the implications of lower levels; second, the presentation of our conclusions. Defense was willing to study the matter.

3. Criterion for Destructive Capability and
4. Application of Destructive Capability to Other Categories.

Mr. Foster recalled that at a previous meeting with the President, ACDA had suggested that the full loaded weight of delivery vehicles seemed the simplest way to measure destructive capability. The matter was not resolved at that time. Our further analysis had not turned up any simpler criterion. Meanwhile, the United Kingdom had raised the question of extending the criterion to categories which included smaller nuclear delivery vehicles. ACDA recommended the adoption of full loaded weight as the criterion for measuring destructive capability, the application of this criterion to categories 3 and 4 as well as to categories 1 and 2, and examination of the usefulness of this criterion in the case of other categories.

Mr. Fisher added that the destructive capability criterion had lost some of its criticality in view of the decision to propose reduction by types. However, it remained important in connection with production proposals.

Mr. McNamara stated that Defense had not found any more suitable index. Full loaded weight had some limitations. The Joint Chiefs were reluctant to accept it and suggested that the

matter be studied by an international scientific commission at a later time. Mr. McNamara, however, thought there was a close enough correlation between full loaded weight and destructive capability to meet the objective he had had in mind when he had initially suggested the importance of a destructive capability criterion. He was satisfied that we could not find a better measure and thought it should be accepted. He agreed that the criterion should be applied to smaller nuclear delivery vehicles and that its application to other categories should be studied.

5. Stage I Production Limits.

Mr. Foster noted that ACDA recommended only a study. He recalled that in discussion of the matter with the President it had been suggested that production should not be over 5% annually. In order to explain what our production proposal means, it is important now to consider whether any changes should be made in the illustrative categories of armaments and what production limitation should be proposed for each category. Study of the matter should be based on two criteria: first, ensuring capability to resume production if a disarmament agreement were terminated; and second, ensuring the availability of replacements for weapons expended in test or training. Economic implications of production limits could be considered in the light of specific proposed limitations.

Mr. McNamara agreed that study of the matter was certainly warranted.

6. Relating Armaments to Regular Armed Forces.

Mr. Foster observed that this was a highly controversial issue. There was controversy within ACDA as well as between ACDA and other agencies. On balance, ACDA had decided to recommend an approach relating retained armaments to agreed force levels. The Soviet Union had raised the matter, and ACDA believed that on balance the recommended approach would be advantageous since it offered a means of cutting the Soviet preponderance of conventional armaments. Although the Soviet

Union might seek parity in the strategic area, they were doing this anyway, and since we do not have strategic vehicles for reserve forces, the present recommendation would not directly affect our strategic weapons. Even recognizing that the recommendation might hit reserve naval forces and some air defense units, ACDA felt on balance that there would be net advantage in moving toward the Soviet proposal.

The Secretary recalled that he had felt we could go ahead under Stage I because our proposal would preserve our war-making capability to the extent that would be necessary without having achieved major transformations in the world political field. There is a critical dividing line at some point. When we move from Stage I to Stage II, we'll have to know a lot more about Soviet attitudes and about means of keeping the peace. Since we are prepared to undertake Stage I in a period of normal relations, the forces we retain will have to be fully effective. In Korea we were critically limited by the state of our reserve stocks. We should not permit that kind of situation. On the other hand, if you have adequate stocks for active forces, some of these stocks might be diverted to use by reserve forces. This posed something of a dilemma.

Mr. McNamara expressed his strong opposition to adoption of the recommendation at this time. He was willing to study the matter further and try to develop a formula although he doubted that this would be possible.

Mr. Foster maintained that the basic consideration involved is that we are trying to cut down the arms race. If we're going to keep such high levels of reserve stocks, we're not cutting down very much. Active armed forces should be fully equipped, but there are finite limits to this. It was Mr. Foster's understanding that the Soviet Union had small active units which are normally flattened out and then expanded. We ought to cut their ability to expand.

Mr. McNamara pointed out that we have 960,000 men in 16 divisions. The Soviet Union has 2 million men in 147 divisions. They would want to retain full armaments for divisions which are

now staffed only with cadres. There would have to be complex adjustments and formulae to reach agreement.

Mr. Kaysen considered the principle of simplicity to be of importance. To implement the ACDA recommendation it would be necessary to get agreement on formulae; he found it hard to see how such matters could be settled as a workable item of agreement. He understood Mr. Foster's point of view that if it were possible to reach agreement on definitions, a major step forward could be taken. However, Mr. Kaysen thought the problem of definition was so difficult, that we wouldn't know what we were buying. If we can reduce along a fairly predictable path, we feel that our security can be protected. He recalled a statement by Mr. McNamara at a previous meeting that we would rather stick with what we know. The proposal to reduce reserve armaments invites a scramble, and the outcome of such a scramble would be uncertain in the absence of a hard and fast rule.

The Secretary believed that we have proposed in Stage I some important measures of disarmament, but retained forces must be combat capable. If we have too little back-up for our forces, we are actually reducing our effective forces below the agreed level.

General Decker thought this might result from the proposal.

Mr. Foster agreed that there had to be adequate back-up for our active forces.

Mr. McNamara thought it would be a serious error to advance the proposal but expressed willingness to study it further. He then departed.

Mr. Fisher pointed out that the proposal meant that armaments retained would be related to armed forces retained. Unless we can do something about Soviet superiority in conventional armaments, they could put a large force into the field more rapidly than we. Everyone had looked at what the proposal would do to us. We ought also to look at its effects on the

Soviet Union. To a large extent the Soviet cadre system makes the 2.1 million level fictitious. We shouldn't negotiate ourselves into a position of continual inferiority in conventional armaments.

Mr. Foster noted that our present approach might actually encourage a build-up of reserves. The Secretary asked whether arrangements could be made to ensure that no one would use the 2.1 million level to flow through a large number of forces and build up reserves. Mr. Foster and Mr. Nitze agreed that it would be important to try to prevent this.

Mr. Kaysen commented that the theory behind our plan recognizes that we would have nuclear superiority and they would have conventional superiority. Mr. Keeny believed that if we proposed parity in conventional armaments we might have to discuss parity in nuclear armaments. Mr. Fisher thought we might have to do this in any case.

Without passing judgment on whether the proposal would be advantageous or disadvantageous, Mr. McNaughton thought it important to recognize that in effect the proposal would produce an entirely new plan. Our present approach is to freeze the existing situation and shrink it. The proposal would change the whole conventional side of our approach to an effort to active parity. Our present approach is to shrink all armaments 30 percent. The proposal means that conventional armaments would be reduced even more. These would represent basic changes.

The Secretary expressed the view that on its face the proposal appeared advantageous to us. Mr. Nitze believed that this depended on working out satisfactory definitions. We should work out the definitions first. Mr. McNaughton recalled that Mr. McNamara had expressed willingness to grapple further with this "elusive problem".

The Secretary and Mr. Foster departed at this point. The Secretary reaffirmed his view that a "crash" study should be undertaken of the bases problem.

7. Study of the Means of Verifying the Elimination of Nuclear Weapons.

Mr. Fisher noted that we had had to give up the idea of waiting until Stage I for an international examination of the problems involved in eliminating nuclear weapons, but we have not said what the timing of such a study should be. We should undertake an intra-governmental study now in order to be prepared for international study prior to the beginning of Stage I. We ought to get out of our present dilemma of saying that we can't enter into an international study because we don't know what our position is.

Mr. Kaysen thought there was nothing wrong with getting our own position clear but we should not commit ourselves on the timing of an international study.

Dr. Seaborg agreed that the matter should be studied. He thought that ACDA as well as AEC should participate in the study. Dr. Haworth believed that CIA had an interest. He noted that the problem was not a lack of information but rather that the information was negative.

Mr. Nitze expressed his view that the question of whether we should put forward the probable negative results of the study is a political question. Equipping of the UN Peace Force was involved.

Mr. Murrow wondered whether if the results looked negative, we should not make this known at an early time. Otherwise, the negotiations might appear to have been futile. Mr. Keeny pointed out, however, that the approach we were taking was to try to get hold of the problem by eliminating delivery vehicles. Mr. Kaysen thought that if we could make progress on the delivery vehicles question, the difficulties of eliminating nuclear weapons might not seem so important. There is a question as to when you should face up to a negative fact. If there are positive achievements, the negative fact may not be important.

Mr. Fisher asked whether an intra-governmental study would be a waste of time under the circumstances. Mr. Kaysen and Dr. Seaborg both thought the study was needed. Dr. Haworth urged that meanwhile we should not permit ourselves to be nudged closer to an international study. Mr. Keeny believed that if we were forced into an international study, it should be broadened to cover the delivery vehicles question. If pressures for an international study increase, we could send knowledgeable people to Geneva. Mr. Kaysen said that we may want to head off such pressures by exposing the facts informally and explaining why we don't want an international study now.

Mr. Fisher affirmed that we were not placing emphasis on undertaking an international study now, only on doing it before a treaty is signed.

Calling attention to the two issues on the agenda for discussion purposes but not decision (the questions of transition and nuclear weapons for a UN Peace Force), Mr. Fisher noted that most of those present had attended the earlier meetings of the Deputies of the Principals when these matters had been discussed. Accordingly, it did not appear necessary to discuss these matters again.

Pertinent but not cited, 4, 18

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
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JUL 6 1962

915120

Dear Manson:

We have carefully reviewed your April 6, 1962, letter transmitting the recommendations and comments of the General Advisory Committee following its 79th Meeting. Our comments are as follows:

(1) Brookhaven National Laboratory

We appreciate the GAC's comments.

(2) Weapons

a.

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DELETED The engineering and nuclear development work has been carried in parallel so that the nuclear testing can be done on designs which can clearly be weaponized.

The extensive engineering studies and experiments being conducted by the LRL require maximum coordination with and cooperation from the Army. We understand that the coordination and cooperation at the laboratory level has been excellent; however, recent Department of Defense budgetary and programming actions have caused us some concern. Therefore, in a March memorandum we asked the Chairman, Military Liaison Committee, to provide us with guidance on the priority of the 155 mm artillery projectile and the level of support that we can expect from the Department of Defense on this program.

The Chairman, Military Liaison Committee, replied to our request for guidance by stating that the Joint Chiefs of Staff have requested that the Atomic Energy Commission be advised that the development of the XW-[illegible] warhead should

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follow a normal development schedule, consistent with the JCS requirement for the production of [redacted] warheads by the end of Fiscal Year 1964.

The Army, in a May 3 letter, rather thoroughly presented its position on nuclear warheads for artillery projectiles. In summary, the Army considers nuclear artillery to be an important tactical weapon and will continue to state high priority development requirements for nuclear artillery projectiles. However, the Army reminded us that the total numbers of nuclear artillery projectiles produced are determined by the JCS in consideration of the National policy and war plans. The Army promised to cooperate in the development of nuclear artillery projectiles.

As a result of the above, we have instructed the nuclear laboratories to continue effort toward developing nuclear artillery projectiles that more closely approach the desired optimum for such characteristics as yield, range, and [redacted] However, the laboratories have been reminded that, for the present at least, in those situations where an artillery shell program is competing with a strategic system, the strategic system should be given priority.

It should be noted that we have received from the Director of Defense Research and Engineering a request for a joint DOD-AEC Phase 2 Feasibility Study of a 155 mm artillery projectile with a yield of [redacted] It is planned to conduct the formal portion of this joint study early in the Fall of 1962.

In addition to the Lawrence Radiation Laboratory's [redacted] program, the Los Alamos Scientific Laboratory is investigating gun-type artillery shells. The LASL recently detonated an 8" gun-type device containing highly enriched uranium in the [redacted] underground test. Preliminary data indicates that the device yield was approximately [redacted] There is some possibility that a similar device could be developed for a high yield 155 mm artillery shell.

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b. Weapons Effects. The lack of sufficient understanding in effects of multimegaton yields and the need for a major increase in effects knowledge, to include the area of civil defense, is acknowledged. However, as you know, the DOD has historically been very active in the planning, collection, and the compilation of effects data; their present and future programs are extensive. (The DOD fiscal commitments for nuclear weapon effects including test costs for FY 63 is $100 million. The projected fiscal commitments for FY 64 through FY 67 average slightly higher than FY 63.)

Regarding the formation of a Study Group, the DOD weapons effects program guidance is accomplished by such a study group (formed by Dr. Harold Brown, Director of Defense Research and Engineering) known as the McMillan Committee which is composed of scientists from industry, the AEC, and the DOD.

Since the DOD is the agency primarily responsible for weapon effects, on May 18 we forwarded to the Chairman of the MLC for comments your recommendations regarding weapons effects and the concentration of effort at a single, versatile, major Government laboratory. Also, we requested comments on the degree of effects research contemplated by the DOD with respect to civil defense. Upon receipt of these comments from DOD, we will forward a copy to you.

c. Permissive Devices. The General Advisory Committee's interest in command and control devices is noted. Therefore, a short review of current actions on permissive devices is considered appropriate.

Recently, after an examination of the problem of installing permissive links in nuclear weapons dispersed in NATO, the President decided that appropriate devices should be procured for all nuclear weapons, now dispersed and to be dispersed to NATO commands, for both non-U.S. and U.S. forces. The Department of Defense and the Atomic Energy Commission are implementing this decision on a priority basis.

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FOLDER-PAGE 0/9031.4

The DOD-AEC program for providing devices is:

1. The XED-1541 coded switch will be installed in the MK-28, MK-49, MK-50, and MK-52 warheads and the MK-7, MK-27, and MK-28 bombs. The XED-1541 coded switch, embedded in and integrated into the electrical circuitry of a nuclear bomb or warhead, will allow arming of the weapon only after receipt of a pre-arranged code. An individual intent on causing an unauthorized detonation will need a certain amount of time to bypass this permissive device by "picking" or by forcing entry into the weapon.

2. The XED-1601 combination lock will be employed with the MK-43 and MK-57 bombs as an interim permissive link capability. The XED-1601 combination lock when installed in the bomb arming plug receptacle prevents installation of the arming plug until removed by application of the correct combination.

3. Department of Defense systems of locks are planned for the MK-31 and MK-54 warheads. Critical components of the MK-7/Corporal warhead and the MK-33 8-inch shell are to be kept separate from the weapon in special safes.

The initial deliveries of AEC permissive devices is planned for September 1962 and the installation of permissive devices in NATO nuclear weapons is scheduled to be completed in August 1964. It should be noted that the initial production of permissive devices will be development quality rather than war reserve quality because of the very short time scales involved.

The AEC has requested that $23,000,000 be added to its FY 1963 obligation authority to support the production of permissive devices.

(3) Civilian Power Reactor Program

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The Commission is very carefully reviewing the nuclear reactor concepts which promise a permanent solution for the Nation's future power needs. It is interesting in this connection to note that it is highly probable that both converter and breeder reactors will be required to

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meet these needs. No fast reactor concept examined to date has a high enough conversion ratio and specific power to provide a sufficiently short doubling time to meet the plutonium required for the projected nuclear power growth curve. Consequently, it appears likely that thermal reactors will be required to provide this material.

The Commission obtained assistance from the National Laboratories and the manufacturing industry. Commissioners Wilson and Haworth have held a series of seminars with the manufacturers and proponents of each reactor concept, Laboratory personnel and members of the GAC reactor sub-committee, as well as the civilian power staff. We appreciate the Committee's offer to accelerate its own review of the Commission's program in time to be of assistance to this study.

The Commission is carefully considering which, if any, reactor prototypes are currently desirable. In general, we agree that the prototypes should be of the minimum size required to obtain the information necessary to construct a full-scale nuclear plant. In cases where experiments and moderate size prototypes have been operated, an intermediate reactor of fairly large size may be required before going to the full-scale power plant.

We agree that experience with large size nuclear power plants where they are likely to be economic is of primary importance to establish a healthy nuclear industry and solve the problems associated with licensing and regulation, location, reprocessing, insurance, etc., and we intend to make every effort to insure that these large reactors are constructed.

(4) Project Sherwood

It is understood that the Division of Research has provided the Committee with copies of various research reports bearing on Project Sherwood. In addition, the Committee has been provided with a statement listing the various off-site contracts sponsored by the Division of Research as well as the funding since the program's inception. The Commission looks forward with interest to reviewing comments from the Committee at the appropriate time.

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(5) 50th Meeting

Arrangements have been made through Mr. Tomi to provide the briefings and discussions you desire for your forthcoming meeting. Lee Haworth plans to be available at least part of the time.

Sincerely yours,

Glenn T. Seaborg

Chairman

Dr. Hanson Benedict
Chairman, General Advisory Committee
to the Atomic Energy Commission

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Page 6 retyped in Chairman's Office, 7/6/62

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915115

Dear Manson:

We have given careful attention to the comments and recommendations of the General Advisory Committee following the 88th meeting and contained in your letter of July 27, 1962. Our comments are as follows:

1. Weapons Matters

a. Increased Yields in Underground Tests at the Nevada Test Site

In order to achieve the maximum benefits of an underground test program, it is necessary for the AEC to test nuclear devices of increased yields at the Nevada Test Site. We have already accomplished a firing of 56 kilotons underground with complete containment (the HAYMAKER event); the STORAX schedule includes one shot which may go as high as 120 kilotons (the MISSISSIPPI event) which is expected to be fully contained. Plans are being made for progressively increasing yields during the remainder of Operation STORAX. Based on theoretical calculations completed to date, it appears that we probably will be able to shoot events up to 200 kilotons without experiencing major ground shock or containment problems. To continue to yields higher than 200 kilotons, it will be necessary to await the experimental results obtained from the progressively higher yield shots currently being executed. At any rate, before we exceed the 200 kilotons figure, we must very closely study the theoretical and the experimental approaches to this problem.

Area available for underground tests at the Nevada Test Site will probably not be expended within the next five to ten years depending upon the yield of the devices and necessary separation distances between shot locations. The current media of alluvium or tuff appear to be suitable. However, questions will continue as to whether these media actually represent the optimum in which testing should continue.

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[redacted] or the disclosure [redacted] person is prohibited.

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To assure that in the future we will be able to test in the optimum media and have a sufficiently large area because of the possibility of ground shock from these increased yields, we are:

(1) Pursuing an active investigation and exploration program of the area north of the Nevada Test Site (Las Vegas Bombing and Gunnery Area).

(2) Compiling data to identify alternate test sites other than the Nevada Test Site for future exploration should the requirement become more definitive.

During FY 1963 we expect to spend something of the order of a million dollars in mapping and exploration of the area north of the Nevada Test Site.

b. The Design and Preparation of a [redacted] Yield Device

The AEC and the Department of Defense are currently making a joint feasibility study (Phase 2) on a very high yield weapon for B-52 application. This Phase 2 study may result in a developmental request (Phase 3). While it is within our capability to design a [redacted] device and prepare it for testing, we do not believe the AEC should undertake to do so without a stated DoD requirement and Presidential authority to proceed.

2. Dangers of a Second Test Moratorium

The Commission is in agreement with and supports the attempts of the Administration to achieve a satisfactory test ban treaty incorporating provisions for adequate detection and verification systems. We recognize, of course, that there are inherent dangers and that, should a treaty actually be achieved, care must be taken to retain the vitality of the laboratories and the capability of responding quickly and effectively if the treaty were ever abrogated.

It is apparent that in the three-year moratorium, prior to the current tests, the USSR achieved substantial gains in the design of test devices. The United States' evaluation of the Soviet test with which they broke the moratorium in 1961 showed that

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they had achieved substantial advances in that series. It is possible that at the conclusion of the USSR test series in the fall of 1961, the Soviets' technology was more advanced than that of the United States for high yield devices--that is weapons of five megatons yield and above. At that point in time, the Soviets' combination of low weapon weight and higher thermonuclear efficiency with reasonable economy in fission material went beyond U.S. technology.

It is possible to conclude from an evaluation of the Soviet test series that rather than concentrating on the "certification" of devices for stockpile during the moratorium, the Soviet scientists had specific plans for continued testing. This could be one reason why they were able to achieve such substantial gains during the moratorium. On the other hand, the United States made only relatively small progress with weapons development during the three-year moratorium when compared with progress we have made during our test program in the past year. Therefore, if the U.S. and USSR were to agree to another test ban, we believe it is essential to maintain a readiness program such as that recommended by the CAC.

If we were granted sufficient sums of money, it would be possible to maintain sites, instrumentation, and other hardware for readiness in testing. The real question is, in our minds, whether it would be possible to retain highly motivated and capable scientists to work on a test program, the execution of which would be highly problematical. We believe that it would be more likely that a situation in which the decision as to whether we would be permitted to test is indefinite would have very nearly the same consequences as a moratorium, because there is no assurance that the necessary experiments to advance technology will be performed.

Consequently, the most important incentive for individuals engaged in the weapons development program is removed. Nevertheless, we agree that, if a test ban is agreed upon, the suggestions of the CAC should be carefully evaluated.

3. Plutonium Value

This recommendation is acceptable from the standpoint of weapons activities since it permits the use of domestic reactor grade material, if the need arises; yet, permits the determination of that use to be based on economic considerations.

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Weapons presently in production or design phases are based on a plutonium specification of six per cent Pu^{240}. Our present policy is to limit plutonium isotopic specifications to not more than one per cent Pu^{241}. The corresponding Pu^{240} is about nine per cent.

Weapons can be designed to use reactor grade plutonium (about 18 per cent Pu^{240} and 5 per cent Pu^{241}) but it is also preferable to use Pu of the current grade. Therefore, if reactor grade plutonium were to be used in weapons, our present planning is for blending the reactor grade plutonium down to the six per cent Pu^{240} specification and in no case go above one per cent Pu^{241}.

Calculations in which the Pu^{240} content of plutonium was allowed to vary have indicated that for those [redacted] systems in which plutonium is now extensively used, [redacted] more plutonium metal is required with 18 per cent Pu^{240} material than with six per cent Pu^{240} material.

There are presently no long range requirements from the Department of Defense; however, one may find some justification to conclude that the need for domestic reactor grade plutonium in weapons will not reach major proportions. The AEC has no specific facilities for either blending or fabrication of this quality material now approved, although some planning is being done which will permit blending. This planning is basically directed toward the material we expect to receive from the UK in exchange for Oralloy.

4. Lawrence Radiation Laboratory

We appreciate the GAC's comments regarding the quality of the programs at LRL.

5. Sherwood Program

The Commission is grateful to each of the members of the General Advisory Committee for their thoughtful recommendations on the Sherwood Program. We would especially like to thank the members of the Subcommittee who spent so much time during the spring and summer in visiting the several Sherwood sites to inspect the facilities and to discuss this important program with the scientists in charge of the work.

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The comments of the GAC on the Sherwood Program give the Commission assurance that the research and development efforts in our laboratories have not been too far from what the GAC might consider optimum.

Several of the specific recommendations of the GAC will, as you know, require most careful consideration by the Commissioners as well as the staff of the Division of Research and the management and scientific staffs of the contractors concerned.

These processes have begun and we should soon be able to discuss the subject with you again.

6. Civilian Power Reactor Program

The Commission appreciates the participation of the Reactor Subcommittee in the power reactor seminars and in carefully reviewing the GAC's specific recommendations.

The Commission has submitted a draft of its report to the Bureau of the Budget for their review.

7. Civil Defense

With reference to the Committee's statement that the AEC is the best qualified agency to develop technology for protecting the civilian population against the effects of nuclear attack, we have been concerned with the need for more detailed and a better description of the phenomenology of ultra-high yield explosions, particularly as these may relate to the protection of the civilian population. The interplay between the effects of blast, thermal, and ionizing radiation markedly changes with the yield of the weapon and the mode of burst, and these effects must be examined and evaluated in relation to the protection problem. We plan to initiate some work that will be designed to further study this problem and investigate the data and information available on high-yield weapon effects.

Historically AEC has taken a strong position among federal agencies in its support of Civil Defense. Acting upon the recommendations made by the Advisory Committee of Biology and Medicine, the Division of Biology and Medicine in 1949 formed a special branch now designated as the Civil Effects Branch. During the early period of the National Civil Defense program the branch was the

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liaison channel between federal Civil Defense and AEC. Through the Nuclear Energy Civil Effects program the branch has a focal part for Civil Defense research for intra-AEC purposes and has been responsible for many developments having general application in the area of design of protective measures for nonmilitary defense. We have refrained from taking any direct responsibility for nation wide Civil Defense planning and operations and have directed AEC support to developments of a technical nature.

As you know, many of the responsibilities for Civil Defense functions were transferred to the Secretary of Defense. Despite drastic cuts in funds for shelter construction the Congress has increased its support for Civil Defense research. We will continue to take an active role in Civil Defense research, and will discuss with the DoD areas of research which are critical to the national program, and additional contributions which the AEC could make to Civil Defense research. We will place responsibility for approved Civil Defense research projects at our laboratories wherein the specialized competency exists.

Representatives of the Division of Biology and Medicine are planning to brief the Committee during its October meeting on Civil Defense and Operation DOME, and they will be prepared to present in more detail our views on the items of research which are needed and to solicit supplemental views of the Committee.

Sincerely yours,

/s/ Seaborg

Chairman

Dr. Manson Benedict
Chairman, General Advisory Committee
to the Atomic Energy Commission

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1AE2A: Addressee
3A: Chairman
4A: Chairman
5A: GM
6A: Comm. Haworth
7A: AGMRD (file)

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JVanderwerf/grj English
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General Ferguson (Air Force) briefed the Commission on the Air Force five-year space program, especially as it applies to nuclear energy.

The Commission discussed the problem brought about by Gilpatric's letter to the White House asking the President to rescind [redacted]

I received a call from Charles Johnson who mentioned two points. The first was that Gilpatric will call me to give me a fill-in on SKIPJACK. The second was that he ~~had~~ has taken a look at the October 13 letter from Gilpatric to Bundy, and he sees what we mean regarding the interpretation that could be put on the wording of the presidential approval requested. He will work out language to go into the draft National Security Action Memorandum to take care of this; i.e., granting presidential approval of those countries listed in enclosure 2 regarding nuclear cooperation, but reaffirming that the policy of presidential injunction on [redacted] DECLASSIFIED still stands and will continue to stand until changed (in accordance with paragraph 4 of NSAM 143). He said that SACEUR has not yet completed their review, but he understands that there will be something coming in from them before too long. I said I believe there is something to come in, asking that that injunction be lifted, but it was not intended to do so through this present device.

From 10:00-10:30 a.m. I attended a Cabinet meeting at the White House. The President opened the meeting by saying that, due to the rising costs of government, especially those of the space program, defense, the pay bill, etc., and because of the tax cut, it is necessary to exercise severe economies in order to keep the budget in hand; and he has asked Budget

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REVIEWED BY Linda DATE 1/2/92
* NSC Memo, Brodsky, to DoE, OCTP, 9-18-89
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Director Bell to make cuts in the budget. Bell then went on to say that the Bureau is aiming for a total which is $2 billion below the BOB planning figures. This is so drastic that it will require cutbacks in programs already started and committed. He said that, as to procedure, he knows that we have already prepared our budgets, and most have sent them in, but we should have our staffs working on possible further reductions preparatory to the review procedure with the BOB. It will be necessary for every agency to go below the planning figures. The greatest difficulty will come in the Departments of Agriculture and HEW, which must each cut another few hundred million dollars below the target figures. (Celebrezze interposed some objection to this, pointing out that this will mean that they will have to cut their budget a total of $600 million below their submitted figures.) Bell indicated that this program shouldn't be interpreted to mean that there will be no new starts of projects as an inflexible rule. The President interposed the observation that the 160,000 increase in government employees since the beginning of his Administration is probably too much. Sorensen then went on to discuss the second item on the agenda, namely, next year's legislative program. He urged us to be considering this now, even though decisions will not be made until after the election. He also suggested that we reconsider the items that didn't pass in this session.

He said we should discuss our programs with his office and with BOB. Item 3 of the agenda-- Review of Foreign Situation, by the Secretary of State-- was postponed because Secretary Rusk was not present.

At 11:00 a.m. representatives of the Martin Company gave the Commission a briefing on isotopic power (SNAP) devices and future requirements. [redacted]

I had lunch with Palfrey at the Roger Smith Hotel.

At 2:30 p.m. I met with Dr. Morton J. Klein (Asst. Director of Chemistry Research) and Dr. Charles Hersh (~~Mgr.~~ Manager of Energy Research) of Armour Research Foundation. Following their meeting with me in July they have discussed with Kaufman and Commander Prosser of the Division of Reactor Development the possibility of support for a project of developing a thermal generative cell utilizing a nuclear reactor.

The Commission met with Jerry Johnson and others from DOD to hear their case for removing restrictions [redacted] They want to know our position on this, which the Commission is not ready to give, i.e., we are not ready to make a determination that it will not contribute to the nuclear weapons capability of the country involved.

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[redacted]

SECRET

JAN 8 1963

Dear Mac:

I refer to my letter to you dated December 22, 1962, wherein I forwarded for approval a schedule of underground tests for the period January through March, 1963. The series then proposed, designated STORAX III, included 19 events, including 2 safety tests. In accordance with the initial decisions of the Working Group on Underground Nuclear Tests [redacted] the STORAX III schedule is being revised. It will now consist of approximately 10-12 events, plus a few one point safety experiments, to be carried out in the period through March 31, 1963.

Pending completion of the new schedule and in accordance with the decision of the Working Group, I am submitting for approval those underground events planned for the near future. These events are: ACUSHI, CARMEL, CASSELMAN, FERRET, HATCHIE, and JEREOA. (For identification purposes the code names are shown as in my letter of December 22 to the President.) As decided at the January 3 meeting of the Working Group, the execution of these events will be extended into February and we will not exceed the previous rate of testing.

Detailed descriptions of the other events that will constitute the remaining items in STORAX III and the listing of events proposed for the last quarter of the current Fiscal Year will be submitted for consideration shortly.

For your convenience I am enclosing a proposed authorization by the President. As suggested by the Working Group, the authorization covers sufficient materials to complete STORAX III.

Sincerely yours,

Signed Glenn T. Seaborg

Chairman

The Honorable McGeorge Bundy
Special Assistant to the President
for National Security Affairs
The White House

Enclosure:
Proposed Presidential Approval

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REVIEWED BY J. Dunn 8/16/88
DATE Chrisman 8/22/88

RESTRICTED DATA
This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure subject to Administrative and Criminal sanctions.

DRAFT ENDORSEMENT

MEMORANDUM FOR

CHAIRMAN, ATOMIC ENERGY COMMISSION

For the execution of Operation STORAX III, that portion of the underground testing program scheduled for January 1 through March 31, 1963, I approve the total expenditure [redacted] of plutonium, [redacted] uranium 235, and [redacted] uranium 233. It is understood that STORAX III will consist of approximately ten to twelve nuclear detonations, plus a limited number of one-point safety experiments.

The President

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THE WHITE HOUSE

WASHINGTON

January 9, 1963

Dear Congressman:

Thank you for your letter of December 24, 1962, on nuclear weapons testing. I regret that so far we have not succeeded in negotiating a satisfactory test ban agreement or other arms control agreement with the Soviet Union. In the absence of such agreements, we obviously must go on improving our weapons technology, and nuclear testing must certainly play its appropriate part in this effort.

Both the Atomic Energy Commission and the Defense Department have vigorous development programs in this field under way. The successful completion of these programs will, of course, require nuclear tests at appropriate times. Many of these new developments can now be tested successfully under ground since both the yield and sophistication of feasible underground tests have been constantly increasing. As you know, we are carrying forward a continuing program of underground tests.

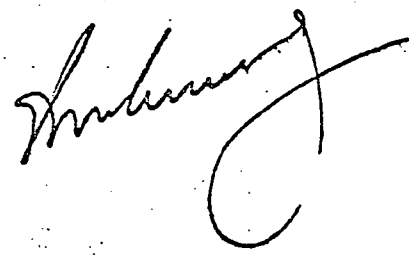
The Atomic Energy Commission, the Department of Defense and their laboratories are preparing to be able to test above ground as expeditiously as now appears useful. At present, the best judgment of the Defense Department and the Atomic Energy Commission is that it will not prove useful to plan the next atmospheric test series before late 1963 or the first part of 1964. Their present thinking is based entirely on scientific and technical considerations; namely, the time required to analyze the results of our own and the Soviet Union's tests of 1962, to understand the results of these analyses, and to plan new experiments based on this understanding. We are of course ready to review this plan at any time that changed international circumstances appear to make a different approach desirable. Both the Atomic Energy Commission and the Department of Defense have

under intensive review the organizational arrangements, technical methods, and locations for the next series of atmospheric tests. Further, they are aware of the necessity for flexibility in plans to meet new circumstances if necessary.

I will be glad to have the Defense Department and the Atomic Energy Commission review with the Joint Committee the kind of arrangements that are being made with respect to Christmas and Johnston Islands and the Joint Task Force as soon as their own thoughts on these matters are sufficiently clarified to make such a review useful.

I appreciate your continued interest in these important matters and the great support the Joint Committee has given to the efforts of the administration in this field.

Sincerely,



Honorable Chet Holifield
Chairman
Joint Committee on Atomic Energy
Congress of the United States
Washington, D. C.

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January 22, 1963

915166

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BY [illegible] DATE 12/5/88

[redacted]

Dear Mr. President:

I am pleased to submit my bi-weekly report to you on significant developments in the atomic energy program.

1. U.K. Interest in Polaris Warheads [redacted]

Five British technical experts are visiting the Lawrence Radiation Laboratory (Livermore), where the present Polaris warheads were designed, to discuss warhead parameters pertinent to the U.K. decision as to which warhead they will use.

The U.K. requested and was furnished by the Atomic Energy Commission the amount of oralloy (93.5% uranium-235) used in the three types of Polaris warheads. This information was furnished under the US/UK Agreement for Cooperation. The following warheads were included: Mk 47-Y1 [redacted] Mk 47-Y2 [redacted] and the Mk 58, which utilizes three warheads [redacted] each. The British stated the information was to be used to make cost comparison in connection with their discussions concerning the Polaris.

The British have on order with the AEC [redacted] of non-nuclear parts associated with the [redacted] warhead for the Skybolt missile. They have cancelled only some of the parts directly associated with the Skybolt mode of delivery. It is probable that the British will consider using a weapon [redacted] which they have under development, as a warhead for their Polaris. If so, they may wish to continue purchasing the non-nuclear parts for their equivalent [redacted] from the United States even though we may not be producing them for our own use.

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2. Status of AEC-WPPSS Arrangements for Use of NPR Byproduct Steam (Unclassified)

In my report of July 10, 1962, I advised that contract negotiations had been completed for the sale of steam from the New Production Reactor to the Washington Public Power Supply System (WPPSS) for the generation of electric power. The AEC has now completed action on the last statutory requirement preliminary to execution of a contract. This statutory requirement provides that "The Commission shall not enter into any arrangements for the sale of byproduct energy from the NPR unless it determines that the purchaser (WPPSS) has offered 50% participation to private organizations and 50% participation to public organizations on a non-discriminatory basis in the sale of electric energy generated therewith."

On January 10, 1963, WPPSS received letters of intent from private and public organizations concerning participation in arrangements for distribution of power generated at the NPR. Five private utilities have tentatively agreed to accept 50% of the total project output and 68 public organizations have agreed to take 115.13% of the output. In order to permit negotiation of certain additional details of the proposed exchange agreement which would be entered into by Bonneville Power Administration, WPPSS and participating organizations, WPPSS has extended temporarily the date for firm acceptance of offers of participation. It is expected that these negotiations will be completed by March 1, 1963. Tentative arrangements have been made for signing the AEC-WPPSS contract on March 5 in Portland, Oregon.

3. Toll Enrichment of Spanish Natural Uranium (Unclassified)

The Commission advised the Spanish Minister of Industry and Trade on January 14, 1963, that recommended legislation is now being prepared which would permit the AEC to enrich Spanish natural uranium in the isotope U-235 at AEC gaseous diffusion plants.

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Spain's immediate need for toll enrichment stems from a pending sale by a U.S. firm to a Spanish firm which is subject to the Spanish Government's approval, of a 60 electrical megawatt boiling water type power reactor. The Spanish Government has been reluctant to approve the project until it is sure the U.S. will be willing to enrich the uranium to be used as fuel for the proposed reactor.

4. Texas Agreement (Unclassified)

On January 10, 1963, at a ceremony in Austin, Texas, then Governor Price Daniel and I executed an Agreement which will permit the State of Texas to regulate within the State the use of radioisotopes, the source materials - uranium and thorium - and small quantities of fissionable materials. The Agreement becomes effective March 1, 1963.

5. Informal Commission Meeting and Dinner with the Joint Committee on Atomic Energy (Unclassified)

This afternoon, I and my fellow Commissioners met informally with the Joint Committee to discuss certain of the problems and events which will occupy both the Joint Committee and the AEC in the forthcoming Congressional year. Among the items discussed were the civilian nuclear power program, the maritime program, the space programs and the FY 1964 budget and its impact. These discussions at the Capitol will be followed by a dinner hosted by the Commissioners.

The discussions went quite well and I personally feel it helped establish a closer rapport which will be necessary in this forthcoming year with its many policy issues. I might add, this was the first meeting of the Committee chaired by Senator Pastore and if today's meeting was any indication, I foresee excellent Congressional-Executive relations in the coming year.

Respectfully submitted,

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Glenn T. Seaborg

The President
The White House

[redacted]

See 5, 119

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THE WHITE HOUSE

WASHINGTON

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FOLDER-PAGE 20: 18

February 2, 1963

JSS 2/4/63

MEMORANDUM FOR

The Chairman, Atomic Energy Commission

On September 25, 1962, you were notified of my approval of an interim 1972 production goal for enriched uranium, noted as Case I in the Commission's letter to me dated August 22, 1962. On January 14, 1963, I approved the 1965 nuclear weapons stockpile objectives on the basis of recommendations to me agreed upon in an interagency meeting on December 20, 1962, and reflected in notes of action dated January 3, 1963, and in the joint letter to me from you and Deputy Secretary Gilpatric dated January 7, 1963.

On the basis of the review of the projected range of future requirements for enriched uranium for nuclear weapons in connection with decisions on the 1965 nuclear weapons requirements, I hereby approve a revised 1972 production planning objective of [redacted] which includes a revised amount for nuclear weapons of [redacted] including associated pipeline. This supersedes the interim objective of [redacted] approved on September 25, 1962.

I request you to develop a revised production plan and to initiate appropriate action as soon as practicable to adjust production of enriched uranium for the period to June 30, 1972, in accordance with the revised objective. However, actions to adjust production should not be viewed as contingent upon results of the further studies of tactical and antisubmarine warfare nuclear weapons now being initiated. The revised objective is based upon my decisions to cancel production of Skybolt warheads, to terminate further production

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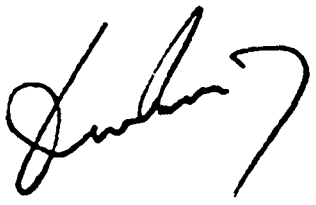
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of [redacted] artillery shells beyond that previously approved (on the basis recommended in the meeting of December 20), and to apply the more stringent retirement policy stated in my memorandum for the Secretary of Defense, a copy of which is attached.

You are also requested, jointly with the Department of Defense, to develop for my consideration by May 1, 1963, a similar 1972 production planning objective for plutonium and tritium, taking into account both military and non-military needs, as well as AEC production, by-product plutonium to be purchased by AEC, [redacted] and any other material expected to be available. Weapons quality and fuel quality plutonium should be separately identified, both on the supply and demand sides.

I am sending a copy of this memorandum to the Secretary of Defense.



[redacted]

Pertinent but not cited, 5, 127

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DIVISION OF MILITARY APPLICATION
U. S. Atomic Energy Commission
Washington 25, D. C.

This document consists of 2 pages. Copy 1 of 2 copies, Series A.

STORAX Test Bulletin No. 23

Date: FEB 7 1963
Ref.: MA:T:DIG

SUBJECT: A RECAPITULATION OF THE NUCLEAR EVENTS CONDUCTED BY THE U.S. DURING THE PERIOD SEPTEMBER 15, 1961 - DECEMBER 31, 1962

Geographical Allocation		
Nevada Test Site		71
Pacific		36
Air drops off Christmas	(24)	
Air Drops in Vicinity of Johnston	(5)	
High Altitude Tests at Johnston	(5)	
Open Seas Tests	(2)	
Carlsbad		1
Total Events		108
Environmental Apportionment		
Underground		66
NTS	(65)	
Carlsbad	(1)	
Cratering at NTS		3
Atmospheric		33
NTS	(3)	
Pacific	(30)	
High Altitude at Johnston		5
Under Water off Coast of California		1
Total Events		108

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BY AUTHORITY OF DOE/OC
J. Diaz 10/23/90
REVIEWED BY DATE
Rahm 10/23/90

[redacted]RICTED DATA

This document contains [redacted] data as defined in the Atomic Energy Act of 1954. Transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

[redacted]

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Functional Assignment

Laboratory Weapons Research & Development		90
NTS	(61)	
Overseas	(29)	
Department of Defense Events		14*
Effects Tests at NTS	(6)	
Systems Tests at NTS	(1)	
Effects Tests at Johnston	(5)	
Open Seas Systems Tests	(2)	
U.K. Weapons Research & Development at NTS		2*
Plowshare (1 event NTS, 1 event Carlsbad)		2*
Total Events		108

*For convenience, all 18 events, other than those for laboratory weapons research and development, are listed below: HARDHAT (DOD effects); DANNY BOY (DOD cratering); MARSHMALLOW (DOD [redacted] effects); LITTLE FELLER 2 (DOD effects); LITTLE FELLER 1 (DOD system); JOHNNIE BOY (DOD cratering); SMALLBOY (DOD effects); STARFISH PRIME, CHECKMATE, BLUEGILL TRIPLE PRIME, KINGFISH and TIGHTROPE (DOD high altitude effects); SWORDFISH (DOD ASROC system) and FRIGATE BIRD (DOD Polaris system); PAMPAS and TENDRAC (UK development); SEDAN (Plowshare cratering) and GNOME (Plowshare experimental).

Public Announcement

All nuclear events were publicly announced except the following nine AEC developmental events at the NTS: BOOMER (10/1/61); ARIKAREE (5/10/62); RARITAN (9/6/62); WOLVERINE (10/12/62); TIOGA (10/18/62); ST. LAWRENCE (11/9/62); GUNDI (11/15/62); TAUNTON (12/4/62); MANATEE (12/14/62).

A. W. Betts
Major General, USA
Director of Military Application

Standard Distribution for STORAX Test Bulletins As Revised

[redacted]

See 5, 267

[redacted]
UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

MAR 11 1963

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 027113.1

RESTRICTED DATA 915165

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Dear Mr. President:

The Commission has reviewed Secretary Gilpatric's memorandum to you dated March 6, 1963, concerning the joint State-Defense study, pursuant to paragraph three of National Security Action Memorandum 143 (NSAM-143), of dispersal of [redacted] atomic weapons in support of NATO forces of [redacted]

Pursuant to NSAM-197 and Mr. Kaysen's letter of October 23, 1962, referring to the Commission's responsibility to participate in specific recommendations to the President on the dispersal of weapons to specific countries, the Commission has considered the aspects of the proposed dispersal concerning safety and the security of Restricted Data in weapons dispersed in support of non-U.S. forces.

The Commission notes that the proposed action would be the first authorization for dispersal of two-stage weapons for use on [redacted] A-1 DELETED [redacted]

The Commission has no objection to the proposed action with the understanding that security arrangements will be employed which adequately safeguard Restricted Data in the dispersed weapons, particularly against radiography. The Commission, therefore, in coordination with the DOD, plans to survey the security arrangements when the [redacted] DELETED [redacted] become operational.

Safety considerations will be enhanced by the incorporation, as proposed in Secretary Gilpatric's memorandum, of [redacted] A-1 DELETED in the weapons to be dispersed.

A joint determination was made under Executive Order 10841, authorizing the transmittal to [redacted] of the information identified in the enclosure to the Secretary of Defense's letter of December 12, 1960. If other atomic information, such as the specific number of weapons to be made available to [redacted] or atomic information concerning [redacted] A-1 DELETED [redacted] must be furnished [redacted] a supplementary joint determination would be required. The Commission, however, does not know the extent of the atomic information which the Department of Defense will wish to communicate to [redacted] in connection with this program.

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BY AUTHORITY OF DOE/OC
REVIEWED BY [signature] DATE 7/19/89
* Memo NSC Grabosice TO DOE, OC
Siebert 5/25/89
[signature] 7/19/89

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 027/13.2

A-1 The Corporation is proceeding on a priority basis to provide the [redacted] for CIA aircraft in [redacted] referred to in paragraph b, page 3, of Secretary Gilpatric's memorandum. Fabrication time is expected to approximate eight weeks.

Respectfully yours,

Signed Glenn T. Seaborg

Chairman

The President
The White House

cc: The Honorable Robert S. McNamara
Secretary of Defense

The Honorable Dean Rusk
Secretary of State

Chairman Seaborg (2) ✓
Commissioner Haworth
Commissioner Palfrey
Commissioner Ramey
Commissioner Wilson
General Manager

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5, 303

[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.
MAR 20 1963

DC FILE

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 27138

901765

DE 3-20-63

Dear Mr. President:

Your approval is requested for assigning the highest national priority to the program for development and production of [redacted] DEL [redacted]

National Security Action Memorandum No. 160, dated June 6, 1962, authorized the Atomic Energy Commission to procure [redacted] DE [redacted] Subsequent memoranda, dated November 16, 1962 and January 30, 1963, to Holders of NSAM No. 160, implemented the program and established an installation schedule for the [redacted] DEL

We believe that approval of our request, as stated above, is essential to meeting the installation schedule stated in the January 30, 1963 memorandum and that this approval would be in keeping with the criteria established by the National Security Council and the National Aeronautics and Space Council for designating programs as being in the highest national priority category.

Respectfully yours,

(Signed) Glenn T. Seaborg

Chairman

The President
The White House

cc: Secretary of State
Secretary of Defense
Secretary of Commerce
Director, Bureau of the Budget
Director, Office of Emergency Planning

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BY AUTHORITY OF DOE/OC
J. Dean 11/1/89
REVIEWED BY
11/22/89

* NSC Memo, Graboske to DOE, OCTP, 9/18/89

CONSM CONS DMA C. AGMO AGM DGM GM

FARRAGUT:mfs

3-13-63

[redacted] NAL SECURITY INFORMATION

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UNCL. BY DOE
[redacted]
AGENCY

OFFICE OF
THE DIRECTOR

March 28, 1963

Dear Glenn:

In your letter of March 8, 1963, you recommended that paragraph 4.b.(5) of Article II of the US Draft Test Ban Treaty be revised to delete the requirement for revelation of device design and that an annual quota of 5 or 6 nuclear detonations for peaceful purposes be added. These comments would apply equally to the annex on peaceful uses to the latest draft of the test ban treaty, forwarded to AEC for comment on March 15, 1963. The consideration affecting this recommendation, you have indicated, was that the Plowshare Program would be seriously hampered by the present formation of the peaceful uses portion of the draft treaty.

We recognize Plowshare to be a very important and thoroughly worthwhile program. The strides which have been made in the area of scientific experiments and development of technology of nuclear excavation are very impressive and should be continued. We, following numerous discussions with officials of AEC, formulated provisions of the treaty and the annex on peaceful uses with Plowshare very much in mind. Under the treaty and the annexes as presently formulated, Plowshare explosions could still continue, either without device revelation (where the specific agreement of the other parties was obtained for the particular explosions) or with device design revelation (where consent of other parties to the explosions was not obtained).

Your suggestion of an annual quota of 5 or 6 nuclear detonations for peaceful purposes, without device revelation,

Dr. Glenn T. Seaborg, Chairman
U.S. Atomic Energy Commission,
Washington, D. C.

appears to raise some very serious problems. If we asked for such a quota, the Soviet Union would never agree to it unless they obtained similar rights for themselves. If such an agreement came to pass, the Soviet Union could use the explosions for improvement of its weapons technology and the basic purpose of the comprehensive treaty would be defeated. It is inconceivable that the Soviet Union would gratuitously grant to the United States an exception to a test ban so that we could explode 5 or 6 nuclear detonations under a "free" quota without device revelation. Although I realize that it might be valuable to use the most modern device designs in Plowshare and it is not our interest to reveal these designs to the Soviet Union, I believe that our overall national interest in a nuclear test ban does not permit us to include an annual quota of the type you indicate. To make such a proposal would subject us to a barrage of propaganda that we are not sincere in our desire for a test ban.

I hope that AEC may be able to reassess its position, taking into consideration that under the present draft treaty and its annexes peaceful uses explosions may be continued even without Soviet consent.

Sincerely yours,

William C. Foster

028098 SOFG/D2C/
1/17/63
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ANNEX II

EXPLOSIONS FOR PEACEFUL PURPOSES

A Party to the Treaty intending to carry out or assist in the explosion of any nuclear device for peaceful purposes in accordance with this Annex shall:

1. At least four months in advance of the proposed date of any explosion in connection with a project for peaceful purposes, provide the members of the Commission with a detailed statement containing:

   a. a description of the peaceful purpose of the project;

   b. the date and purpose of each nuclear explosion proposed;

   c. a description of preparations being made for each such explosion, instrumentation to be used, measurements to be taken, and experiments to be conducted;

   d. a topographical map, of a scale of approximately 1:20,000, of an area with a radius of at least

three miles from the site of each such explosion;

e. a general description of each nuclear device, including the anticipated yield and whether the device will be fission or thermonuclear;

f. a detailed description of the exact place and depth of emplacement of each nuclear device; and

g. a copy of the official safety plan for the project describing in detail measures to be taken to minimize the amount of radioactive debris which may be produced.

2. Receive and give full consideration to all comments on the proposed project made by members of the Commission prior to two months before the date of the initial explosion.

3. At least six weeks in advance of the date of the initial explosion:

a. provide each member of the Commission which has submitted comments pursuant to paragraph 2 of this Annex with a statement of the action taken in response to the comment or an explanation of why action has not been taken; and

b. provide all members of the Commission with a current statement containing all the information required pursuant to paragraph 1 of this Annex.

4. At least one month in advance of the date of the initial explosion, invite all members of the Commission to send observers to witness each proposed explosion. The invitation required by this subparagraph shall specify:

a. the number of observers which any member of the Commission may send, which shall be not less than two individuals;

b. the earliest date on which such observers may arrive at the project site, which shall be not later than three days before the actual date of emplacement of each device, and the length of time during which such observers may remain at the site after each explosion;

c. the travel and housing arrangements which the Party conducting the peaceful uses project will make for observers.

5. Permit observers sent by members of the Commission

to make observations in connection with any such explosion which shall include: inspection of the site of each proposed explosion; observation of the preparations being made for each explosion; inspection of the instrumentation to be used in making measurements or conducting experiments; observation of actual firing; and observation of post shot activities at the site. In addition, the observers sent by each of the ~~permament~~ permanent members of the Commission shall be given an adequate opportunity at a designated inspection site to inspect externally and internally any nuclear device to be detonated pursuant to this Article and to examine detailed drawings of the device, provided that such detailed drawings may not be reproduced or removed from the inspection site. Each observer shall also be given the maximum opportunity to keep each device, after inspection and reassembly, under continual surveillance to ensure that the device detonated is the one inspected.

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[redacted] DC FILE DOD

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

This [redacted]
No.

APR 22 1963

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72/SZI
FOLDER-PAGE 038 [redacted]

915156

Dear Ros:

This is in response to your letter of April 2, 1963, requesting Commission concurrence in a general policy relative to interpretation of statutory determinations and, in particular, concurrence in the release of Prescribed Action Links (PAL) information to [redacted] under a previous statutory determination.

We understand that the problem concerning release of PAL information to [redacted] has been resolved on the basis of a classification decision March 29, 1963, and that the information has been communicated to [redacted] That classification decision, in the context of the same information but concerning its release to other countries in connection with the MC-7 weapon, was that the information considered necessary for release by the U. S. Air Force did not contain Restricted Data or Formerly Restricted Data concerning PAL.

With respect to interpretation of previous statutory determinations, we agree that release of information concerning, for example, new weapon equipment or modifications should not always require entering into new joint determinations. You have expressed the view that you do not believe the general policy of requesting statutory determinations for each new weapon component or modification is required when the component falls within a general category of a previous determination. We share your desire to avoid unnecessary or duplicate determinations; however, we find it difficult to agree in advance that all Restricted Data or Formerly Restricted Data revealed by new components, modifications or other new developments falling within the nomenclature of a general category of a previous determination is necessarily encompassed by that determination. This may well be the case in many instances but we think you would agree that it must depend on the facts in each case.

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[redacted] contains information affecting the National Defense within the meaning of the [redacted] U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

4/22/63

193

BY AUTHORITY OF DOE/OC
[signature] 11/30/88
[illegible] DATE
[signature] 1/5/88

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Chr USAEC, 1961-72
FOLDER-PAGE 028

There are cases where the Restricted Data or Formerly Restricted Data involved in new weapon components, modifications or other new developments reveal advances in technological developments, additional internal weapon design or is significantly different in kind or sensitivity from the information evaluated when a previous joint determination was made. In these cases, we believe that the responsibilities delegated under Executive Order 10841 would require consideration of the new information under the joint determination procedure.

Sincerely,

Signed Glenn T. Seaborg

Chairman

The Honorable Roswell L. Gilpatric
The Deputy Secretary of Defense

cc: Chairman, Military Liaison Committee

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THE WHITE HOUSE
WASHINGTON

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 29022

May 6, 1963

901887

NATIONAL SECURITY ACTION MEMORANDUM NO. 239

TO: The Director, U.S. Arms Control and Disarmament Agency
The Committee of Principals

SUBJECT: U.S. Disarmament Proposals

1. Discussions in the 18 Nation Disarmament Conference at Geneva on both general and complete disarmament and a nuclear test ban treaty have unfortunately resulted in almost no progress. There has been no serious discussion of general and complete disarmament for some time. While discussions of a test ban treaty have shown important developments since the beginning of the 18 Nation Conference, they are now stalled.

2. I have in no way changed my views of the desirability of a test ban treaty or the value of our proposals on general and complete disarmament. Further, the events of the last two years have increased my concern for the consequences of an un-checked continuation of the arms race between ourselves and the Soviet Bloc.

3. We now expect the 18 Nation Disarmament Committee in Geneva to recess shortly for six weeks to two months. I should like the interval to be used for an urgent re-examination of the possibilities of new approaches to significant measures short of general and complete disarmament which it would be in the interest of the United States to propose in the resumed session of the Geneva Conference. ACDA will, in accordance with its statutory responsibilities,

[redacted]

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REVIEWED BY DeDiaz 11/1/89 DATE
* Ltr. NSC, Grubosh, to DOE, OCTP, Siebert 9-19-89
Kahn 11/22/89

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 29023

take the leadership in this effort and coordinate with the other agencies concerned through the usual procedures of the Committee of Principals. I should like to review the results at an appropriate time in the process.

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6/1/63

Relevant but not cited, 5, 585

Copy No. 2

THE WHITE HOUSE
WASHINGTON

UNCL BY DOE
[redacted]

May 21, 1963

BD 6/1/63

NATIONAL SECURITY ACTION MEMORANDUM NO. 245

TO: The Secretary of Defense
The Chairman, Atomic Energy Commission

SUBJECT: High Yield Nuclear Weapons

1. The President today reviewed the problem of developing a high-yield nuclear weapon on the basis of the background paper provided by the Department of Defense and the Atomic Energy Commission. He requested that the problem be re-examined, and that attention be directed also to the question of developing a high-yield warhead to be delivered by presently programmed missile systems.

2. He requested a report on this subject in forty-five days.

McGeorge Bundy

Copy to:

The Secretary of State
The Director of Central Intelligence
The Director, ACDA

901942

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 30 7

June 1, 1963

NOTES ON CONVERSATION WITH DR. BERTRAM GOLDSCHMIDT IN GRILL ROOM OF HOTEL CRILLON (12:30 TO 2:00 PM), FRIDAY, MAY 31, 1963

This followed a meeting held from 11:45 to 12:15 in the CEA offices at No. 69, Rue de Varenne, Paris, where Goldschmidt, Perrin, Wells, Luedecke and Friedman were present and notes covering the results of this conversation are included.

Goldschmidt said in a most definite manner that there have been no arrangements for financial assistance or cooperation with West Germany or Italy in connection with the construction of the Pierrelatte gaseous diffusion plant and no such cooperation is contemplated. He said that such cooperation would clearly not be in the interests of France, that France is prosperous and can easily manage the cost for this plant. He indicated that when the plans were being made in 1956 for the construction of Pierrelatte, the six countries of Euratom (Common Market countries) were consulted with regard to the possibility of their cooperation in the venture. Two or three small countries such as Sweden, Denmark and Switzerland were also consulted but not in as serious a manner. When none of these countries indicated an interest in cooperating, France decided to go it alone. Goldschmidt recalled that along about 1958 or 1959, Ippolito of the Italian Atomic Energy Commission, had inquired of him as to the possibility of the Italians cooperating in the construction of the Pierrelatte plant. Goldschmidt indicated that he did not know whether this indicated an official request from the Italian government or only represented the viewpoint of Ippolito. Goldschmidt said he indicated to Ippolito that France was definitely not interested in such a proposal.

Goldschmidt then went on to say that about 18 months ago it was apparent that the cost was going to be substantially more than originally estimated and that despite the fact that Couture

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 30 8

knew this at that time, he failed to make provisions for it in the regular budget planning. If proper provisions for budgetary increase had been made at that time the problem could have been concealed in connection with the military budgeting process.

However, in view of Couture's failure to budget properly at that time, it became necessary to request the needed supplementary funds from Parliament which led to the unwelcome publicity and near crisis in the French government in the course of obtaining the additional funds through this mechanism. This mistake of Couture's together with earlier indications of inadequacies during his four or five year tenure as Chairman of the CEA led to the loss of confidence in him by Government officials. Couture's difficulties were augmented by the fact that all of the members in his own organization, including Goldschmidt and Perrin, etc., had lost confidence in him. He was regarded as a weak man and a poor administrator by the members of his organization. As a result of these factors he has been asked to leave, effective early in June, despite the fact that his term of office does not expire until next January. Couture himself is quite unhappy with this outcome and is leaving office with some ill feeling. However, the matter is being handled officially as a sort of promotion of Couture to a position of higher salary and replacement by a man with more industrial experience - Robert Hirsch.

Goldschmidt said that possibly sometime within the next few years, France might approach the members of the Euratom again with the proposal that France, now capable of building a gaseous diffusion plant, would offer its knowledge to the group in connection with a possible joint effort to build another gaseous diffusion plant somewhere in Europe. This second plant would be solely for the purpose of producing low enrichment U-235 for use as nuclear fuel in power reactors thus making the European members independent of U.S. and England in this respect.

Goldschmidt and Perrin had indicated in the earlier conversations that the plant had cost more than double the original estimate and when I asked them for a precise estimate of the cost they agreed that the figure would be between 900 million and one billion dollars. They said that this would include all costs of design, construction and start-up. They indicated that the plant would start up either in late 1966 or early 1967.

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Chr USAEC, 1961-72
FOLDER-PAGE 30 9

I then asked them in this earlier conversation if my estimate of production which I suggested to Goldschmidt when I saw him last September was still valid. At that time I proposed to him as a guess that the production during the first year or so of the Pierrelatte operation would be at the rate of about one ton per year and Goldschmidt indicated that this was about right or perhaps an over estimate. Although Perrin and Goldschmidt did not directly confirm the present status of this estimate they gave our group the impression that the estimate is still pretty good, and we concluded that initial production of 3-4 kg per day is perhaps as good an estimate as the French themselves can make at this time. Perrin and Goldschmidt said that improvements in production techniques in the plant itself would lead to an increase in production by two or three times within a period of about two or three years.

I asked Perrin and Goldschmidt in the earlier conversation if they were having any difficulties in construction at Pierrelatte and they said the initial difficulties concerning seals, compressors and barrier, etc., had all now been overcome and that the only remaining difficulty was in the compressors or pumps in the final stages of enrichment where the best performance is required. Perrin said that it is on the basis of expecting improvements, especially in the barrier, that they estimate the increased production as a result of operating experience during the first two to three years.

I also asked them whether they planned to use any of the plutonium produced at Chinon for weapons and they indicated that a small percentage - perhaps 10% - would be of weapons grade and so used.

I asked about the chemical separation plant near Cherbourg and they said that this would be used as an industrial type plant for the reprocessing of reactor fuels. However, they did indicate that such a plant would also serve as a back-up to the production complex at Marcoule where their primary chemical separation plant for weapons grade plutonium is situated.

In the later conversations with Goldschmidt I asked him about the time scale and the direction of weapons design in the fission and thermonuclear fields. He said that their present fission weapons are probably more efficient and sophisticated than people realize and they are very satisfied with them. He said that they will be very readily adaptable to the Mirage-IV bomber and that

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Chr USAEC, 1961-72
FOLDER-PAGE 30 10

they probably can be made adaptable to a future missile delivery system. Goldschmidt indicated that in the thermonuclear field they are planning to use U-235 but they realize that it is quite possible to make a thermonuclear weapon of lesser efficiency at an earlier date through the use of plutonium alone without any U-235. He said that he doubts that the French would produce such an all-plutonium weapons, however, because it is not necessary to take this interim step on the basis of the time scale they contemplate. He said that they are thinking in terms of being ready with thermonuclear weapons in the early 1970's and sees no reason for trying to beat this date although he did mention that a date as early as 1969 may be possible. At one time he even mentioned the 1980's as a real date that they feel they should be ready with a spphisticated thermonuclear weapon and an adequate delivery system. He indicated that he and the French Government feel that France might play quite a substantial role intermediate between the positions of the U.S. and the U.S.S.R. I asked him whether they are producing separated Li-6 or tritium and he replied that arrangements are being made for the production of both. I asked him about the plans for weapons testing and he said that they are developing a site in the Pacific which probably will not be ready before another 2 or 3 years. He said that this was another reason why it wasn't profitable for France to develop an all-plutonium thermonuclear weapon as an intermediate measure before highly enriched U-235 becomes available. I asked him as to the status of the development of the missile systems and their guidance. He said that he was not familiar with this program but he gathers from those engaged in it that they have full confidence in their ability to produce the missiles with the required characteristics in the time scale contemplated.

I asked Goldschmidt where the weapons work was carried on. He said it was carried on in 3 sites. One site known as B-3 is about 50 kilometers from Paris and is a place where other military work is carried on as well. The other two sites are at secret locations and at one the criticality experiments are carried on and at the other the weapons themselves are built.

In the earlier conversations with Perrin and Goldschmidt we discussed the Dimona reactor in Israel and its potential for making weapons. Goldschmidt said he had seen the reactor and as he recalled, it operates at a power of about 24 MW. We agreed that this might lead to the production of some 7 kg of plutonium per year. I asked them whether they knew of any plans by Israel

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Chr USAEC, 1961-72
FOLDER-PAGE 30 11

to chemically extract this plutonium and where it might be processed and they said they did not have this information.

Glenn T. Seaborg

Relevant but not cited, 5, 602

[redacted]

THE SECRETARY OF DEFENSE
WASHINGTON

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 029204.59

30 MAY 1963

S38 5/31/63

915252

Dear Glenn:

I have been concerned that the Soviets may launch, or claim to have launched, a nuclear weapon in orbit. If this happens, I consider it of the highest importance that we possess the capability of destroying the satellite. Accordingly, I have directed the Army to modify the NIKE ZEUS installation [redacted] to give that system some anti-satellite capability. This has been done, and a successful test firing (in terms of miss distance) was actually accomplished last week.

However, to obtain even an interim operational capability, we must have missiles [redacted] in a condition of readiness. One anti-satellite missile is now at [redacted] the Army has been directed to procure another one on a priority basis; and to add two more at a later time. [redacted]

I recognize that, to date, NIKE ZEUS missiles have not been available for normal warhead certification flights. The Army has been authorized to procure five ZEUS missiles (three for test, two for back-up in event of failure) for the purpose of making these tests. [redacted] since the certification flights can be made with dummy nuclear components. It is estimated that the certification flights can be completed in six to nine months, depending on how soon we can procure the missiles.

In the interim period, however, I consider that the urgent need to obtain an immediate operational capability warrants an Atomic Energy Commission waiver so that the missiles can be used if the occasion dictates.

The AEC is requested to provide [redacted] warheads. Although the nominal yield [redacted] is desired, the importance of obtaining the first warhead as soon as possible would make a lower yield version [redacted] acceptable if this would expedite the delivery of the first warhead. The Army will provide the necessary adaption kits and storage facilities [redacted] (to be determined).

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J. Diaz 4/17/89
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*Ltr. OASD McDonald TO
DOE, OC dated 3/22/89

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 039204.60

In the event that any discrepancies are revealed in the certification flights, the warheads will be exchanged on a one-for-one basis for suitably modified warheads.

In summary, I would greatly appreciate an AEC waiver of the certification requirements, to be effective until the completion of the certification flights, and the delivery of [redacted] warheads, the first on an expedited basis.

Bb

The Honorable Glenn T. Seaborg
Chairman, Atomic Energy Commission
Washington 25, D. C.

Relevant but not cited, 5, 602

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JUN 7 1963

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915253

Dear Bob:

This refers to your letter of May 30, 1963, concerning warheads for an Interim NIKE ZEUS capability.

During initial coordination with the Department of the Army, we were informed that the interim emergency operational capability dates tentatively established for the four missiles are August 1, August 5, November and December of 1963.

We are confident that we can meet the Army's capability dates with the first [redacted] warhead to be delivered [redacted] All four warheads will be of the high yield version.

Based on information available to the weapons development laboratories, we see no problem with releasing the requested warheads for an interim emergency operational capability. However, our laboratories will need to continue to work with the cognizant Department of Defense Agency to assure that the warhead is compatible with the modified carrier in this application. We anticipate no major problems in this area.

During the initial coordination meeting, it was indicated that the Department of the Army will take immediate steps to initiate a safety study of the system and we assume that interim safety rules can be developed and approved on a time scale compatible with the desired emergency operational capability date.

BEST COPY AVAILABLE

Sincerely yours,

(Signed) Glenn T. Seaborg

Chairman

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The Honorable Robert S. McNamara
The Secretary of Defense

Ref: 3-05099 fm DOD:MCNAMARA dtd 5/30/63

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6/6/63 F

30020

Thursday, June 6, 1963 - D. C. Office

Carl Kaysen called in connection with the Pierrelatte matter that we discussed the other day. He asked whether I arranged for our Intelligence office to give the substance of this information to CIA, and whether CIA would put it out in the form of a report, without indicating its source. I said I asked Reichardt to handle this, indicating to him the sensitivity of it, and that this would be given a somewhat more limited distribution than usual. Kaysen pointed out that it is important that it not be so limited that it would not be accessible to everyone who needs to know this. I said I would be interested in knowing what the President learned in his conversations with French Minister Gaston Palewski and German Minister Hans Lenz. Kaysen said he would see to it that anything that was learned will be passed on to me. Kaysen said that DELETED was prepared before they received my information, but he thinks it still remains true that we are interested in further information, but it is obviously something of a less urgent problem than they thought, ~~it was.~~

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See 5, 610 , 633

[redacted]

not in GTSD
SOFG/DZD/7
Plowshare

DC FILE

UNIVERSITY OF CALIFORNIA

LAWRENCE RADIATION LABORATORY
P. O. BOX 808
LIVERMORE, CALIFORNIA

THIS DOCUMENT CONSISTS OF [redacted]
NO 1 OF [redacted]

BY 63-44

June 4, 1963

Dr. Glenn Seaborg, Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Dear Chairman Seaborg:

Recently we have had an opportunity to discuss with George Kavanagh, John Kelly, and others, some aspects of the Plowshare program related to a possible test ban treaty. This general subject involves not only the technical needs of the program, but also domestic and international issues.

At the outset, it is important to state why Plowshare activities should be exempt from a possible treaty. Through the Plowshare program the United States can aid in a major way almost all nations of the world. By improving water resources, shortening transportation routes, creating harbors, and opening vast mineral resources, the economy of other nations can be improved in a way that no amount of United States dollars can equal. In addition, the use of nuclear explosives for purely scientific purposes can achieve conditions not available by any other means. Studies of nuclear structure, and in particular the formation of transplutonic nuclides, have generated intense interest, are clearly feasible, and can be performed within the next few years.

Unfortunately, the design of nuclear explosives appropriate for application to Plowshare projects is not yet complete. For this reason the details desirable for inclusion in the treaty depend in a major way on the opportunity to test before the treaty is placed into effect. To provide a feeling for the status and anticipated progress in the explosives and associated Plowshare program, it is necessary to provide some expansion on these areas.

Progress in the Plowshare program is currently paced by the development of special nuclear explosives, in particular those which produce a minimum of radioactivity and those which produce transplutonic nuclides. Without such explosives, no sensible program is possible. Their development requires test yields from 50 kilotons to 1 megaton at the rate of about five per year for the next two

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to four years. These tests are technically not distinguishable from those conducted for the development of advanced warheads. With the continued testing, we expect to have some designs within two to three years which could be developed and stockpiled for Plowshare use. The detailed engineering necessary to permit stockpiling for Plowshare of these devices would require an additional three years, assuming a nominal effort.

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Within the next two years we expect to have available one or two types of devices which can be used for Plowshare purposes. This involves the detonation of single and multiple nuclear explosives in the range of 50 kilotons to several megatons, to (1) determine the fate of the debris and our ability to control it, (2) determine the hydrodynamics of the medium, including the effect of different media and emplacements, and (3) demonstrate the feasibility and safety of various projects.

It is clear from the above that a minimum of two years is required to make available an appropriate Plowshare device, and it will be about three years from now before we can perform practical demonstrations. To demonstrate that we are in fact using nuclear explosives for peaceful purposes, we must move large masses of earth and thus use yields in the range of 50 kilotons to 1 megaton. The use of smaller yields will not be demonstrably more efficient than conventional means of excavation. The detonation of any nuclear explosive under a treaty will surely bring considerable political heat. This heat may be tolerable only if the explosives produce a clearly useful product.

If testing can continue for three years before a treaty is put into effect, a Plowshare program could be carried on and produce the major advantages outlined above if the treaty contains the following provisions:

1. No devices are disclosed.

2. Production of devices and replacement of tritium is permitted.

3. There is no restriction on yields other than those imposed by the operational requirements.

If a treaty is put into effect within the next two years, we believe it is important to make provisions which permit the development of appropriate explosives and experiments on cratering systematics. This could be achieved with five experiments per year

involving individual yields up to, say, 50 kilotons. In experiments using multiple explosives, a total yield of several hundred kilotons would be required.

It has been suggested that Plowshare devices might be disclosed to the Soviets. However, since advanced thermonuclear designs are required for Plowshare, this could only be done if one were sure that the Soviets' state of the art is well advanced. However, we do not have firm information on Soviet development, and since we do not wish to add to the Soviet weapons effort, this approach is not recommended.

The Laboratory recommends that efforts continue on the inclusion into possible treaties provisions as outlined above for the necessary development of special explosives, cratering experiments, and useful applications.

Very sincerely,

John Foster

John S. Foster, Jr.
Director
LRL, Livermore

JF/hb

Copy 1A - G. Seaborg
2A - Gen. Betts
3A - G. Kavanagh
4A - J. Kelly
5A - A. Luedecke
6A - E. Shute
7A - J. Foster

[redacted]

See 5, 632

[redacted]

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This document consists of 1 page. No. 27 of 100 copies.

Series A.

UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY

MEETING OF THE COMMITTEE OF PRINCIPALS

Friday, June 14, 1963, at 4:30 p.m.
Secretary of State's Conference Room

ACTION TAKEN ON AGENDA ITEMS

1. General discussion of the adequacy of the text and the timing of the tabling of the test ban treaty at Geneva.

No objections were raised to the provisions of the draft treaty other than Annex II (Explosions for Peaceful Uses) except by General Taylor. He expressed the view of the Joint Chiefs of Staff that the treaty would permit clandestine testing below a threshold and would fail to fix responsibility for tests above the threshold.

Secretary McNamara asked that the Committee of Principals not give its final approval to the treaty draft at this meeting, and the Committee did not do so. It was agreed the text of the draft treaty was not needed for tabling before July 15th at the earliest. Secretary Rusk and Mr. Foster expressed the view that the text might be necessary for the Harriman mission.

2. Explosions for Peaceful Uses

The Committee did not resolve the differences between its members over Annex II (Explosions for Peaceful Uses).

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UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY

MEMORANDUM OF CONVERSATION

DATE: June 14, 1963
4:30 p.m.

SUBJECT: Nuclear Test Ban Treaty
Meeting of Committee of Principals

PARTICIPANTS: See attached list

COPIES TO: See attached list

Secretary Rusk opened the meeting by asking Mr. Foster to suggest the points to be discussed. Mr. Foster summarized the last meeting. He indicated that the issue of nuclear explosions for peaceful purposes had been left open and that Secretary McNamara had requested another meeting to discuss the treaty generally.

Mr. Foster also said that the negotiating situation had changed considerably since the last meeting. A mission to Moscow was now planned. He thought that the treaty should be available for use on that mission if necessary. The draft was generally agreed to among agencies except for the peaceful uses annex.

Secretary Rusk said that the Harriman mission was not based on indications that the Soviets were prepared to move toward the kind of treaty we wanted. Khrushchev has recently reiterated that national systems are adequate and that inspection is a form of espionage. The President feels the mission should be made because this may be our last chance to avoid a larger and more difficult arms race. In 10 or 20 years it will be important that the U.S. made as great an effort as possible to achieve a test ban. Secretary Rusk

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* Lt. ACDA, Smith to DOE, OC, Gilbert 5/2/88
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said that failure of the mission would be unfortunate but that it would also be wrong not to make the effort. He was under no illusions as to the prospects. He said that the mission should go prepared to move on the test ban treaty which we could in good faith accept. The Soviets were worried by bloc problems and there was some possibility of change in their position. Our mission should have a treaty in hand for use if necessary.

Secretary McNamara said he had mixed feelings about achieving a firm Government position on the draft treaty. He said that if we had a fixed position before Congress and the people, we might develop arguments which would restrict negotiations on alternatives. He pointed out that the Joint Chiefs would testify before the Stennis Committee in the latter part of this month. He hoped that their testimony would not have to be related to a specific treaty draft. If the draft treaty became an approved Government position, the Chiefs would have to testify against that position. If the draft treaty was left as one alternative, they might be able to say that they supported a test ban provided it was effective in detecting clandestine violations.

General Taylor summarized the Joint Chiefs' comments on the May 24 draft test ban treaty as follows: (1) the Soviets could conduct clandestine tests if the treaty were adopted; (2) the draft treaty did not provide adequate opportunity to fix responsibility for evasion; and (3) the treaty as now drafted was not in the national security interest of the United States.

General Taylor said that the Chiefs did not look forward to appearing before the Stennis Committee because that would bring out the conflict within the Government. He thought that Secretary McNamara's alternative would be better than approving the draft treaty as written.

Secretary McNamara said that the Chiefs saw two major defects in the draft treaty: (1) testing could be conducted

below a threshold without detection; and (2) testing might be conducted above the threshold without detection or without the fixing of responsibility for the tests. The Chiefs, he said, believe that the tactical and strategic balance of power might be shifted in favor of the Soviet Union if the present draft treaty were adopted. Secretary McNamara felt it would take a long series of technical discussions before these issues could be resolved. He would hate to see the draft treaty approved before it was really necessary to do so.

Secretary Rusk asked whether the Chiefs had ever expressed themselves on a ban on atmospheric tests. General Taylor said they had not done so formally. However, he thought such a ban would be better than an inadequate comprehensive test ban treaty.

Mr. Foster said that the test ban position had been discussed for months and agreed factual and Governmental positions reached last summer and again in February. Secretary McNamara replied that the issues really hadn't been joined; the technical groups had not reached agreement; the tactical and strategic considerations had not been agreed upon. Mr. Foster felt that the kind of review suggested by Secretary McNamara would cause considerable undue delay. Secretary McNamara said that a great deal of progress had been made in the technical meetings preparing testimony for the Stennis Committee hearings. He had been trying to find out why people take the positions they do and, if they were wrong on their facts, to destroy their positions. Mr. Fisher said that the April 1 US-UK memorandum given to the Soviet Union reflected a Governmental position approved by the President. It followed a White House meeting on February 18 and a cable of instructions to Geneva dated February 19. The treaty was simply an elaboration of these positions. He asked what was in the draft treaty that had not been covered by the April 1 memorandum which, he pointed out, had been approved by the Department of Defense. Secretary McNamara said he fully supported the draft treaty in its present form but other segments of the Government disagreed. Mr. McCone said he had never heard the Joint Chiefs take a position on the treaty at the Committee of Principals meetings. He pointed

out that the Stennis Committee would pin them down as to their position on the treaty. Mr. Chayes agreed with Mr. McCone. The staff of the Committee has a draft of the treaty he pointed out. In presentations to the Committee we have attempted to de-emphasize the details of the treaty. However, they have the April 1 memorandum. They will ask every witness what he thinks of the present U.S. position, and whether he thinks 7, 6 or 5 annual inspections are adequate.

General Taylor said the Chiefs had been asked by the Stennis Committee the following questions: (1) The extent to which the Chiefs were consulted by ACDA and DOD on test ban problems; (2) The extent to which the Chiefs' views were reflected in the U.S. position on the test ban; (3) The judgment of the Chiefs on the military consequences of specific proposals; and (4) The military implications of a test ban treaty.

Secretary McNamara asked again that a head-on collision be avoided if at all possible. He said he supported the draft treaty because he felt the U.S. was ahead of the Soviets and that continued testing would produce equality. The Chiefs, however, disagree. The facts are very technical. It is essential that the experts supporting the conflicting views sit down together in the same room and reach, if possible, an agreed position. He pointed out that the AEC lab directors had made statements concerning the technical facts which made it impossible for the Chiefs to take opposing views since they relied heavily on the lab directors. Secretary Rusk agreed that we should avoid a controversy if possible. He didn't quite understand the Chiefs' position however. He said he would not feel free to take a foreign policy position that disagreed from that of the President. Secretary McNamara replied that there was a clause in the law which said the Chiefs had the right to appear before Congress to give their own views. He indicated that this law had been interpreted by the Congress as meaning that the Chiefs are required to give their personal opinions when asked.

General Taylor said he would be happy if the President said that the Chiefs' views were privileged because the Chiefs were his personal advisers. General Taylor felt that this was not practical however. Mr. Fisher referred again to the April 1 memorandum and to the agreed positions taken then and earlier. Secretary McNamara felt that we had to deal with today and tomorrow, and with our position before Congress, and not with positions agreed to in the past. Dr. Wiesner agreed. He also pointed out that the laboratory directors are not in a position to judge the overall policy considerations.

Mr. Fisher asked whether we were going to withdraw the positions we had taken at Geneva and elsewhere. Mr. McCone said he saw no purpose in discussing the draft treaty and that he hadn't realized that this was the purpose of the meeting. General Taylor asked whether it was possible to reopen past positions in view of the Harriman mission. He said he would hate to see the newspapers reporting that the Chiefs opposed a test ban treaty while Governor Harriman was in Moscow. Dr. Wiesner indicated that Harriman had to be able to have a maximum of flexibility.

Secretary Rusk doubted that further discussion could resolve these issues. He thought that the technical people would never come to agreement. Mr. Nitze said that a great deal of progress had been made in the four committees preparing testimony for the Stennis Committee. Secretary McNamara said he did not want to be faced again with statements from the laboratory directors saying our warheads could not penetrate Soviet targets unless further tests could be conducted to ascertain and correct defects. He referred to statements by Mr. Henderson of Sandia and Dr. Foster of Livermore. Since the Chiefs relied on them for technical advice, it was difficult to expect the Chiefs to take a different position. General Taylor indicated that one of the AEC laboratories had said that 80% of the testing which would be desirable for the Soviet Union to conduct could be done clandestinely without detection by us. Mr. Nitze felt that some of these statements were true.

Secretary McNamara referred to the Twining Report which had been requested by Senator Symington. Teller, John Foster, Twining, Dolittle and others had signed the report which was full of this kind of technical argument. Secretary Rusk said that he didn't think Teller was talking as a technical man when he talked about the test ban.

General Taylor said that the Chiefs were conscientious men who were sincerely concerned about our national security. He would welcome Mr. Foster and his experts to a meeting with the Chiefs and to tell them why they were wrong. Mr. Foster accepted the invitation.

Secretary McNamara said again that a great many things had to be thrashed out and he hoped we could avoid recertifying this draft. Secretary Rusk asked whether there was anything in the draft which had not been approved in substance by the President except for the Plowshare Annex. Mr. Fisher said there was nothing and he referred again to the February 18 meeting and the April 1 memorandum. Secretary McNamara said there was no question about the President's position or the support of the Department of Defense but the JCS did have reservations. Secretary Rusk felt that the basic position on the test ban had been approved by the President and that Governor Harriman could enter into talks on the basis of this position. If this position was to be changed, the initiative to seek such a change had better be taken by those who wanted the change. Secretary McNamara replied that he hoped that Harriman could avoid taking the treaty to Moscow for tabling.

Secretary Rusk said the treaty simply reflects the present U.S. position. Unless this position is changed by the President, it would be the position taken by Harriman. He thought it consistent with all the interests of the United States, including the national security interest. In his view, it was not a question of having an approved position. The question being discussed was how best to handle discussions with the Congress on the U.S. position.

Secretary McNamara expressed again the hope that the Committee of Principals would not be asked again to recertify the treaty at this time. Mr. Foster said that it might well be advantageous to have an approved treaty draft for Governor Harriman's use. Secretary McNamara asked whether there was any intention to table the draft treaty before July 15, to which Mr. Foster replied in the negative. Secretary McNamara hoped the Committee could leave it at that. Next week, he said, he would like to see the lab directors, the White House experts, and the other experts in the Government all get together in the same room to resolve issues and bring the past agreed positions up to date.

Mr. Kaysen felt that Secretary McNamara was raising a tactical question: Is it necessary to table a draft now? In view of the Congressional problem, Secretary McNamara felt that it was better not to do so. Mr. Kaysen concluded that discussion with the Congress of the basis for the Harriman negotiations should be avoided if possible.

Mr. Foster said that, in an attempt to put off the hearings, he had told Senator Stennis that no treaty had been agreed to with the Soviets and that if one was, the issue before the Senate would be quite different. Senator Stennis had said that it was, nevertheless, impossible to stop the hearings but that he would try to slow down the pace. Mr. Nitze stated that an argument in support of the test ban treaty on national security grounds alone was very difficult to sustain. However, there were good foreign policy grounds to support the treaty. Secretary Rusk replied that the Members of the Committee had all agreed, he thought, that the risks to national security from an unlimited arms race outweighed the risks inherent in a test ban treaty. Dr. Wiesner suggested that this general discussion be followed up next week and thereafter with technical discussions.

Secretary Rusk opened the discussion of the Peaceful Uses Annex by asking whether the choice was not between a test ban

and Plowshare, assuming a treaty could be secured. He did not see how you could do both peaceful uses explosions and have a significant test ban treaty. He wondered whether it would be practical to have the Soviets conduct our Plowshare experiments while we conducted theirs.

Chairman Seaborg said that if Plowshare experiments could only be conducted by revelation of the device then few experiments would be carried out. He thought, however, that it was possible to devise ways of doing both.

Secretary McNamara asked whether the AEC proposal was unacceptable to the Soviets or to the United States. Secretary Rusk asked how much information could be gotten about weapons tests from debris. Chairman Seaborg said not as much as with disclosure of device. Dr. Wiesner said not as much but enough. Chairman Seaborg agreed you could learn something about weapons from debris. Dr. Wiesner indicated that the AEC proposal would permit the testing of any kind of weapon. Mr. Fisher answered Secretary McNamara's earlier question by saying that the AEC proposal was unacceptable to both the U.S. and the Soviets.

Dr. Wiesner pointed out that there was no clear cut distinction between experiments leading to better weapons and experiments leading to better explosives for peaceful uses. Mr. Nitze thought the risk to the United States was not greater from the AEC proposal than from existing U.S. position. Secretary Rusk asked how much testing was necessary before Plowshare explosives could be developed. Chairman Seaborg said some tests would be necessary to develop these clean weapons.

Secretary Rusk asked whether it was possible to use a new clean device developed just for Plowshare. Chairman Seaborg replied that the clean device needed for Plowshare would have in it much of the weapons information that the weaponeers didn't want to reveal. Secretary McNamara pointed out that under the AEC proposal we would be informed of each Plowshare test. However, he said we don't know about

clandestine cheating by the Soviets. Dr. Wiesner pointed out that the AEC proposal was really an acceptance of Congressman Hosmer's suggestion that 12 free tests be permitted on each side each year. Mr. Fisher thought it would be equally as difficult to negotiate the AEC proposal as the Hosmer suggestion.

Mr. Nitze said that the main purpose of a test ban treaty was as a first step in inhibiting the diffusion of nuclear weapons to other countries. If the test ban treaty had the AEC proposal in it, there would be good reason to have it coupled with a non-diffusion agreement.

Mr. Keeny asked whether the small AEC quota and limit on yield would allow full Plowshare development. Chairman Seaborg indicated that these limits would slow the program down but, nevertheless, permit its continued growth. He felt that it might be possible to put Plowshare devices in a central depository in five years but it was not possible to do so now.

Secretary Rusk asked whether the Plowshare program was based on the proposition that certain tasks could be done more cheaply by nuclear explosions. Chairman Seaborg replied that this was so but in some cases the cost was so high without nuclear explosives as to be prohibitive. Secretary Rusk said that if Plowshare was the only obstacle to a test ban treaty, the cost would probably be negligible in comparison with the millions which would otherwise go into the competitive arms race. Chairman Seaborg said that if this was the one thing that prevented the treaty, he might agree with Secretary Rusk.

Mr. Keeny pointed out that the Soviets had in the past been adamant against any other position than disclosure of the device. Mr. Foster referred to the Soviet agreement to the present U.S. position calling for such disclosure which was reflected in the April 18, 1961 draft treaty. Mr. Keeny said that the U.S. had proposed limits on instrumentations in the past but the Soviet had not agreed. Dr. Wiesner

thought it would be very disturbing to the negotiations to take a new position on this problem.

Chairman Seaborg believed that this would not become an issue in the negotiations for some time. Secretary Rusk asked whether there weren't explosive devides which could be used for Plowshare and which could be revealed without danger to our security. Chairman Seaborg said no. Dr. Long indicated that four years ago there were thought to be such devices. Chairman Seaborg said this was not true today. The fallout, the cost, and a more realistic and careful look had changed his views of the matter.

Secretary Rusk asked again how much additional testing would be necessary before the Plowshare program could begin carrying out the tasks for which it was intended. Chairman Seaborg said that there was a four-year program to develop devices to build a new canal across the Isthmus of Panama. Mr. Kelly thought these devices would be ready in two years. Mr. Keeny thought that building a Panama Canal, which would require dozens or hundreds of shots, would be wholly inconsistent with a test ban treaty if one were in effect then. Chairman Seaborg thought that perhaps even the Soviets would not object if the development goes as the AEC hopes.

Mr. Foster thought that the Committee would not gain much by further discussion on this point at this time.

Attachment:

List of Participants.

[redacted]

PARTICIPANTS

Department of State

The Secretary of State, Chairman
Mr. Abram Chayes
Mr. Raymond A. Garthoff

ACDA

Mr. William C. Foster, Director
Mr. Adrian S. Fisher, Deputy Director
Dr. Franklin A. Long, Asst. Director, Science & Technology
Mr. George Bunn, Reporting Officer

White House

Dr. Jerome Wiesner, Special Assistant to the President for Science and Technology
Mr. Carl Kaysen, Deputy Special Assistant to the President for National Security Affairs
Mr. Spurgeon Keeny, Office of the Special Assistant to the President for Science and Technology

Department of Defense

Mr. Robert S. McNamara, Secretary
Mr. Paul H. Nitze, Assistant Secretary of Defense for International Security Affairs
Mr. Arthur Barber, Deputy Assistant Secretary of Defense for International Security Affairs (Arms Control)
General Maxwell Taylor, U.S.A., Chairman, Joint Chiefs of Staff
Major General Dale O. Smith, U.S.A.F., Special Assistant for Arms Control, Joint Chiefs of Staff
Captain Elmo Zumwalt, U.S.N., Office of the Deputy Assistant Secretary of Defense for International Security Affairs (Arms Control)
Commander Edward C. Kline, U.S.N., Office of the Deputy Assistant Secretary of Defense for International Security Affairs (Arms Control)

[redacted]

PARTICIPANTS

Atomic Energy Commission

Dr. Glenn T. Seaborg, Chairman
Dr. Leland J. Haworth, Commissioner
Dr. George M. Kavanagh, Assistant to the General Manager for Disarmament
Mr. John S. Kelly, Director, Division of Peaceful Nuclear Explosives

Central Intelligence Agency

Mr. John A. McCone, Director of Central Intelligence

USIA

Mr. Donald M. Wilson, Acting Director

NASA

Mr. John A. Johnson, General Counsel

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CHAIRMAN

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From 11:35 a.m. to 12:15 p.m. I attended a meeting in the Cabinet Room of the White House. Present were: the President, Foster, Rusk, Ball, Harriman, McCone, Wiesner, Thompson, Fisher, ~~myself,~~ Haworth, Bundy, Kaysen, Nitze, Gilpatric, ~~and~~ McNamara and I. Rusk opened the meeting, calling on Foster who summarized the contents of his memorandum ACDA-921 ~~(copy attached)~~ The President referred to an article in the "Economist" and inquired whether the British had changed their mind on the need for onsite inspections. Foster said that the best British scientists agree on the necessity for these. The President asked whether we have an agreed-upon paper with the U.K. on this matter, and McNamara replied that we don't have an agreed-upon paper in the U. S. on our position, including what can be accomplished by clandestine testing. Bundy said that this problem will be somewhat clarified as the result of Frank Long's forthcoming meeting with UK scientists. McNamara said that position papers should be available soon.

The President asked whether Harriman and Quintin Hailsham, the British Minister, would be getting together, and Harriman said they would meet a day or two before they leave for Moscow.

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J. Diaz 3/26/90
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* 2 ltrs. DOS (2/19/89) & NSC (5/26/89)
to DOE, OCTP.
Kahn 7/2/90

[redacted]

The President said we should have a summary of what the Russians could accomplish in about five to seven years in clandestine underground testing. Bundy said that Penney has written a paper on the subject and concluded that this could not lead to a change in the strategic balance. McNamara said that their position papers will be ready by the middle of next week. Nitze said that the degree of importance of clandestine testing depends upon what you mean by the term "strategic balance." Harriman made the observation that this whole question is a major political problem for Khrushchev and one of his (Harriman's) objectives should be to try to identify that problem.

Foster raised the question of whether Harriman shouldn't introduce the idea of a limit on the number and yield of underground tests. Bundy pointed out that Hosmer favors this and that this has political appeal in the U. S.

The President asked how we might handle the discussion with respect to the Chinese. Foster indicated that if we could get together with the USSR, the Chinese could be handled, DELETED DELETED Bundy agreed that the Russians may insist to the Chinese that they desist from their nuclear weapons development.

The President asked whether Frank Long would be available for consultations with him (the President) when he arrives in England, and he was assured that Long would be.

Foster then went on to talk about non-proliferation of weapons. The President raised the possibility of the US giving up the MLF concept. Bundy felt that this should be kept alive as a bargaining point, and Rusk pointed out that this involves the Allies so deeply that it shouldn't be considered as a possible position at this time. He, therefore, made some changes in the draft ACDA-921 to reflect this.

The President inquired as to what the objection to the non-agression pact sought by the Russians might be, and Rusk replied that we would need the assurance that the Berlin situation remain status quo before we could consider such an approach. I called attention to the very significant and important vote of the Soviets for safeguards for nuclear power reactors at the meeting of the Board of Governors of the IAEA in Vienna yesterday. I said that this reverses the position that they previously had against safeguards, which was a very strong one.

Pertinent but not cited, 6, 19

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[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

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*Ltr. Use Grebasice To DOE, OCTT
Siebert dated 2/8/89
John 3/3/89

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915150

Dear Mr. President:

In accordance with National Security Action Memorandum No. 245, dated May 21, 1963, "High Yield Nuclear Weapons", the Department of Defense and the Atomic Energy Commission herewith transmit for your consideration a study on the development, both with and without atmospheric testing, of high yield nuclear weapons for delivery by presently programmed delivery vehicles. In addition, the study includes consideration of the development of high yield nuclear weapons for missile systems which could be, but are not now, programmed in the time period 1967-1970.

Of course we recognize that the limited test ban treaty currently under consideration will have an important impact on our ability to develop very high yield nuclear weapons. The extent of this impact is indicated in the enclosed study. It must be accepted, however, that the question of further high yield development continues to be germane. In the course of achieving atmospheric test readiness, we must consider whether or not we ought to pursue very high yield technology even though it may now be our position that there is no specific requirement for a very high yield warhead.

The study shows the AEC can make significant improvements in the yield to weight ratios of high yield nuclear weapons for various delivery systems if later circumstances dictate resumption of testing in the atmosphere. For example, for an improved MINUTEMAN missile system, the AEC could provide a maximum yield warhead of from [redacted] without tests, and about [redacted] with tests. Some improvement in the [redacted] yield would probably be possible with continued underground testing; however, the obtainable yield would be significantly short of the indicated [redacted] Similar improvements in the yields of other programmed and possible weapons systems could be achieved with further atmospheric testing. These potential higher yields would offer some targeting advantages or, conversely, the higher yield per pound of warhead weight would enable the United States to utilize a portion of the allowable payload for penetration aids and warhead hardening.

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The AEC high yield nuclear weapons program now includes theoretical studies directed toward improving designs tested during the last atmospheric test series, as well as exploring new high yield design concepts. In addition, certain underground tests at the Nevada Test Site will be directed toward answering some problems of high yield design. These studies and tests are now directed toward a readiness to test high yield devices in the atmosphere in late 1964. In this connection, the AEC has now reached a point in time by which the drop testing of large ballistic shapes in the very near future is needed if we are to provide data necessary to attain a readiness to conduct a high yield test program on the current schedule. The Commission recommends that authority be granted to proceed with such a drop program to determine aerodynamic characteristics for high yield nuclear test devices so that the planned readiness may be achieved.

Respectfully yours,

Secretary of Defense

Chairman, Atomic Energy Commission

The President
The White House

Enclosure:
Cy 1A&2A AEC-DOD High Yield Study

1A&2A: President w/1A&2A encl.
3A&4A: McNamara w/3A&4A encl.
5A&6A: Chairman w/5A&6A encl.
7A: GM w/7A encl.
8A: Palfrey w/8A encl.
9A: Ramey w/9A encl.
10A: Tape w/10A encl.
11A: Wilson w/11A encl.
12A&13A: Sec'y w/ 12A&13A encl.
14A: Test Br. w/14A encl.
15A: DMA File w/15A encl.
16A: R&D Rdr w/16A encl.
17A: Reader w/o
18A: Locator w/o
19A: R&D Pending w/17A encl.
20A: Dir Off w/18A encl.

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915184

ESTIMATED U.S. CAPABILITIES FOR THE DEVELOPMENT, PRODUCTION AND UTILIZATION OF HIGH YIELD WEAPONS FOR THE PERIOD 1967-1970

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REVIEWED BY [redacted] DATE: 3/1/89
* Ltr. NSC Grabosice To DOE, OCTP Siebert dated 2/8/89.
Sahw 3/3/89

Introduction

This study presents a discussion of the following areas:

a. The developmental program underway within the Atomic Energy Commission to provide high yield weapons [redacted] D[redacted] compatible with the weapon systems programmed (or capable of being programmed) for the period 1967-1970.

b. The development of these high yield weapons with and without atmospheric tests.

c. The possible employment of and requirements for high yield systems.

For convenience, a summary chart is presented that relates nuclear capabilities, both with and without atmospheric tests, to the delivery systems.

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Discussion

Initially it should be noted that the AEC has not been presented with a formal military requirement (Phase III) for a high yield nuclear weapon. Conclusions as to AEC capabilities in this regard are based on studies, extrapolations from present conventional designs and a few tests during Operation DOMINIC in 1962 directed toward a capability of designing high yield to weight warheads to meet possible future military requirements. The preliminary success of the DOMINIC devices has created additional and alternate design concepts to provide advanced high yield warheads.

Most of the advanced high yield concepts are new; therefore, AEC cannot have high confidence in its projected goals without a series of atmospheric tests. Continued underground tests will certainly contribute to a reasonable confidence level that the goals would be as a minimum those shown without tests, but significantly short of those shown with tests. At the end of this report is a summary chart of what the AEC considers to be the yields attainable for those systems which could be programmed for the 1967-1970 period. Although this chart completely summarizes the AEC's projections, a few general comments may be appropriate.

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[redacted]

In general, with respect to each missile contained in the chart, the dimensions do not appear to be limiting. Without testing, i.e., using the present state-of-the-art with conservative extrapolations, which in turn implies devices based on scaled-up versions of tested designs, at the low end of the weight range (7,000 lbs. for TITAN II), AEC expects that a yield of about [redacted] should be available, and should be about [redacted] in the 25,000 lb. warhead weight range. The actual yields would not be well known without testing; however, a range within about 25% of the estimated yield could probably be assured.

With atmospheric testing each year, commencing in late 1964 and continuing through calendar year 1966, at which time (if not before) designs would have to be firm for stockpiling in the 1967-1970 time period, the yield per lb. could probably be raised to about [redacted] in the 7,000 lb. TITAN II warhead weight, to about [redacted] at the 12,000 lbs. warhead weight, and to [redacted] for the 25,000 lbs. warhead weight range.

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With only underground testing, it is possible at this time to make only general statements as to improvements which can be achieved in yield-to-weight ratios for high yield weapons. Additional test experience and study are required. Underground tests up to about 1 MT can provide [redacted] tests and some types of fuel efficiency tests for large yield devices. However, without the opportunity to test at near full yield, it is necessary to take the conservative approach in all features of the design that are not directly tested. An intrinsically high yield-to-weight design such as [redacted] is rapidly degraded to lower yield-to-weight when various portions must be designed conservatively. The high yield-to-weight designs require test programs to push the state-of-the-art into regions where calculations leave considerable uncertainties, but where diagnosis of the main stage fuel burn would confirm successful design. This implies full yield tests of at least some examples for normalization, plus close to full yield tests for semiproof test of any specific design. Therefore, as stated earlier, the yields attainable with underground testing but without atmospheric testing will be somewhat higher than those with a no test situation, but certainly less than those we could probably attain with atmospheric tests.

The AEC believes that any one weight class would require at least [redacted] air bursts in the Pacific area per year preceded by [redacted] underground tests at Nevada. The air bursts should probably be considered to be an approximate full yield although some might be carried out at a partial yield. The device concepts will certainly be [redacted] Variations of the DOMINIC design will probably be employed. The yields will be expected to be about [redacted]

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[redacted]

It should be noted that in attempting to estimate the gains possible in yield per lb., no allowance has been made for the use of weight for the specific purpose of hardening the warhead beyond the levels required to meet the missile environment. Being very large, these high yield warheads cannot be expected to be as rugged as is possible with smaller items such as the MK-56 or MK-59 warheads. Also, the values of the re-entry g-loadings cannot be precisely predicted. It is expected that the MK-53 warhead for TITAN II, which appears capable of withstanding about [redacted] is indicative of the general sort of ruggedness which is readily obtainable. As usual, greater hardness can only be accomplished by devoting weight to this purpose at some cost in yield per lb.

The laydown bomb for the B-52 is in a separate category because of the fact that its diameter is limited to about 70 inches. Without testing, but scaling from a tested device such as the TX-41, the weight of the bomb would be about 30,000 lbs. and yield about [redacted] With testing and at the same bomb diameter, but with increased length and weight (perhaps 35,000 lbs.), this yield could probably be increased to [redacted]

In the absence of specific warhead/re-entry vehicle designs a general assumption was made that 90% of the total missile payload would be available for the warhead. Depending upon the particular system, and also whether re-entry is required, there could possibly be significant variations in the assumed 90%.

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AEC research and development costs are presented in the summary chart and are divided into hardware procurements and in-house laboratory effort. The total research and development costs vary between about 40 and 50 million dollars depending upon the device. Nuclear test costs are also presented using as a basis an estimate of 5 million dollars per atmospheric and 1 million dollars per underground test.

From the AEC standpoint, the earliest high yield weapon capability could be provided in the form of a high yield bomb capable of delivery by a drone aircraft. Since aircraft crew escape would not be a consideration, the many difficult design problems associated with a laydown bomb could be avoided. First production units of such a design could be available in less than 3 years. Obviously this approach presents problems to the DOD, such as reliability of delivery, etc. A missile warhead based on an existing nuclear design (like the MK-41) could probably be made available in 2 to 3 years. A missile warhead based on a new nuclear design could be made available in 3 to 4 years, with a laydown bomb version requiring a somewhat longer time.

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[redacted]

In summary, although the AEC considers this report to reflect the best estimate of the situation, because of lack of test experience the developmental costs as well as delivery dates of warheads should not be considered firm. The AEC and DOD are preparing plans to establish an atmospheric test series readiness time in mid-1964. A test of a high yield device could take place before the end of calendar year 1964 if the AEC were directed in mid-1964 to resume atmospheric tests. If such a series were to take place in late 1964, the AEC would commence to demonstrate the concepts which would provide the greatest capability in the development of high yield weapons. At the completion of the 1964 test series, a more detailed and definitive report could be made available.

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	(lbs)	Yield (MT) W/O Tests 5/	Yield (MT) W/Tests	Remarks	R&D Costs (Millions) 7/ W/O Tests	R&D Costs (Millions) 7/ W/Tests	Weapon Production W/O Tests	Weapon Production W/Tests	(Millions)
I. Existing Weapon Systems									
B-52 Aircraft	35,000				50	50			15 8/ 232
TITAN II Missile	8,000 2/ 3/			Currently 54 individual silos, hardened and dispersed	40	50			30 9/
II. Possible Weapon Systems									
Improved MINUTEMAN	12,500 2/			Possible system	40	50			30 9/
New ICBM	23,700 2/			Possible system	40	50			40 10/
ATLAS MK-II	18,650 2/	DELETED		Possible systems -- could be retrofitted into 72 individual and dispersed holes of basic missile	40	50	DELETED		40 10/
ATLAS F (Fluorine)	12,000 2/			Same as basic missile except fluorine -- oxygen engine	40	50			40 10/
TITAN II A	17,000 2/			Possible system -- could be retrofitted into 54 individual silos hardened and dispersed	40	50			40 10/
TITAN III	27,800 4/ 35,000 2/			Currently under development for space booster application only	50 50	60 60			40 10/ 40 10/

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1/ For missiles the warhead weight considered as 90% of payload

2/ [redacted] DELETED

3/ Advanced propulsion technology

4/ [redacted]

5/ The yield values listed in this column assume no underground test. Continued underground tests would result in yields somewhat higher than these values but significantly short of those shown under the W/Tests column.

6/ Dr. Bradbury indicated during testimony before the Stennis Subcommittee that for a 10,000 pound warhead that could be carried by the TITAN II missile it might be possible eventually to obtain [redacted] with continued underground testing. DELETED

7/ R&D costs include both hardware procurements and the effort of existing laboratory personnel that would be involved in the high yield program

8/ 2 airbursts + 4 underground - 1 test series

9/ 4 airbursts + 8 underground - 2 test series

10/ 6 airbursts + 10 underground - 3 test series

[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

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Chr USAEC, 1961-72
FOLDER-PAGE 33065

DE 9-14-63

SEP 14 1963

Commission reply to DOD request for concurrence on [redacted] NSAM 143 Action 90217

Dear Ros:

This is in answer to the letter of September 4, 1963, from the Assistant to the Secretary of Defense (Atomic Energy) requesting coordination on a proposed memorandum for the President concerning additional dispersal authority.

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The Commission, pursuant to National Security Action Memorandum (NSAM) 197, our joint letter of September 22, 1962, to Mr. Bundy, and Mr. Kaysen's letter of October 23, 1962, has considered the aspects of the proposed dispersal, particularly those concerning safety and the security of Restricted Data in weapons dispersed in support of non-U.S. forces.

The Commission has no objection to the proposed action and concurs in the proposed memorandum for the President with the understanding that security arrangements will be employed which adequately safeguard Restricted Data in the dispersed weapons, particularly against radiography. The Commission, therefore, would expect to participate with the Department of Defense in surveying the security arrangements [redacted]

It is understood that sufficient [redacted] are available in the theatre to fulfill this requirement.

Sincerely,

(Signed) Glenn T. Seaborg

Chairman

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NSC Memo, Grabpske to DOE, OCTP, 9/18/89
John 11/22/89

Honorable Roswell L. Gilpatric
Deputy Secretary of Defense

cc: The Honorable Dean Rusk
Secretary of State

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OCT 2 1963

915136

Dear Manson:

We appreciate receiving the Committee's letter of July 24 reporting on its 85th meeting at the Argonne National Laboratory. Our comments on the matters discussed in your letter are as follows:

(1) Production Cutback Problems

The weapons laboratories have indicated that some gains could be realized in going to designs using more plutonium than in those currently employed, subject to the limitations imposed by one-point safety considerations. Greater use of tritium would also increase some yields, and hence yield/weight ratios; however, it would be at the expense of a possible tritium-free system which is one objective of the "wooden bomb" concept. If plutonium becomes more abundant, then all-oralloy systems such as the MK-52 (designed during the plutonium shortage) or the primary for the Army LANCE could be redesigned in favor of a smaller, lighter warhead. Whether or not it would be economically desirable to seek changes in existing systems, however, remains to be seen. Both the AEC and the DoD are currently studying the economics involved in utilization of reactor products as a function of payload weight costs for possible application to future systems.

We support the suggestion made by the GAC regarding production of a respectable surplus of plutonium over present military requirements. With respect to the curtailment of plutonium production which is currently anticipated, we are actively pursuing how best to meet certain contingencies, such as possible additional requirements for new weapons systems and additional material requirements per weapon which may be forthcoming as a result of future technological advances in weapons performances and design. We believe it only prudent in an area where the technology is developing rapidly to include provisions for contingencies which could result in increased requirements.

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Additionally, current discussions with the DoD concerning numbers and types of weapons comprising the basic stockpile projected through FY 1972 include retention of some weapons types well beyond the average length of stockpile life experienced to date. It seems highly desirable to prepare for possible changes in these projections by producing a readily available reserve to meet unforeseen variations or additions to this basic weapons stockpile.

Experience has shown that we often face problems of weapons production related to such areas as plutonium purity and density, return of material from stockpile which must be purified by cycling through a wet chemistry process, and rejection of finished parts due to microcracking of the plutonium. The magnitude of problems encountered in such areas had direct bearing upon the amount of material required in inventory (pipeline). Long-range forecasts of material, such as the AEC's May and November Planning Estimates, include pipeline computations based upon minimum inventories required to support our weapons production schedule. However, as enumerated above, such inventories sometimes have to be supplemented when difficulties of the nature cited herein arise. In planning for a cutback of plutonium production, we intend to include provisions for such inventory fluctuations.

The Secretary of Defense sent a memorandum to the President on August 15, 1963, subject: "Nuclear Materials Production Program Through FY 1972," with his recommendations. On August 21, 1963, Acting Chairman Wilson sent a letter to the President in which he indicated that we will recommend a specific program to implement the new requirement totals in 60 days following receipt of the President's approval of a 1972 stockpile objective. This program will show what we regard as an optimum long-term production schedule to meet a stockpile requirement through FY 1972 and also provide a reasonable flexibility to meet unforeseen developments.

Accordingly, the schedule of reactor shutdown would be somewhat dependent on the capability to be maintained by the Commission to meet increased requirements for reactor products. With regard to the diffusion plants, as discussed with the Committee, the economics of their operation will play an important role in determining the extent of the shutdown as well as the facilities to be shutdown.

To minimize the impact at the various production sites, the AEC has been in contact with other Government agencies, such as DoD

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and NASA, to make known to these agencies the unique capabilities in existence at all of the production locations. In addition, we are exploring alternate uses of the production facilities which are not entirely dependent upon the weapons programs.

(2) Reactor Subcommittee Report

Our reactor development program planning is proceeding generally in accordance with the recommendations made by the GAC and its Reactor Subcommittee. The following specific comments are pertinent at this time:

(a) While the conversion ratio of 0.78 reported by GA for a 1000 Mwe HTGR operating with recycle of uranium is somewhat disappointing, we still believe that this concept has potential for a good utilization of thorium fuel resources. The current study uses a cost optimized fuel cycle based on current high fuel fabrication cost experience. This experience leads to heavy fuel loadings and high burn up at the expense of conversion ratio.

The purpose of the AEC TARGET study is to determine if improvement in this type of fuel can result in an economical fuel cycle with breeding or near breeding characteristics. One promising fuel approach is to use a lighter loading to improve eta, develop a simplified fuel design to lower reprocessing and refabricating costs and therefore permit shorter fuel cycles, and the use of BeO spines in the fuel elements to reduce neutron leakage and benefit from the n-2n reaction. This type of reactor is particularly well suited to the use of BeO because the most economical form (low density) can be used in the center of the fuel and there is a minimum requirement for radiation damage resistance. A fuel system incorporating such advances would have a conversion ratio near unity based on current calculations. In addition, further improvements may be possible. These include the use of blankets, throium control rods and "emitting" fuel which releases sufficient fission products to substantially depoison the core. The further advances, however, would require substantial extrapolations in technology or are high cost methods of obtaining added conversion.

(b) Studies are now in progress to explore the feasibility and desirability of using nichrome-clad fuel as proposed for 630A to provide ML-1 performance requirements. There was a misunderstanding regarding a 3% burn-up limitation of UO_2-BeO ML-1

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FOLDER-PAGE 034044

fuel. This is the limit of testing a prototype fuel element but not necessarily a real physical limitation. Test samples have achieved high burn-ups. Nevertheless, it is still true that the nichrome fuel has been tested to higher burn-ups at comparable or higher temperatures.

Program plans currently do not contemplate development of the HWMR on the basis that the anticipated advantages do not appear to justify the estimated cost of development. Studies of this and other ML-1 variations will continue.

We will provide the Committee with comments in the near future on its August 1963 Reactor Subcommittee report on Seed-and-blanket and heavy water reactor concepts.

(3) Maritime Reactor Program

A staff paper recommending a specific continuing program for development of nuclear power for maritime applications, including construction of a prototype 630A plant, should be scheduled for action by the Commission in the near future. The Maritime Administrator, on September 3, 1963, approved a position statement acknowledging the potential importance of nuclear power to the merchant marine and endorsing vigorous support of advanced nuclear power systems by the AEC. Steps are being taken now to solicit support of the Secretary of Commerce for this position.

(4) Fast Reactor Program

The staff is still hopeful that the EBR-II and Fermi reactors may be used for an expanded program of fast reactor fuel irradiation testing, including ceramic fuels, in a fast neutron flux. The point of possible inconsistency between fuels testing capability and target prototype plant construction schedules made by the GAC is a valid one. The fuels development program and irradiation testing requirements and possibilities are under intensive study at the present time. We agree with the comment that "the fast reactor program should be conducted in a logical fashion with all deliberate speed but in no sense on a crash basis."

(5) Argonne Program

University relations - We believe that the establishment by the University of Chicago of the ANL Review Committee for Educational Affairs will lead to further improvement of the ANL-AMU relationship. As the research program with the ZGS gets underway we will inform the Committee

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FOLDER-PAGE 034045

of University participation in this activity.

(6) MURA Accelerator

We note that the Committee was divided in its opinion regarding authorization of the MURA Accelerator and that the majority felt that there was not adequate justification at this time for approval of construction of this machine. With respect to the Commission's FY 1965 budget submission to the BoB we will be pleased to discuss the Commission's action on the MURA machine when we meet with you in October.

We note the concern of the General Advisory Committee with respect to carefully evaluating the requirement for each of the major steps recommended in the Panel's report, taking into account the need for expansion of Federal support for research in other areas. The Commission is also concerned about this very point.

(7) Joint GAC-ACBM Meeting

The Commission is pleased that the joint meeting with the Advisory Committee on Biology and Medicine was held and was profitable. Perhaps joint meetings with other AEC Advisory Committees could be held from time to time, for example, with the Computer Council. If you would like to do this, please let Dr. English know so that suitable arrangements can be made for a mutually convenient time and place.

(8) Forthcoming Meetings

We suggest the proposed agenda be modified as follows:

(a) The Division of Production's briefing on the gas centrifuge development program be postponed until your 87th meeting in order that the Committee may have the full benefit of the AEC program review currently underway. I understand that this change would be agreeable to the Committee.

(b) Dr. Poor would like to discuss with the Committee at its 87th meeting the results of the survey of educational

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FOLDER-PAGE 034044.6

programs conducted by AEC contractors as well as the related subject of the future course of nuclear science and engineering education programs at the AEC laboratories.

Sincerely,

(Signed) Glenn T. Seaborg

Chairman

Dr. Manson Benedict, Chairman
General Advisory Committee to the
U.S. Atomic Energy Commission

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)NTROL AND DISARMAMENT AGENCY

UNCL. BY DOE

MEETING OF THE COMMITTEE OF PRINCIPALS

Monday, November 18, 1963, at 5:00 p.m.
Situation Room, The White House

SUBJECT: French Nuclear Testing

PARTICIPANTS:

STATE DEPARTMENT
The Secretary of State, Chairman
Assistant Secretary William R. Tyler

ACDA
Mr. William C. Foster, Director
Mr. Adrian S. Fisher, Deputy Director

THE WHITE HOUSE
Mr. McGeorge Bundy, Special Assistant to the President
Dr. Jerome B. Wiesner, Special Assistant to the President

DEPARTMENT OF DEFENSE
Mr. William Bundy, Assistant Secretary for International Security Affairs

JOINT CHIEFS OF STAFF
General Maxwell D. Taylor, Chairman, Joint Chiefs of Staff

ATOMIC ENERGY COMMISSION
Dr. Glenn T. Seaborg, Chairman

CENTRAL INTELLIGENCE AGENCY
Lt. Gen. Marshall S. Carter, Acting Director

USIA
Mr. Donald Wilson, Deputy Director

DISTRIBUTION: Participants only

At Secretary Rusk's suggestion Mr. Foster started the meeting by outlining the contents of the November 12, 1963, memorandum which he sent to the Secretary of State. Mr. Foster distributed an alternate footnote to page 3, which placed a greater emphasis, than did the original footnote on page 3, on the possibility of proceeding under Section 144 (c) of the Atomic Energy Act. After the general discussion of the problem, a consensus was reached that the French would not be in a position to test a thermonuclear weapon until the end of 1967 or the early part of 1968 and that, although it would probably be possible to test a finished thermonuclear weapon designed to meet the French requirements underground, it was not at all certain whether the French were not proceeding in their technological development the same way the United States had, i.e., starting with a very large device which would not be tested underground and continuing with smaller thermonuclear devices in the neighborhood of 500 kt only after continued atmospheric testing. If this were the case, underground testing would not meet the needs of the French program. Even if it were not the case and the French program could be met by underground tests, it was the consensus of the group that the United States, to satisfy its obligations that a French test for which it made facilities available would not involve a treaty violation, would require us to obtain information and to impose controls on French activities which would not be acceptable to General DeGaulle.

After a lengthy discussion of the pros and cons of the matter, including a discussion of the British interest in the subject, Mr. Bundy summarized the conclusions of the meeting by indicating that we should advise the French through an appropriately informal channel that as we read President DeGaulle's last communication on the subject, he was not particularly interested in pursuing the matter further, that Sir David Ormsby Gore should be advised of his position through Mr. Bundy, and that any further exploration of the matter should wait President DeGaulle's anticipated visit.

The meeting adjourned at 6:00 p.m.

Approved: William C. Foster W.C.F.
Director, ACDA

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GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 037164.1

915254

JAN 15 1964

Dear Mac:

Attached is an analysis of Project Sulky which we have prepared in accordance with the provisions of [redacted]. Project Sulky is a Plowshare excavation experiment which we would like to conduct at the Nevada Test Site in late February 1964. The experiment can be conducted in three or four weeks after approval.

It is our opinion that this experiment is acceptable under the Limited Nuclear Weapon Test Ban Treaty. We have carefully reviewed with AEC and the DOD the applicable data and theory which is incorporated in the analysis. You will note from the analysis that the experiment is not without some theoretical risk of detection; however, we believe this risk is minimal. A number of detonations conducted since the Treaty became effective have released as much or more radioactivity than would be released from Project Sulky. Of course Project Sulky would be conducted for a different purpose, and the associated public announcement would identify it as a cratering detonation which obviously would involve the release of radioactivity.

Project Sulky represents about the smallest scale experiment from which useful cratering information can be obtained. Therefore, if we are to be able to continue a meaningful program to obtain data for nuclear excavation, a way must be found to carry out such experiments.

In addition to the data that would be obtained on cratering, the execution of Project Sulky would provide an opportunity to obtain much needed information on the diffusion and dispersion of radioactivity that reaches the atmosphere. The range of estimates in the attached analysis indicates the magnitude of the existing uncertainties. The ability to reduce these uncertainties would benefit several programs.

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J. Diaz

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 0371642

In this connection, it is important to remember that during the Treaty ratification process the impression was left that meaningful excavation experiments could be conducted without violating the Treaty. For example, I said:

> "Our present considerations lead us to believe that excavation experiments or projects which have a downwind distance of several hundred miles from the project site to a territorial limit probably can be conducted, and that these experiments will be sufficient to develop the excavation technology."

On the basis of this and other testimony, the Senate Foreign Relations Committee stated to the Congress its understanding that "The Plowshare program, ..., will not be seriously inhibited by the Treaty."

It is our conviction that we are on the threshold of being able to apply nuclear excavation in many important and useful projects. However, our ability to carry out such projects is directly related to our ability to carry out the necessary experiments to obtain the additional data needed to design and execute them.

I recommend that the proposed experiment be reviewed by the Committee established by [redacted] and submitted to the President for his decision in accordance with its provisions. We are ready to provide the Committee with any further information or assistance that may be required.

Sincerely,

(Signed) Glenn T. Seaborg

Chairman

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Mr. McGeorge Bundy
Special Assistant to the President
for National Security Affairs
The White House

Enclosure:
Analysis of Project Sulky

84

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Chr USAEC, 1961-72
FOLDER-PAGE 39152

[redacted]

March 6, 1964

DE 3-11-64

835 3/11/64

MEMORANDUM FOR THE DEPUTY SECRETARY,
DEPARTMENT OF DEFENSE

In response to the request contained in Mr. Gilpatric's memorandum of January 17, the President has approved proceeding with plans and preparations to detonate a nuclear device with a yield of [redacted] for the purpose of improving our ability to detect, identify, and locate underground nuclear explosions. The President has been informed that you have already informally cleared with the Congressional delegation [redacted] your intentions of proceeding with the development of these plans and preparations.

The above approval extends only to the development of plans and preparations and the actual project will be reviewed by the Review Committee on Underground Nuclear Tests, in accordance with the procedures established by NSAM 269, before a final decision by the President will be made concerning the actual conduct of the test.

/s/

McGeorge Bundy

Information Copies to:
Dr. D. Hornig, OST
Mr. K. Gordon, BOB
Mr. H. Brown, AEC
Mr. L. O'Brien, WH

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*NSC Memo, Graboske to DOE, OCTP, Siebert, 9/18/89
[redacted]
[signature] 11/22/89

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Mr. Vance

THE WHITE HOUSE

WASHINGTON

1964 APR 24 14 16

Mrs. Howard has seen

April 23, 1964

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 40252

MEMORANDUM FOR THE DEPUTY SECRETARY
DEPARTMENT OF DEFENSE

SUBJECT: High Yield Nuclear Weapons

The President has noted the memorandum reporting the results of the Department of Defense and Atomic Energy Commission re-examination of the need for very high yield nuclear weapons, and concurs in the recommendation of the Department of Defense, in which the Atomic Energy Commission has concurred, that programs should not be initiated at this time for the development of a high yield warhead for our [redacted]

The President has also noted and concurred in the recommendation that the AEC be authorized to carry out certain ground and airborne operations to prepare itself to develop a three-month readiness posture to make tests in the atmosphere of high yield devices if such tests become necessary and are authorized. He has expressed his desire that such tests be conducted in so far as possible without any publicity.

McGeorge Bundy

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*NSC Memo, Graboske to DOE, OCTP 9/18/89
11/22/89

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MEMORANDUM FOR MR. McGEORGE BUNDY
THE WHITE HOUSE

SUBJECT: International Approval of Nuclear Explosions for Peaceful Applications

National Security Action Memorandum No. 282 requested a first report by the end of March on "the probabilities and problems involved in obtaining from the nations signatory to the Test Ban Treaty approval for the utilization of nuclear energy for peaceful explosions under adequate international controls." This is a response to that request. The problem posed is one which necessarily must be reviewed periodically in the light both of the international situation and the state of our technical development.

There are two ways that international agreement to the conduct of Plowshare excavation projects might be obtained. One would be the amendment of the Test Ban Treaty to exclude peaceful uses applications of nuclear explosives from the restraints of the Treaty. The other method would be the approval of specific described projects through the voting procedures prescribed for amendment of the Treaty. Our view, at the present time, is that the second method would be the more likely of success.

There appears to be little likelihood, however, that the Soviets would be receptive at this time to any proposal to exempt Plowshare excavation experiments

or applications from the Treaty restraints. We have very little evidence of active Soviet interest in the application of nuclear excavation techniques (See Tabs A and B), although the USSR leads the world in large-scale excavation with conventional explosives. [It is unlikely that peaceful uses would rank very high in Soviet priorities so long as obvious military priorities, particularly in air defense, remain unfilled.] Clearly, Khrushchev did not envisage early amendment of the Treaty, and his statements about the use of nuclear detonations for peaceful purposes were set in a vague and indefinite future.

deletion by Derwick

We understand that four or five years will be required to develop the devices and cratering technology which would be required in large-scale excavation projects, such as a new trans-Isthmian Canal. During this period it would seem important to stimulate international interest and cooperation in the nuclear excavation program to the maximum extent possible. By international participation in Plowshare symposia, observation of cratering shots or experiments and perhaps exchange of test data, it should be possible to demonstrate the economic development potential of nuclear excavation, the absence of hazard to human life and the safeguards that could be provided to prevent evasion of the Treaty for weapons development purposes. Development of international acceptance or even of cooperative effort by Treaty signatories would obviously provide the most favorable atmosphere in which to seek and gain support for international agreement, under the voting procedures of the Treaty, for approval of specific excavation projects.

ACDA has suggested that the most likely opportunity for raising the question of a treaty amendment for the conduct of nuclear excavation projects probably will be in the context of future international discussion of a comprehensive test ban. In the content of such discussions it might be possible to obtain some easing of the restraints on the conduct of nuclear explosions for peaceful purposes. It is difficult to predict, however, when such discussions might be reopened and it is possible that discussions in this content might lead to more rather than less restrictive conditions on Plowshare. (See Tab C)

While development of the nuclear devices can proceed within the Treaty limits, there are some uncertainties as to the limitations placed on the development of the necessary cratering technology by the Treaty language. The committee established by NSAM 269 is charged with reviewing the facts relating to any prospective nuclear test "which might violate or be regarded as violating the Nuclear Test Ban Treaty." The discussions to date by that committee seem to indicate that the Treaty restraints may well inhibit the development of cratering technology and become a limiting factor earlier than the estimated first large-scale excavation project some four or five years hence. (In presenting the Treaty to the Senate, Administration witnesses, while acknowledging that large-scale applications such as a trans-Isthmian canal could not be carried out under the Treaty, clearly expressed the view that properly devised experiments for developing the excavation technology could be conducted, See Tab D. Similar testimony was given as recently as 4 March 1964 before the Senate Committee on Commerce.) Certain of the tests designed to develop the necessary cratering technology raise

concerns of Treaty violation with some of the committee members. The concern is with the definition of "radioactive debris....present outside the territorial limits" of the United States. While it seems useful to identify the conflicting views on this problem (as is done below), it is not our purpose here to address ourselves to its solution, which is the proper concern of the NSAM 269 committee. The concerns expressed in that forum, however, underline the urgency of establishing an atmosphere of international acceptance of and cooperation on peaceful excavation activities.

New ↓

The AEC believes that the review committee established by NSAM 269 can adopt policies of appraisal which would allow many of the required cratering experiments to be carried out. If so, the need for a Treaty amendment would be obviated for some years. Furthermore, if cratering experiments are carried out with international observation, an atmosphere can be created in which an amendment could be obtained more easily.

↑ AEC ↓

In AEC's opinion a particularly appropriate consideration in appraising cratering experiments, in view of the Treaty limitation on causing debris "to be present" beyond territorial boundaries, is the internationally accepted technical definition of when radionuclides are considered "not present". Such a definition is found in the health protections guides of both the USSR and the US (10 CFR 20) as well as in the guides of the International Commission on Radiation Protection and the International Atomic Energy Agency. In addition a precedent for the use of this definition in interpreting an international treaty is found in the operation of the McMurdo nuclear reactor and the very slight attendant release of radioactivity within the limits of 10 CFR 20. This procedure is considered by the US to be consistent with the prohibition in the Antarctica Treaty of 1961, to which the USSR is a party, against "disposal there of radioactive waste material". Soviet representatives have visited this facility.

AEC points out that the legal basis for such policies of appraisal is the principle of "de minimis" or the application of a "rule of reason" to interpret otherwise imprecise provisions of law. Since the Test Ban Treaty does not contain precise technical criteria, it becomes necessary

for the NSAM 269 Committee to decide when debris might be considered "present". Among other relevant material to be considered in arriving at a definition is the understanding of the Senate in advising and consenting to the Treaty. In this connection, the Foreign Relations Committee reported, after hearing all the testimony on this and other questions, its understanding that "the Plowshare program will not be seriously inhibited by the Treaty".

It should also be noted that, since the technical definition of when radionuclides are "not present" is when their concentration is small compared to maximum permissible concentrations under health protection guides, the levels of radiation involved in this definition are internationally accepted as being far below the point where there might begin to be a health hazard. Thus, this definition would be consistent with a stated objective of the Treaty "to put an end to the contamination of man's environment by radioactive substances."

New ACDA

ACDA is concerned about the international repercussions if debris attributable to US underground nuclear explosions should be picked up outside our territorial limits (Tab E). The Tass press release and related cable from Moscow commenting on the accidental venting of one of our recent Nevada tests (Tab F) show that the Soviets are fully alert to this possibility. In these circumstances, ACDA is concerned that the good faith of the United States in seeking arms control agreements could be thrown into doubt by possible charges of violation, and that our reputation as a country which takes its treaty obligations seriously could be prejudiced. As to the standard suggested by the AEC for deciding what is acceptable under the Test Ban Treaty, ACDA believes that its application would result in a substantial risk of incurring the international consequences described above. The treaty speaks simply of causing "radioactive debris" to be "present" outside territorial limits and there is nothing in the text itself to indicate that the presence of small amounts of debris should be accepted. Finally, ACDA calls attention to arguments that could be made against the suggested standard on the basis of official US records published in connection with the treaty. (Tab E)

Whether or not the AEC interpretation is accepted by the review committee as a standard of appraisal, it can be borne in mind as possible rebuttal should any nuclear test accident, either weapons or Plowshare, bring forth Soviet charges of Treaty violations.

In summary, we urge

a) the question of amending the Treaty be kept under continuing surveillance,

b) a program of Soviet and international participation and cooperation in the U.S. nuclear excavation development program be devised and carried out, and

c) the acquisition of intelligence on Soviet interest and planning in this area be intensified. (or work will add reference to recent USSR announcement on cut-back)

W. Averell Harriman

See 8, 245

CROSS REFERENCE SHEET

Document* 903079

TITLE OF DOCUMENT Letter from Brown to Seaborg, 4/8/64. 2 pages.

This document requires further classification review and has been removed from this folder.

Name Jeffrey D. Haas

August 25, 1986
Date

Pertinent, but not cited, 8, 452

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THE SECRETARY OF DEFENSE UNCL BY DOE
WASHINGTON

SOFM/1/36

0 6 MAY 1964

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington 25, D. C.

Dear Glenn:

This is in reference to your letter to me dated May 5, 1964, in which you advised that the Commission concurs in the proposed new NATO 144b Agreement, and that the Commission was prepared to join the Department of Defense in recommending to the President that he approve the Agreement, make the necessary statutory determination, and authorize the execution of the Agreement.

Enclosure 1 is a letter to the President which I propose for our joint signature, wherein the Agreement is submitted to the President for his approval and requests his authorization for execution. A second joint letter at Enclosure 2 treats classified matters relating to the Agreement. Enclosure 3 forwards a sample memorandum for possible use by the President in notifying both the Department of Defense and the Atomic Energy Commission that the necessary approval, determination, and authorization decisions have been made.

If the Commission concurs in the substance of the enclosed correspondence, I would appreciate your signature and the forwarding of the enclosures directly to the office of the President.

The Secretary of State has reviewed and concurs in these proposals.

Sincerely,

Enclosures 3

Relevant, but not cited, 8, 452

SECRETARY OF DEFENSE
WASHINGTON

041136
SOFG/D2E/15

UNCL. BY DOE

MAY 10, 1958

The President
The White House
Washington 25, D. C.

Dear Mr. President:

To supplement information and comments on the "Agreement Between the Parties to the North Atlantic Treaty for Cooperation Regarding Atomic Information", contained in our unclassified letter of today, we should like to provide the following additional information regarding items we consider to be of particular interest.

You will note that there is a classified Technical Annex and a classified Security Annex to the Agreement. The Technical Annex has been developed to delineate more particularly the scope of cooperation to be carried out under the Agreement. Specifically, Section I of the Annex provides for the types and categories of atomic information (Restricted Data and Formerly Restricted Data) which may be communicated. These types and categories of information are necessary to accomplish the purposes and objectives of cooperation and are broad enough to include all the information on utilization of atomic weapons which Section 144b of the Atomic Energy Act authorizes. Section II of the Technical Annex specifically excludes communication of information on military reactors, naval nuclear propulsion plants or military applications of atomic energy other than information specifically provided for in Section I.

We should like to refer particularly to the Security Annex of the Agreement. The 1955 Agreement contained no Security Annex. The Security Annex to this Agreement incorporates existing NATO security regulations and establishes additional standards for the protection of the atomic information to be communicated. It provides that the Secretary General of NATO,

acting in the name of the North Atlantic Council and under its authority, shall be entrusted to for supervising the application of the NATO security program for the protection of atomic information under the Agreement. In addition, provides that the Secretary General of NATO shall receive complete information on the operation of the security program throughout all NATO civil and military elements, that he shall be required to make recommendations as to correction of deficiencies and to inform the North Atlantic Council in the event that corrective actions are not taken with a recommendation that the Council establish the means for appropriate action. In addition, the United States will receive copies of all inspection reports made by all NATO elements, including the Secretary General's comments on correction of deficiencies, and will have the right to conduct security surveys and inspections throughout all NATO elements and in all Member States where atomic information communicated under the Agreement has been received.

In addition to the presentation in the unclassified letter, we should like to mention some further reasons why we believe it is in the interest of the United States to conclude this Agreement. You are well aware of the need on the part of our allies in NATO to participate in over-all NATO nuclear planning. This Agreement will be important in helping to create an atmosphere of closer consultation on significant nuclear matters without communicating information that could contribute significantly to any NATO member nation's atomic weapon design, development, or fabrication capability or violating United States policies with respect to proliferation of nuclear weapons or control of nuclear weapons and their use. Moreover, we see this Agreement as affording the United States an opportunity to exert greater influence on strategic thinking in European capitals and in the North Atlantic Council as a result of the information and studies which can be provided for the authority of the Agreement and safeguarded in accordance with its terms.

Should you approve the proposed Agreement, we shall furnish a copy of this letter to the Joint Committee on Atomic Energy for its information. The Secretary of State agrees with the views expressed in this letter.

Respectfully yours,

Chairman, Atomic Energy Commission

Secretary of Defense

CONCURRENCE: Secretary of State

DRAFT LETTER FROM THE PRESIDENT TO THE CHAIRMAN, AEC

Reference is made to your letter of _____ which recommended approval in principle of a proposal to conduct an underground test of a low kiloton yield United Kingdom device at the Nevada Test Site.

I hereby approve this proposal subject to a later review of the test as outlined in your recommendation.

See 8, 510

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

[redacted]

SOFS/D2E/13

(Note: Enclosures to this letter are file in SECRET 1964 file)

MAY 30 1964

Dear Mr. President:

The purposes of this letter are: (1) to submit for your approval in principle the continuation of the underground test program as proposed for FY 1965; and (2) to request specific approval to conduct the operation planned for the first quarter.

The FY 1965 underground test series, designated WHETSTONE, has been developed from three sources: the Atomic Energy Commission, the Department of Defense, and the United Kingdom. This letter presents the requirements of each of these sponsors. The program as presented herein has been prepared with the concurrence of the DOD.

Enclosure 1 presents in outline form the number of tests proposed, by sponsoring activity and objective category. You will note that within budgetary limitations, the AEC is requesting [redacted] tests for weapons development and [redacted] tests for the development of nuclear explosives for peaceful applications (PLOWSHARE Program). Similarly, the DOD is requesting a total of about 10 tests for weapons effects purposes and two tests to improve our capability to detect underground nuclear tests. The UK has formally requested authority to conduct one test in the first quarter. This may be followed by a similar request later in the fiscal year. Enclosure 2 provides a detailed discussion of these programs as proposed by each activity.

The events proposed to be conducted by the AEC as a part of the WHETSTONE series consist of meaningful tests scheduled for execution at a rate consistent with previous guidance. This series continues to be responsive to the specific requirements of our national objectives. Each year the AEC is provided with a Statement of Long Range Guidance from the DOD. Paramount in the current guidance is the emphasis placed on the pursuit of significant improvements in technology rather than marginal refinements in existing technology. This feature is a predominant aspect of the program proposed for FY 1965, as evidenced by the effort contemplated in the exploration of basic technology. Areas specifically emphasized for investigation by the DOD are the improvement of the lethality and penetrability of strategic missile warheads, tailored effects warheads for a variety of applications and basic investigations into the fundamental technology required

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Carl Duckett

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for the development of efficient high yield devices. Other individual areas of interest to the DOD include increases in yield-to-weight ratios, development of tritium-free weapons, very clean [redacted] warheads, and the development of yield [redacted] features. The objective of the PLOWSHARE Program is to investigate and develop peaceful applications for nuclear explosives. Prerequisite to this is the development of nuclear explosives which meet the design criteria set by the various applications being investigated. The WHETSTONE series for FY 1965 outlined in Enclosures 1 and 2 is designed to aggressively pursue these stated objectives.

The events proposed by the DOD to be conducted as part of the WHETSTONE series are intended within the constraints of the Test Ban Treaty to obtain maximum possible weapons effects information and to improve our capability to detect, identify, and locate underground nuclear explosions. The weapon effects tests are part of a continuing effort to develop new technically and economically feasible underground experimental techniques that will permit obtaining some of the data which would have come from atmospheric testing. The VELA UNIFORM tests are designed to improve accuracy of location of seismic events in an active region, provide information on differentiating man-made from natural seismic signals, and test the decoupling theory.

The UK has approached the AEC with their preliminary proposal for the conduct of two tests at the Nevada Test Site. The request for approval to proceed with each test will be presented separately.

Each event, regardless of sponsor, will be reviewed and approved in accordance with agency procedures and in conformity with those additional precautions instituted as a result of PIKE, and will be executed only with the expectation that it can be conducted within the requirements and constraints of the Limited Test Ban Treaty. Where appropriate, individual requests for review and approval by the Review Committee on Underground Nuclear Tests will be made.

The test operation for the first quarter, WHETSTONE I, is discussed in detail in Enclosure 3. The operation consists of [redacted] AEC tests, including one PLOWSHARE event; one DOD test; and one possible event to be conducted by the UK. Please note that five of the AEC events proposed for that quarter, ALVA, BYE, HADDOCK, SILVERSIDE, and ROACH, were previously approved for conduct in NIBLICK; technical considerations necessitated their deferral until a later date in the underground test program.

As was suggested at the time of our request for approval of NIBLICK IV, we are prepared at your convenience to provide you with a briefing on the underground testing program and on the specific series planned for execution in WHETSTONE I.

To conduct WHETSTONE I, a maximum expenditure [redacted] of uranium 235, [redacted] uranium 233, and [redacted] plutonium will be required. To permit the orderly and continued pursuit of our national testing objectives, it is recommended that you approve in principle the WHETSTONE series and specifically the conduct of operation WHETSTONE I as presented herein. A proposed authorization is presented as Enclosure 4.

Respectfully yours,

(Signed) Glenn T. Seaborg

Chairman

The President
The White House

Enclosures:
1. Cys 1A&2A Outline of WHETSTONE Test Series
2. Cys 1A&2A Discussion of WHETSTONE Test Series
3. Cys 1A&2A WHETSTONE I Events
4. Cys 1A&2A Draft Endorsement

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levant but not cited, 8, 533

UNITED STATES
IC ENERGY COMMISSION
WASHINGTON 25, D.C.

SOFG/DOE/13

JUN 6 1964

Dear Mr. President:

This letter concerns a proposal for an underground test of a low yield United Kingdom nuclear device at Nevada Test Site.

By letter dated January 9, 1964, the Chairman of the United Kingdom Atomic Energy Authority (UKAEA) requested the Commission to consider the technical feasibility of two underground tests of low kiloton U.K. devices in Nevada during 1964. Following discussions between technical representatives of the United Kingdom Atomic Weapons Research Establishment and the AEC, the Chairman of the UKAEA, by letter dated March 19, 1964, advised that his Government had approved preparations for the first test, tentatively scheduled for July 17, 1964. No additional information has been made available concerning the second test. When information is received, it will be the subject of separate correspondence.

As you know, two U.K. nuclear devices have been tested at the Nevada Test Site. The first, identified as PANDAS, was detonated on March 1, 1962, [redacted] The second device, identified as TENDRAC, was detonated on December 7, 1962, [redacted] The test proposed for July 17, which is identified as CORMORANT, DELETED DELETED

The principal purpose of the CORMORANT event is to investigate performance of a DELETED primary employing a new technique

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The information to be derived from this test will be made available to the U.S. under the terms of the Agreement for Cooperation and this information will be beneficial in the development of additional weapons design information in this country.

The Los Alamos Scientific Laboratory and the Nevada Operations Office, the organizations jointly responsible for conducting this test if your approval is granted, will independently verify all computations regarding the U.K. device and the test. This will include a complete review of the estimated yield calculations and review of all safety aspects. Authority to cancel the shot up to firing time will be retained. The test will be submitted for your final approval in the same manner and under procedures identical to those used in securing authorization for U.S. test events.

Cooperation in the proposed test would be consistent with the Agreement for Cooperation with the U.K. on the Uses of Atomic Energy for Mutual Defense Purposes. The Commission has determined that the test could be scheduled within the proposed U.S. test program which is being prepared for submission for your consideration. The two previous U.K. tests were conducted under a full cost recovery agreement and it is proposed that the same arrangements apply for this request.

In the event of an accident which might raise issues regarding a test ban violation, agreement will be reached with the U.K. as to the manner in which public announcements will be made. It is anticipated that all such information will be handled by the AEC Headquarters Division of Public Information and Nevada Operations Office, in the manner presently approved for U.S. tests. The U.S. and U.K. have agreed on a pre-shot announcement to be released a few days prior to the test, or in the event of an information leak concerning the test. A post-shot announcement has been agreed upon and will be released after detonation on the day of the test.

The Secretary of State and the Secretary of Defense concur in this recommendation.

[redacted]

It is, therefore, requested that you approve in principle the test of a low kiloton U.S. device at the Nevada Test Site in July subject to your later review of the final proposal to be presented in the same manner as a proposed U.S. test.

Respectfully yours,

(Signed) Glenn T. Seaborg

Chairman

The President
The White House

Enclosure:
Cys 102 Draft 1 of Letter
From President to Chairman, AEC

cc: The Honorable Robert S. McNamara
Secretary of Defense

The Honorable Dean Rusk
Secretary of State

THRU GM

(1A&2A:	Addressee	w/1&2 Dft. 1 encl.
(3A:	Sec. of Defense	w/3 Dft. 1 encl.
(4A:	Sec. of State	w/4 Dft. 1 encl.
(5A&6A:	Chairman	w/5&6 Dft. 1 encl.
(7A:	Com. Palfrey	w/7 Dft. 1 encl.
(8A:	Com. Ramey	w/8 Dft. 1 encl.
(9A:	Com. Tape	w/9 Dft. 1 encl.
(10A&11A:	Secretariat	w/10&11 Dft. 1 encl.
12A:	GM	w/12 Dft. 1 encl.
13A:	DIA	w/13 Dft. 1 encl.
14A:	Security	w/14 Dft. 1 encl.
15A:	Intelligence	w/15 Dft. 1 encl.
16A:	CSC	w/16 Dft. 1 encl.
17A:	PI	w/17 Dft. 1 encl.
18A:	Director's Off.	w/18 Dft. 1 encl.
19A:	Plans Reader	w/19 Dft. 1 encl.
20A:	Plans Retained	w/20 Dft. 1 encl.
21A:	Reader	w/o encl.
22A:	Locator	w/o encl.
23A:	DMA Files	w/21 Dft. 1 encl.

Personnel Clearance and
Facility Approval Confirmed

Ref: AEC 1154/1

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Relevant, but not cited, 8, 565

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Title of Document Memo For Sec. State From A[redacted] Fisher
Non-Proliferation of Nuclear Weapons and the MLF

Date June 15, 1964 8 pages

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* Letter ACDA, SMITH, To DOE, GILBERT, OC 5/2/88

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See 9, 276

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Title of Document Letter Seaborg to McNamara re UK Canberra 1p.

Date 10/22/64

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R Dudgeon
Name

5 Nov 90
Date

See 9, 392

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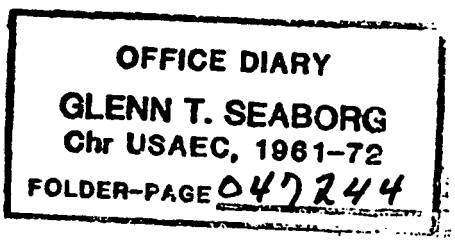
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Title of Document Letter from Chairman Seaborg to Mc George Bundy (2 pgs.)

Date 11-23-64

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Title of Document Summary of Factors Involved in Applying NSAM 294 to Two Pending Cases (4 pgs.)

Date Enclosure to 11-23-64 Letter

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25 NOV 1964

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
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Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Dear Glenn:

The Department of Defense has a requirement to provide to the Military Committee and Standing Group, NATO (MC/SGN) a study (Parts I and II) of requirements for ballistic missiles for NATO. This study will be used as the United States input to the international study of NATO ballistic missile requirements which was directed by the Military Committee, in Chiefs of Staff Session, in December 1962. If the study is to be fully useful it will eventually be necessary for its content to be made available to the North Atlantic Council and representatives in the National Capitals. However, the current review of SACEUR's 1970-74 force goals during the next several months makes mandatory the early consideration by the MC/SGN, in Permanent and Chiefs of Staff Sessions, of all pertinent data concerning MRBM requirements. In order that the study can be made available to the MC/SGN at the earliest possible time, the following is proposed:

a. Approval of the proposed atomic information outlined in the inclosure.

b. Your agreement that CM(62)50(Final) (CABAL Procedures) do not apply to transmission of atomic information to the MC/SGN.

Subject to your concurrence in the above and the provisions of Executive Order 10956, the Department of Defense would understand that the atomic information contained in the missiles study is eligible for authorized communication only to SACEUR, SACLANT and their subordinates, and to the MC/SGN with no further dissemination authorized at this time. However, when the new Agreement becomes effective the Department would take

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BY AUTHORITY OF DOE/OC
11/30/87
REVIEWED BY DATE
* Ltr. OASD Bodine To DOE, OC
Gilbert dated 9/1/87
J. Diaz 11/30/87

necessary action to extend dissemination authority to the extent permitted under the new Agreement, subject, of course, to any dissemination limitations considered applicable under the new Agreement.

I have concluded that the release to NATO of the atomic information indicated in the inclosure is required for the purpose of the development of defense plans. I have also concluded that provisions of NSAM 197 do not apply to this cooperation.

Pursuant to Executive Order 10841, as amended, and Section 144B of the Atomic Energy Act of 1954, as amended, I have determined that the proposed cooperation and the proposed communication to NATO will promote and will not constitute an unreasonable risk to the common defense and security. Further, I have determined that this proposed communication will not reveal important information concerning the design, development or fabrication of the nuclear components of an atomic weapon.

If the Commission joins me in the above, I shall advise the President of the proposed communication and request appropriate action thereon. On receipt of approval, I shall notify the Joint Atomic Information Exchange Group accordingly.

In addition, the Joint Committee on Atomic Energy will be notified of this determination prior to the communication of the specified information to NATO.

Your early consideration of this request will be appreciated.

Sincerely,

SIGNED

BOB

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 50099

Inclosure 1 (Placed in the 1965 "Secret File" for the day of February 1, 1965.)

elevant but not cited, 9, 503

[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

GT FILE

DOD

915193

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 0480741

DEC 19 1964

This [redacted]

Rec'd 12/7 to diary

Dear Bob:

Correspondence concerning the proposed FY 1964 Dispersal Plan [redacted] has noted that the Commission was examining its continuing role in connection with future dispersal and custody matters. This examination has progressed to the point where we believe our thoughts on these matters should be discussed with the Department of Defense before any final conclusions are reached.

The Commission has considered certain aspects of these problems including its responsibilities under the Atomic Energy Act, pertinent National Security Action Memoranda and other Presidential directives, the requirements of operational readiness, and our ability and/or need to maintain any real custody over dispersed weapons under the present defense posture.

It appears that responsibilities in these matters may be broadly summarized as follows:

a. By virtue of Presidential directives transferring weapons from AEC to DoD, the latter has authorization for custody of about 93% of the FY 1964 finished weapons stockpile.

b. By virtue of its responsibilities under Executive Order 10841 [redacted] the Commission should coordinate on proposed dispersal of weapons in support of non-U.S. NATO forces.

c. Pursuant to the President's directive [redacted] the Atomic Energy Commission participates as a matter of responsibility in the consideration of the identification and resolution of health and safety problems connected with the custody and storage of nuclear weapons.

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FOLDER-PAGE 048 27.2

d. By virtue of its responsibilities under Executive Order 10841, the Commission should have reasonable assurance as to the adequacy of physical security arrangements to protect Restricted Data in weapons [redacted]

e. By agreement with DoD (Secretary McElroy's letter of January 27, 1959, and Deputy Secretary Gilpatric's letter of May 17, 1961), the Commission assists DoD in establishing security standards at all DoD storage sites.

When the Atomic Energy Act was enacted, all atomic weapons were initially placed in AEC custody. As the need for greater readiness became apparent and the necessity for technical surveillance reduced, a portion of the stockpile was transferred by the President to DoD custody. These trends have continued so that, at present, the small number of JCS reserve weapons in the physical possession of the AEC no longer serves a significant practical purpose as the DoD now has Presidential authorization for possession of about 93% of the total FY 1964 stockpile. This suggests that consideration might be given to transferring the remaining portion of the JCS reserve now in AEC custody to the DoD. Transfer of the total finished weapons stockpile to the custody of the DoD would simplify National Storage Site and Operational Storage Site operation and would eliminate present AEC-DoD duplication of general activities associated with custodial functions at those sites.

If you agree, we believe it appropriate at this time to restate the overall responsibilities of the two agencies as to transferred and dispersed weapons. In this connection, the following activities which are now being performed appear necessary and desirable and should be continued in the national interest: (1) AEC participation in coordination of proposed DoD disposal plans, [redacted] (2) the conduct of security surveys and (3) the development and review of storage safety criteria and of nuclear weapons system safety rules. In addition, provisions for AEC, or joint AEC/DoD, safety surveys or spot checks of the adequacy of safety procedures should be developed. Also, to assist the Commission in discharging its safety and security responsibilities, it is proposed that mutually acceptable and jointly approved procedures be developed under which the AEC would maintain a current inventory, by detailed location, of all atomic weapons in DoD custody and to provide for a periodic AEC spot check audit of the stockpile on a world-wide basis.

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A discussion of one approach for providing spot checks of the adequacy of safety procedures, a current world-wide AEC inventory and a spot check audit of the stockpile is attached to this letter.

We would appreciate an early discussion of these matters; and once full accord has been reached, it is proposed that we jointly make appropriate recommendations to the President. The Joint Committee on Atomic Energy would be informed of the President's decision.

Sincerely yours,

(Signed) Glenn T. Seaborg

Chairman

The Honorable Robert S. McNamara
Secretary of Defense

Attachment:
Cys 1A&2A of
Discussion Paper

Distribution:
1A&2A: Addee w/1A&2A of Attach.
3A&4A: Chairman w/3A&4A of Attach.
5A: Com. Bunting w/5A of Attach.
6A: Com. Palfrey w/6A of Attach.
7A: Com. Ramey w/7A of Attach.
8A: Com. Tape w/8A of Attach.
9A: GM w/9A of Attach.
10A&11A: Secretariat w/10A&11A of Attach.
12A: OGC w/12A of Attach.
13A: Security w/13A of Attach.
14A: Director's Office w/14A of Attach.
15A: Prod. Retained w/15A of Attach.
16A: Prod. Reader w/16A of Attach.
17A: Reader w/o Attach.
18A: Locator w/o Attach.
19A: DMA Files w/17A of Attach.

Ref: LXI-6857 (AEC 867/88)
OA-LIV-1255 (AEC 867/89)
4-06862 fm SECY:HOBBS
OA-LIV-950 (AEC 867/51)
LXI-5286 (AEC 867/38)
C-116 (AEC 867/18)

Concur:

OGC_____
Security_____

OFFICE ▶	MA:Prod	MA	AGM	DGM	GM	CM
SIGNATURE ▶	DNBaker/sab	Crowson	[redacted]			
DATE ▶	10/1/64					

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(7-65 5-62)

U. S. GOVERNMENT PRINTING OFFICE 16—62761-3

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 048071.4

915194

A DISCUSSION OF ONE APPROACH FOR PROVIDING SPOT CHECKS OF THE ADEQUACY OF SAFETY PROCEDURES, A CURRENT WORLD-WIDE AEC INVENTORY AND A SPOT CHECK AUDIT OF THE STOCKPILE

A. In considering weapon system surveys, it is necessary to distinguish between the safety facilities, procedures and performance related to the storage environment, and the safety derived from implementation of and operational performance under the safety rules and safety procedures that are related to the weapons systems safety reviews and weapons systems safety rules.

At the present time, the AEC participation with the DoD in the latter activities gives ample assurance of the adequacy of approved rules and procedures themselves. It does not, however, include a review of actual performance under the rules and procedures. If AEC is to have direct verification that DoD operations are indeed conducted in conformance with the rules and procedures, field audits would be required. Weapons Systems Safety Specialists (including appropriate weapon laboratory representatives) would verify conformance by actual observation of operations.

In planning audits to verify the adequacy of the performance and implementation of weapon system safety rules, it is believed that the determination of the number of investigations necessary to provide meaningful results may be reduced below that obtained on a purely statistical basis. A certain confidence may be derived from the valid assumption that the level of performance within a major command will be comparatively consistent. The assumption is based on the fact that the performance of control and inspection functions is supervised by a centralized command. The number of surveys necessary will vary with the size of the command and the number of weapons systems deployed.

B. With respect to stockpile inventory verification, there are, at present, existing procedures which require that all DoD nuclear weapons dispersal locations [redacted] report to Field Command, DASA, as follows:

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FOLDER-PAGE 0480715

[redacted]

1. Daily, all changes to nuclear weapons in their custody. These changes include receipts, shipments, modifications, alterations, conversions, yield changes, and configuration changes. Reporting is by total and by Mark Mod nomenclature and serial number.

2. On a semiannual basis, each dispersal location submits a typed inventory of all weapons by serial number and nomenclature.

Field Command, DASA, compiles and summarizes all Daily Change Reports and daily forwards updating information to Headquarters, DASA. Field Command, DASA, therefore, actually maintains a current inventory of all DoD-dispersed nuclear weapons.

It is not proposed that AEC receive and process the large number of changes received daily by Field Command, DASA, from the reporting dispersal locations, since to do this would seem to be an unnecessary and expensive duplication requiring additional teletype and automatic data processing personnel. Rather, it is proposed that Field Command, DASA, provide Albuquerque Operations (ALO), on a periodic basis, a tabulation which would depict all weapons by nomenclature and serial number at each of the dispersal locations. ALO would verify the total of this tabulation with their records of total number of weapons in DoD custody.

In order to conduct the AEC audit or spot check of weapons in DoD custody, ALO would randomly select from the Field Command, DASA, tabulation a minimum number of dispersal locations to be checked within a prescribed sample period so as to effect a confidence statement at a level acceptable to AEC and DoD. Based upon the present stockpile dispersion and on random selection of locations, if [redacted] weapons are sampled with no discrepancies, then it can be stated with a 99% degree of certainty that at least 99.5% of the weapons in stockpile are dispersed as stated. It is proposed that initially such an audit of [redacted] weapons be made each quarter. (Assuming the audits are made initially on a quarterly basis and no errors are found after the first few cycles, the frequency of audit could be reduced from a quarterly basis without jeopardizing the 99/99.5% confidence.) Dispersal locations would be randomly selected for audit [redacted] The probability of choosing a particular location would be proportionate to the number of weapons at that location. Every weapon at the selected locations would be examined or checked against the inventory

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maintained by ALO and Field Command, DASA, and a quarterly audit statement would be provided. When verifying the total inventory, performance of a 100% audit of several randomly selected locations is statistically equivalent to an audit performed on randomly selected individual weapons. From a cost (travel and per diem) point of view, this approach would be less expensive as fewer locations need to be visited.

The personnel conducting the audit would also conduct storage safety surveys of the DoD facilities visited. Such surveys would be confined to storage and handling practices and procedures within the structure itself, or between structures at the facility, the criteria for which would be AEC/DoD approved standards.

[redacted]

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MK 3

Monday, December 21, 1964 - D. C. Office

at which enriched uranium production was discussed.

At 10:10 a.m. I presided over Commission Meeting 2068 ~~(Letter from Bundy, White House re (action summary attached). Enriched Uranium Production, and**~~

At 11 a.m. I attended the Meeting of Principals in Secretary of State Rusk's office. Among those present ~~included~~ were Rusk, Foster, Bundy, Wheeler, and McNamara. Rusk began by asking about the status of President Johnson's January 1964, proposal to Chairman Khrushchev regarding certain arms limitation measures. Foster said that some progress had been made, although not as much as he had hoped.

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and it was decided that this should be looked into and checked so far as possible. Bundy suggested the creation of an interdepartmental group to look into this. I mentioned the study being carried out by the AEC and the DOD with respect to

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I said that this would be coordinated with the ACDA in order to see, if a further cutback is decided upon, whether it could have any possible utility in dealing with the Soviets. Foster read from a letter that he had DELETED the gist of which was that nothing should be done on arms limitation or disarmament proposals at the present

~~**December 7 Letter from Sir William Penney discussed, copy attached)~~

[redacted]

[redacted]

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REVIEWED BY Judy Liang 1/9/92
DATE
*JSC Memo, Graham, to DOE, OCTP 9-19-89
Graham 1/10/90

time, and Foster indicated strong disagreement with this point of view. Foster then went on to speak on the memorandum (copy attached) of December 3, 1964, "Subjects to be Discussed with the USSR", which was to form the basis for the present Meeting of Principals. This memorandum outlines a 5-point program to prevent nuclear proliferation to be discussed with the Soviets. With respect to the first point, namely, an intensified effort to negotiate a non-proliferation agreement, I urged Foster that this include in discussions with the Soviets the concept of IAEA safeguards, and Foster agreed. However, in the following discussion, it appeared that this first point probably wouldn't be pressed very hard with the Soviets in the immediate future.

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Rusk asked whether there might not be some advantage to a declaration by the five nations that have nuclear weapons that they will not

disseminate them to other countries. He expressed some skepticism about adding another proposal to the numerous ones that the U. S. and the U.S.S.R. have made in their bilateral and other talks, and suggested that a chart be made that would summarize all of the proposals that have been made by each side. Foster said he would prepare such a chart and circulate it. Rusk asked what the U. S. reaction might be if the Soviets took the initiative and withdrew some five divisions, that is, about 50,000 men, from Germany. He asked whether we might then withdraw a similar number.

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Bundy felt that this concept should be staffed out before any such conversations, and, in particular, that we would have to talk to the Germans first. Rusk summarized point one of the December 3 memorandum by saying that a short five-nation statement was probably all that was in the cards at present. Foster then asked how we might then handle the non-proliferation moves that ~~were~~ are pending in the U. N. General Assembly. Rusk said that another possibility here would be to declare a nuclear-free Latin America, and asked McNamara's opinion of this.

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DELETED Rusk then summarized this by saying that we should look into the concept of a nuclear-free Latin America, with transit rights. Bundy indicated that this ~~was~~ is not a crucial area, but Rusk said he ~~felt~~ feels it ~~was~~ is a way to get started. He ~~thought~~ thinks the establishment of a denuclearized Africa ~~was~~ is also worthwhile, and McNamara and General Wheeler agreed that this ~~was~~ is satisfactory, provided transit rights ~~were~~ are available. I mentioned the recent statement that Lord Chalfont ~~had~~ made to the U.K. Parliament, indicating that, because of technical advances, it is now possible to reduce the number of inspections in a comprehensive test ban treaty to less than seven per year. I said I ~~felt~~ feel that this ~~might~~ may not necessarily be the case and that it should be studied carefully before making any moves in that direction. I asked about the status of the study group on the comprehensive test ban, and Foster indicated that they ~~were~~ are working on the various questions involved. Bundy asked how long it ~~would~~ will take to get a clean nuclear explosive of the type needed for the Plowshare project, and whether five years ~~would~~ will be sufficient. I said that a lot of progress ~~could~~ can be made in five years, saying

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Rusk asked whether a method of proceeding with Plowshare with international control could not be used, and

I reiterated my plan of conducting Plowshare experiments and projects under conditions of complete international participation and inspection, just short of the one step of revealing the inner design of the nuclear device itself. ¶ General Wheeler indicated that the Chinese wouldn't go along with a comprehensive test ban, and Bundy indicated it would be hard to get such a treaty through the Senate, recalling the need for the four safeguards in order to get Senate approval of the limited test ban treaty. McNamara at this point indicated that underground tests under the test ban treaty until now have worked to the disadvantage of the U. S. vis-a-vis the Soviet Union. I disagreed with this point of view, indicating that much progress had been made and that it had enabled the laboratories to remain viable and healthy, which otherwise would not have been possible, DELETED

DELETED McNamara said he felt the Soviets had benefited more, and will benefit more in the future because they are closing the gap between the U. S. and the Soviet Union in weapons technology by conducting underground tests. He also indicated that India and Germany, and others, would not sign a comprehensive test ban treaty that the Chinese don't sign. Rusk indicated that there should be a clause in the MLF agreement allowing for the effects of disarmament on it. ¶ Rusk then went on to the fourth item in the December 3 memorandum, namely, a

[redacted]

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[redacted]

[redacted]

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At 2:40 p.m. I presided over Commission Meeting 2069 (action summary attached) at which a letter from Bundy (copy attached) directing the Secretary of Defense and the Chairman of the Atomic Energy Commission to develop a recommendation for a Presidential determination of enriched uranium production schedules for both military and non-military uses →

[redacted]

was discussed. We also discussed a letter from Bennett dated December 7, 1964

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12/21/64

we directed staff to prepare a rep't, stating we confirm the interpretation (made on January 8, 1965)

The Commission discussed the future U-235 production schedule. We may decide to further reduce the power to 2000 MW.

[redacted]

[redacted]

rtinent but not cited, 10, 28A

[redacted]

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

OFFICE DIARY
GLENN T. SEABORG
USAEC 1961-72
FOLDER-PAGE 53035

905007

January 8, 1965

Dear Dean:

The Commission has been following with interest the efforts that are being made to encourage the member states of Euratom to let their existing Agreements for Cooperation with the United States expire so that all future transfers of special nuclear materials from the U.S. to these countries will be channeled through the Euratom Supply Agency. Following receipt in Geneva last September of your message to me on this subject, I discussed this matter with the members of the Euratom Commission as well as with leading figures in the Belgium and French atomic energy programs. In keeping with your recommendations, I stated in our conversations that it was the established aim of U.S. policy to terminate the bilateral agreements with the individual member states of Euratom as they come up for renewal.

The Commission supports the policy of channeling future supply arrangements through Euratom, and our respective staffs recently have been collaborating in developing responses to questions the Belgians have put to us regarding implications of our letting the Belgian Agreement expire. I believe, however, that there are two aspects to this matter which I should call to your attention. The first concerns the question of whether we should continue to adhere to the policy of letting the existing Agreements expire if very serious and damaging resistance to this policy is encountered from some of the Euratom member states. The second concerns whether our special safeguard arrangement with Euratom should be modified with the objective of placing all or a portion of the facilities receiving U.S. assistance in the Community under IAEA safeguards. I understand that copies of Mr. Foster's recent letter to me on the safeguards question as well as my reply have been made available to the Department.

Regarding the first question, there already is ample evidence that the French are strongly opposed to letting their Agreement for Cooperation expire and that they are seeking to encourage the other member states to join them in opposition to channeling all future transfers of U.S. special nuclear material through Euratom. They have stated that they would make a concerted effort to wreck Euratom functions if this policy is pressed. We realize, of course, that the transfer

BY AUTHORITY OF DOE/OC
REVIEWED BY Cauchman 11/30/87
DATE
* Ltr. DOS. Burke To DOE, OC
Gilbert dated 8/19/87
11/30/87
Y. Liang

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Chr USAEC, 1961-72
FOLDER PAGE 53036

of the supply function to Euratom has been an expressed objective of the Community as well as of the United States for some time. We also recognize that the efforts we recently have taken in this direction stand some chance of success and that it would be premature to abandon this policy in the face of French threats or pressures. At the same time, however, we are of the opinion that the U.S. should stand ready to re-evaluate the policy of "non-renewal" if continued adherence appears more likely to weaken the Community and to seriously damage our relationships with the member states.

Our view in this regard is based on our observation that Euratom's involvement in supply matters is principally confined to the exercise of a "paper" function rather than a truly substantive responsibility. Therefore, while we see advantages to the policy we have adopted, we believe that the centralization of the supply function through Euratom may not be truly important to the Community's real success, particularly if the action taken serves to hurt or hinder the Community in other areas of greater substance. We also have some doubts as to whether the Euratom Commission itself will take a firm stand against extending the Agreements in the face of strong opposition. Thus, by adhering to an adamant position on the matter of non-renewal, the U.S. may find itself taking a more aggressive position in strengthening a European institution than the Europeans themselves are prepared to assume. Because of these factors, we believe the United States should be prepared to re-evaluate its position on the matter if it appears that the opposition to the policy may damage, rather than help, Euratom, and seriously impair our relationships with the member states. Moreover, in the meantime, we believe that it would be desirable for us to avoid conveying the impression, through very strong advocacy, that we believe that the assumption of the supply function by Euratom is vital to Euratom's success as a European institution. We also feel that there is no immediate press for decision from the Euratom member states on this policy, since Belgium has agreed to the expiration of its Agreement, and the French Agreement, which is the next to expire, does not expire until July 1966.

As noted, the second question relates to whether it would be timely for the various interested Agencies to reassess U.S. safeguards policy towards Euratom to see if any modifications favoring the IAEA are in order. As indicated in my recent letter to Mr. Foster, the Commission is of the opinion that our safeguards arrangements with Euratom cannot be altered without the mutual consent of the parties. We also fully understand the motivations that prompted the establishment of our special safeguard arrangements with Euratom in the first place. At the same time, we believe that the factors may have changed somewhat from the circumstances that existed when these arrangements were originally conceived. Specifically, in recognition of the importance that the United States now ascribes to encouraging the widespread application of IAEA controls, we are of the opinion that a reassessment of our policy towards Euratom may now be in order. In conjunction with this reassessment, I would propose

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[redacted]

that we examine carefully the adequacy of the Euratom safeguard system, as well as our opportunities to verify its effectiveness and whether some significant application of IAEA controls to Community programs is feasible.

Without prejudice to this broader study, I believe one particular step merits immediate attention. As I indicated during our recent meeting of the Committee of Principals, I believe it would now be timely for the U.S. to undertake a more concerted diplomatic effort to encourage a number of the other major atomic powers to volunteer to place some of their principal atomic facilities under IAEA safeguards. As you will recall, we urged the other atomic powers to take such a step last March when we offered to place the U.S. Yankee reactor under IAEA controls. I believe that it would now be timely for us to follow this earlier initiative with specific approaches to selected countries. I would like to suggest, in particular, that we encourage the United Kingdom, Canada, Japan and India to volunteer to place a few of their key facilities under IAEA controls. I also believe it would be highly desirable if we could encourage Euratom and its member states to take a similar step and to place at least one large-scale nuclear power plant, such as the SENN reactor in Italy, under IAEA safeguards.

As you may have been informed, representatives of the Commission and the Department already have made some preliminary overtures to the Euratom Commission along these lines but the responses to date have been largely non-committal. I believe, therefore, that we would stand the greatest likelihood of success in this instance if we would now impress Euratom at a high level that we ascribe substantial importance to this proposal and that similar overtures to some of the other major powers also are under way. We shall, of course, be pleased to assist the Department in making these various approaches if you agree that an overall effort along these lines is desirable.

The Commission would be pleased to meet with you or your designees to discuss these matters further.

Sincerely,

/s/

Chairman

cc: Chairman (2)
Commissioner Bunting
Commissioner Palfrey
Commissioner Ramey
Commissioner Tape
GM
AGMIA
Secretariat (2) ✓
OGC
A. Labowitz GM

The Honorable Dean Rusk
Secretary of State

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 50068

Thursday, February 11, 1965 - D. C. Office

At 9 a.m. I met in Gordon's Office with Gordon, Staats, Webb, Seamans, Commissioner Tape, Hornig and others to discuss President Johnson's request that we try to accommodate our Snap program to JCAE views as brought out by Mel Price yesterday. There was some difference of opinion as to the future plans for Snap-8 - Gordon will try to summarize a consensus to go to the President.

At 11 a.m. I had an appointment meeting with Sir William Penney (Chairman, UKAEA) in my office. (1) Penney said he was embarrassed by his Government's attitude in requiring secrecy on the conduct of the nuclear weapons test which they are requesting us to perform next summer. He said this secrecy requirement has its origin in one wing of the Labor Government. I told him that we could probably comply with their request, but that we would have to have a plan for an announcement in the case of venting or a news leak. We discussed whether the U. S. would require a letter of request from the U. K., and I said we would let him know through the regular channels. I said that we are embarrassed by the failure of the last U. K. test that we performed. (2) We discussed the new place of the Atomic Energy Authority in the Labor Government, and Penney said he thought this was working out rather well.

CLASSIFICATION CANCELLED*
WITH DELETIONS
BY AUTHORITY OF DOE/OC
J. Diaz 1/30/90
REVIEWED BY DATE
*Letters from State, 8-19-87, NSC, 2-13-89, & U.K., 12-21-87, to DoE, OCTP, Siniscalli
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[redacted]

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FOLDER-PAGE 50069

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We agreed that the U. S. would let Panton know the answer to this question of whether the U.S.-U.K. meeting should be held this spring in view of this development. (4) He said that

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FOLDER-PAGE 50070

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At 11:20 a.m. I received a telephone call from Mr. Bundy. He wanted to know where the leak to the newspapers came from on SNM (Finney article)./ I told him that we didn't know; that (Copy of article attached) quite a few people know about it - the JCAE, DOD, AEC and staff

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Chr USAEC, 1961-72
FOLDER-PAGE 50011

FEB 11 1965

904507

AUTHORITY OF DOE 3.3
BY NWD DATE 11/21/89
*NSC Memo, Craybosky to DOE, OCRP, Siebert, 9/18/89
Signed Glenn T. Seaborg 12/22/89

Dear Bob:

Since receipt of your request that we join in a determination to communicate the [redacted] Study to NATO, our staffs have been examining the extent to which we could disseminate this study in NATO in light of the security problems that have existed in SHAPE including those identified in the most recent United States Military Information Control Committee (USMICC) report.

This will confirm the understandings reached in the discussions which Commissioners Ramey and Tape had with Deputy Secretary Vance on February 12. We concur in the desirability of authorizing transmittal of the [redacted] report to the Military Committee Standing Group NATO (MC/SGN), subject, of course, to the controls recommended by the USMICC in their most recent report on that NATO element.

The Commission's action in this matter is influenced by the consideration that substantial improvements have been made in the security program of the MC/SGN. The Commission notes, however, that the most recent USMICC survey of the SHAPE security program indicated that certain of the significant deficiences, which were initially identified in 1961, continue to exist. The Commission is hopeful that action recently initiated by the Departments of State and Defense will result in early correction of SHAPE security deficiencies and thereby enable the Commission to join in a determination permitting further dissemination of the [redacted] report within NATO.

Accordingly, pursuant to Executive Order 10841, as amended, the Commission has determined that the proposed cooperation and proposed communication to MC/SGN of the information described in Enclosure 1 of your letter of November 25, 1964, subject to the controls recommended by USMICC in MIC 206/157, Section IV, paragraphs A, B.1, C and D, will promote and will not constitute an unreasonable risk to the common defense and security. Further, the Commission has determined that this proposed cooperation and communication will not reveal important information concerning the design or fabrication of the nuclear components of an atomic weapon.

The Commission also agrees that the provisions of National Security Action Memorandum 197 do not apply, provided that in the transmission

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Chr USAEC, 1961-72
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of the information the U.S. makes it clear that the transmission of the information does not commit the U.S. to making the weapon systems or nuclear weapons referred to available in support of NATO or its member states.

In advising the President of the proposed communication, we recommend that you request the necessary waiver of the restrictions set forth in the President's memorandum of January 12, 1963, to the extent necessary to permit communication of the information to the MC/SGN in accordance with this joint determination.

The Commission understands that you will notify the Joint Committee on Atomic Energy of this proposed transmission.

Finally, in his letter of February 12, 1965, the Deputy Secretary of Defense set forth some views as to how we might address future joint determinations under Executive Order 10841 when communications are proposed under the new NATO Agreement for Cooperation. We intend to provide our comments on this matter by separate letter shortly.

Cordially,

(Signed) Glenn T. Seaborg

Chairman

The Honorable Robert S. McNamara
Secretary of Defense

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WASHINGTON, D.C. 20301

[redacted] 12 FEB 1965

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 50096

Sent 2/15/65

904552

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Dear Glenn:

Reference is made to Secretary of Defense McNamara's letter of November 25, 1964, concerning the MRBM Study. It advised that the Secretary has determined that the proposed cooperation in providing the MRBM Study to NATO will promote and will not constitute an unreasonable risk to the common defense and security.

Forwarding of the MRBM Study to the Standing Group, NATO has been a long-standing commitment of the Department of Defense. I desire to carry out this commitment as soon as possible. It is understandable that you should have some concern in further forwarding the study to SACEUR in view of the U. S. Military Information Control Committee report on their recent inspection of NATO security practices which was issued on January 11, 1965. However, the DoD has taken action to defer authorizations for transmission of atomic information to SACEUR activities until corrective action is taken. The MRBM Study cannot be transmitted to SACEUR until the restriction is lifted. With respect to the security practices of the Standing Group, NATO it is my understanding that they fully meet the required standards.

Although the transmission of the MRBM Study to the Standing Group would be under the old NATO Agreement, I would like to express my views on the general subject of Determinations and in particular to those to be made under the New Agreement which is expected to become effective in the near future. I do not consider that deliberative actions of the DoD and AEC under Executive Order 10841 should be subject to the day to

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REVIEWED BY DATE
* Ltr. OASD Bodine To DOE, OC
Gilbert dated 9/1/87
J. Diaz 11/30/87

day results of periodic inspections. With fifteen nations, as well as the NATO Organization involved under the new NATO Agreement, it is quite probable that discrepancies will arise from time to time in these inspections. In my opinion, determination with respect to promotion of the common defense and security should be made on the basis of consistency with national policy; determination with respect to risk to the common defense and security should be based on whether or not the standards or criteria for the safeguarding of information by the recipients are satisfactory, whether a mechanism exists for assuring that the standards or criteria are met and maintained, and whether there are means for taking immediate action to cut off the flow of information to a deficient country or element. The circumstances associated with the USMICC inspection and the actions that resulted from the report convince me that these criteria are being met and confirm that the Determination made by Secretary McNamara with respect to the MRBM Study is sound.

It is requested that early action be taken on our letter of November 25, 1964. Your comments are invited with respect to the basis upon which Determinations under Executive Order 10841 should be made.

Sincerely,

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SOFG/D2E/21

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Title of Document Status of MLF - ANF

8 pp.

Date 4/5/65

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R Dudgeon
Name

5 Nov 90
Date

See 11, 29

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GLENN T. SEABORG
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This document consists of 6 pages
No. 2 of 2 Copies, Series A

July 9, 1965

915219

SPACE COUNCIL MEETING: Room 213 Executive Office Building 10:00 to 11:30 a.m.

Present: Vice President Humphrey, Chairman; McNamara, Rusk, Seaborg, Webb, Raborn, Schultze, Welsh, and Dr. Hall of DOD, plus Harold Brown, Keeny, Dryden, Seamans, Llewlyn Thompson, Shapley and others.

Humphrey opened the meeting by saying that its purpose was to discuss the general problems connected with deciding on a program for the Manned Orbiting Laboratory (MOL), Some of the questions were its impact on NASA; the extent of the use of NASA facilities for tracking and controlling of MOL, including the use of Apollo facilities; the extent to which the launchings would be public information; the extent of any conflicts between Apollo and MOL; the dates of the launches of MOL; the question of whether MOL would be launched from Cape Kennedy or Vandenberg; the question of wither the astronauts for MOL might be trained in connection with the Apollo program; the general role of NASA in connection with MOL, and any statements to the press with regard to the present meeting.

Humphrey emphasized that the emphasis has been on the peaceful uses of space, and he thought that perhaps we should emphasize the contributions of MOL to peace. He said he has no prejudiced position. He said, however, that the open involvement of the military in the space program in this way might cause some interpretations which could be laid to international problems. He conceded, however, that there has been no international problems in this connection yet and there might not be any in the future. He said he would circulate some of these questions that he has raised to members of the Space Council. He said he had also received some observations from Keeny, and he would circulate these too. He then called on McNamara.

McNamara said he had three basic questions:

1. Shall we go ahead with the MOL program.

2. The problem of choosing contractors for the program.

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* Ltr. OASD MC Donald dated 8/2/89
Ltr. NSC Grabske dated 8/29/89
Ltr. NASA Hagen dated 5/24/89

RESTRICTED DATA
This document contains restricted data as defined in the Atomic [illegible] its transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

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3. If we go ahead, what type of announcements should be made.

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DELETED Rusk inquired as to the timing of any announcement, and McNamara replied that this should be within about a month.

McNamara said that the matter of awarding contracts was very complex. Humphrey inquired whether the MOL project would require a whole new set of contractors. McNamara said that General Electric, Lockheed and Douglas have bid and that the bids are in the process of evaluation. DELETED

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McNamara then asked Brown to review the technical elements of the project. DELETED

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DELETED They plan to use Titan III-C as the booster and to use the Gemini capsule. The unmanned launchings would take place in 1968, and the manned launching would take place in 1969 and 1970. DELETED

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Rusk indicated that the manner of announcement of the MOL project was very important because we have emphasized the peaceful uses of outer space. He said he thought the intelligence community should provide us with an assessment of what we know about the Russian military use of outer space. He said that perhaps the DOD could represent the budget for MOL, ~~as~~ but the non-military part of their budget, like they do the budget for rivers and harbors. He said there probably will be some trouble with some countries in obtaining tracking stations. He felt that we were moving now, in effect, toward Eisenhower's "Open Skies" policy.

Humphrey asked whether there was a possibility of experimentation using the Gemini and Apollo space flights preparatory to the MOL flights. McNamara said he thought there would be such possibilities, [redacted] He said the DOD would continue to buy piggy-back experiments on NASA flights, which so far had been very successful.

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Humphrey asked Webb what NASA might be doing in 10 years from now if the DOD went into this, and Webb replied that they would be working on sophisticated life support systems for extended trips to the moon, etc., etc. He also emphasized that we won't really know the feasibility of a number of these advanced space missions until we learn more about how men can stand long periods in space.

Humphrey said he thought there would be a number of problems and questions from Congress. McNamara said that we need to make it clear that the DOD programs will only be undertaken for military purposes and will not conflict with NASA programs, and will not be undertaken simply to satisfy Air Force aspirations to be involved in space programs. He said that he had studied this for one and a half years and was moving deliberately in order to be sure of the wisdom of undertaking the program.

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Rusk asked whether the start on the manned basis would be on the same date as on the unmanned basis, and McNamara said both would start on the same date. Rusk asked whether DOD was assuming that the Russians would be doing the same thing to us, and McNamara said that he was assuming that. Rusk pointed out that if we go to international inspection of activities of this type, it might be necessary to inspect the MOL activity, and McNamara said that this would be acceptable. Rusk, who was forced to leave for another meeting at this time, said he had the general impression that the MOL project was a good idea and that we should go ahead with it. He felt there should be a Task Force to work out the political and public aspects of this. He

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now doubted that it should be announced immediately, especially during this present Viet Nam crises. McNamara agreed that we shouldn't announce this now, but that we should be prepared with background information for the answering of questions. He thought that we should work out a general coordination throughout the Government during the next month.

McNamara said that he will recommend going both ways, that is, manned and unmanned vehicles with the aim of making a decision between the two approaches in about a year or a year and a half.

Humphrey pointed out that he thought it was inevitable that the aims of the project would become known and that we should be prepared to discuss them. He said he thought the Soviet Union, however, would be pushing so fast that there soon would be no problem in this connection.

McNamara suggested that we go ahead with an organized Task Force to work out the various problems and issues, and to say nothing in the meantime. As for the attitude toward the press concerning the present meeting, we might just say that the Space Council has discussed in a general way the Defense Department's military space program. Humphrey also suggested that we say to the press that we have reviewed the reports that have been prepared by the various Congressional Committees in connection with proposed military space programs. He suggested that we might also say we have heard from Webb on the present status of the Gemini and Apollo programs.

Humphrey said that consideration would be given to Raborn's proposal for a review by the U. S. Intelligence Board.

Humphrey admonished us to make no ad lib statements concerning material discussed at the Space Council. He suggested that somebody work out a clearly written statement, and at Webb's suggestion, he designated Seamans to work with Ed Welsh to produce a brief, succinct statement on the meeting of the Space Council.

Following the meeting, Humphrey talked to me and said he would like for me to serve on the Task Force in view of the substantial and successful experience the AEC has had

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in the field of international affairs. He said he would speak to Rusk about this and I assured him I would be glad to help and serve in any capacity that was suggested.

G. T. S.

GTS:MC

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MEETING OF THE PRINCIPALS: Secretary of State's Conference Room, 5:00 to 6:30 p.m.

Present: Secretary Rusk, Chairman; Vice President Humphrey, Foster, Fisher, Rowan, Seaborg, Thompson, Raborn, McCloy, Bundy, Keeny, and Admiral McCormick of Joint Chiefs of Staff.

Rusk opened the meeting by saying to Bill (Foster) that he has quite a party coming up to discuss disarmament, although we may be rearming the very day that he gets to Geneva. He asked him to comment on the strategy of starting the meeting when he gets there. He asked whether Foster might open by making a statement updating what we have already proposed, or whether he should make a general policy statement possibly preceded by private talks with the Russians.

Foster said he thought he would start with a statement as o why we are in Viet Nam and he would go back to the Khrushchev letter of January 8, 1964, and the answer from President Johnson of January 21, 1964; he would describe the nuclear threat that faces the world, especially the proliferation problem. He thought that this might all be in his own statement, not a Presidential statement. Then he would go to Tsarapkin to talk privately, emphasizing that in spite of Viet Nam the nuclear race needs to be controlled. He would point out that there have been many meetings last year and this year, and that 114 Nations are vitally interested in the outcome.

Rusk said to Foster that he would have to deal with Viet Nam rather directly, pointing out that we are willing to cooperate, but that our efforts have not borne any fruit, and that he might recapitulate these efforts. Fisher protested that too much detail on Viet Nam might lead to the wrong impression as to our objectives, and he said that the Soviets will certainly bring up this question in any case. Foster pointed out that the Soviets will be the first to speak.

Rusk again made the observation that Tuesday of next week, the opening day of the ENDC Conference, will be a hell of a day to make a speech on disarmament. He asked Foster when he planned to leave. Foster said he would leave on Saturday morning, seeing the British on the way, at their request. Rusk then read from a message that he is sending to the British.

in which he is sharply critical of the British response to our counter proposals to their draft treaty on nonproliferation. This message would state that a reply is hoped for before July 26. The problem is that Germany insists on retaining the concept of MLF, while the UK resists putting in any nonproliferation agreement statements which provide for a MLF. The British feel that this weakens the nonproliferation treaty in a serious manner. Bundy suggested that we might try to persuade the British to add a clause which would be helpful with the Germans, and less objectionable to the British. This language was handed out at the meeting by Fisher, and is attached to this memorandum. Rusk asked if this language would permit the MLF, and Bundy responded that it would. Bundy was concerned that we should not table something in the NAC that would lead to a civil war of words among the Western Alliance. Foster pointed out that the UK had already tabled their resolution in the NAC. Rusk said that in his opinion the UK wouldn't do much before their election. He also said he thought Germany would not give up the MLF. Perhaps it would be best to find out what the Russians have in mind by talking to them before we start; their aim may be primarily to break up the MLF, McNamara's Select Committee, NATO, etc. Bundy again stated that the UK objects to the US version of the nonproliferation treaty because it clearly was written by someone who was defending the MLF. Foster pointed out that Prime Minister Wilson made a speech on December 16, 1964, in which he, in fact, said that he couldn't do what the US would now have him do. Bundy suggested that the Rusk message should be sent to the UK so that we could see what their response would be. He read a copy of Wilson's speech of December 16, 1964, and said that he thought our language is consistent with this and that we should say this in the Rusk memorandum to the UK. Rusk agreed to this. Bundy and others suggested that maybe the Soviets would agree to going back to the earlier '63 language saying they would withdraw from any nonproliferation agreement if there should turn out to be a MLF. Rusk made the observation that it is entirely possible that by the time a MLF came into being that the Soviets would say that it isn't a proliferation step. In any case, we shouldn't conclude this nonproliferation agreement before the German elections. Bundy summarized by saying that we would send the Rusk memorandum to the UK in order to have one more try.

Rusk then suggested to Foster that we go back to a discussion of his opening statement. Foster said that he would probably

open by defending our valid position in Viet Nam, probably as a response to an earlier Soviet statement on this. He would re-emphasize the continued US resolve to respond to subversion; he would then say something on the nonproliferation question and something on the need for a comprehensive test ban treaty and something on the destruction of nuclear warheads.

Rusk said he doubted that Foster should say anything on the destruction of nuclear warheads on Tuesday, in view of the other statement that would be issued about then concerning our future plans in Viet Nam.

Foster said that he had in mind saying that such destruction would be on the basis of the transfer of fissionable material to peaceful uses.

Bundy agreed that this might not be the right thing to say early next week. We couldn't be in the position of going in to get new Congressional authority and then mention at the same time that we were going to destroy nuclear warheads, creating the impression that we did not need them.

Rusk was of the opinion that perhaps the best strategy would be to go into a general negotiating situation, discussing these matters for about a week or so before revealing our detailed position.

Humphrey expressed the opinion that Foster should limit his statement to the nonproliferation treaty and the comprehensive test ban, or at least give these the ~~minimum~~ emphasis. He said he thought that Foster should proceed like a boxer, and feel them out for a while before commiting himself. He should let someone else carry the ball. It might be all right to also propose a cutoff of fissionable material with emphasis on peaceful uses. He said that if we do all the rest that we plan for next Tuesday, and tell the Nation that we have a hell of a job in Viet Nam and that we are in a hell of a mess in Viet Nam, we shouldn't at the same time say we're cutting back on warheads. Humphrey said he thinks we can sell the nonproliferation concept and that we can sell the comprehensive test ban.

Foster remonstrated that we have an approved position in the US on the destruction of warheads. He then went on to ask if there was general agreement on what he might say about the comprehensive test ban treaty, reading from a memorandum that had been prepared as a possible guide for a Presidential message on this. (Attached)

Seaborg objected to the phrase which said that significant advances had been made in the detection of underground nuclear explosions. Foster said that this was nothing more than the language that Stevenson had used in April. Seaborg then read the entire Stevenson April statement, which included reference to the need for inspections.

Bundy and Rusk both agreed with Seaborg that Foster shouldn't make a statement that would make it impossible to maintain the position that we would need inspections, or that would decrease the flexibility of our ultimate position because we have not yet decided on the various alternatives for a comprehensive test ban treaty. Bundy emphasized that we shouldn't tie our hands. Foster countered with the statement that the Ruina report, with which the AEC people were involved, declared that significant progress had been made in the detection of underground. Seaborg disputed this, saying that he had seen a resume of the Ruina report and it did not say that. Seaborg said that the improvement to which Mr. Foster referred had to do with Large Aperture Seismic Arrays, which were yet to be built and demonstrated, and to underwater Arrays yet to be built and demonstrated.

Rusk summarized by saying that perhaps we should recommend to the President that he give a brief message of greeting and that Foster would make the main speech.

Bundy suggested that with respect to the comprehensive test ban treaty, Foster use both parts of the Stevenson statement, that is, that significant success had been achieved with underground detection, but that verification is still needed in a treaty.

Rusk asked Foster whether he now had what he needed, and Foster said that he thought he did, that he basically needed instructions on the content os hif message to the ENDC, and instructions to be tough with the British on Sunday.

Humphrey said he thought that the thing to worry about most in Geneva would be the Russians on Viet Nam, and on the attitude of some of the nonaligned countries. Foster said he didn't think we needed to worry about the nonaligned countries, and Humphrey answered that he hoped Foster was right.

Foster pointed out that this will be a closes session, although it was also noted that there would be the usual corridor

briefings of the newspaper people.

Bundy, in a recapitulation, said that we would be counter-attacking on Viet Nam following a Russian opening statement, and Humphrey agreed that this was the best approach. Foster said he would have a contingency statement ready for this purpose.

Rusk said that NATO had never before been confronted with a disagreement between the US and the UK such as this, and he said that, therefore, a longer meeting than planned would be necessary with NATO.

The meeting broke up with the understanding that the President would give a general message of greeting, and that Foster would make an opening statement that included a rebuttal on Viet Nam, and statements on the US desire for a nonproliferation treaty and for a comprehensive nuclear test ban, with the description of the comprehensive test ban to be general enough so as not to tie our hands in the future. Possibly Foster's message should include some other aspects of arms limitations as well, such as cutoff of fissionable material.

G. T. S.

GTS:MC

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August 25, 1965

MEETING OF PRINCIPALS: Secretary of State's Conference Room, 4:30 to 5:30 p.m.

Present: Rusk, Chairman; McNamara, Thompson, Wheeler, Seaborg, Tape, Fisher, Marks, Bundy, Keeny, Scoville, McNaughton, Vice President Humphrey, Howard, Chamberlin, others.

Rusk opened the meeting by saying he understood we were to hear some briefings, which Fisher affirmed, and called on Frosch.

Frosch showed charts which depicted yields of nuclear explosives vs. equivalent earthquake magnitudes, the numbers of seismic events and those detected and those identified, using the present augmented AEDS system, the 10 large aperture seismic array (LASA) systems to be available in 2 or 3 years, and the LASA system augmented with an ocean ~~bottom~~ bottom LASA at Kamchatka-Kurils.

Seaborg pointed out that to the 80 events, unidentified by seismic means, should be added the 40 undetected events under the present system, and that 2 to 3 years may be too short a time for the installation of the LASAS. Seaborg also asked Dr. Frosch to summarize the possibility of evasion by underground tests, and Frosch pointed out the possibilities of decoupling and the conducting of underground tests simultaneously with earthquakes in order to hide the evidence.

Scoville described the role of photographic intelligence in further reducing the number of unidentified events, and presented a very optimistic picture in this regard.

Howard then presented a description of the progress and lack of progress that could be made by the US, USSR and China under the present test ban, and also under a threshold type test ban and a comprehensive test ban, with and without cheating by the USSR. Howard's assessment seemed to generally agree with that presented by Labowitz in his document of August 21, 1965.

Rusk then asked Fisher to summarize the present situation in Geneva.

Fisher said that the prospects for a nonproliferation agreement are very dim and, therefore, emphasis is being placed

on a comprehensive test ban treaty as a means for preventing proliferation. However, the desire is not so much to table new proposals as to give an assessment of the present factual situation. Since the Geneva negotiations might adjourn as early as September 9, and no later than September 23, it will be difficult to clear a changed US government position by that time. He said that if it were possible to get a non-proliferation agreement, he would stay with the present limited test ban. However, he feels that we probably could get most of the nonnuclear states to forego nuclear weapons by means of a comprehensive test ban.

Rusk pointed out that the Italian proposal (that is, a proposal that the nonnuclear states pledge nonproliferation while the nuclear states are continuing their discussions) would also accomplish the same thing.

Fisher said that he thought this was true, if the Italian proposal could be approved by the nonnuclear states. He pointed out that the reduction of the unidentified events from 80 to about 30 through improvements of detection, intelligence, etc. should make it possible to reduce the number of on-site inspections in a comprehensive test ban treaty.

Rusk asked McNamara for his opinion, and McNamara said he felt that now is not the time to put forward a new proposal for a comprehensive test ban treaty. He felt that failure in such an effort would cause us to pay a huge price.

Humphrey said that a threshold treaty would only lead to distrust and acrimony.

Thompson said he doubts that the Soviets want a comprehensive test ban treaty now.

Wheeler suggested that we should be conservative in describing our seismic detection capability, and Seaborg agreed with him.

Rusk summarized by saying that in view of the fact that there might be a national emergency by the time Congress comes back in January, and in view of the lack of interest by the Soviet Union, it doesn't appear to be to our advantage to press for a marginal type of comprehensive test ban treaty. He felt that we should stay where we are at the ENDC unless the Soviets come out with some interest in including inspection.

Fisher pointed out that the Indian question wouldn't be solved by such a posture.

Bundy added that, of course, the Indians are the problem, but what is their position. He agreed with McNamara that shifting our position on a comprehensive test ban treaty in Geneva at the present time would not be good; if we could get together privately with Moscow and work out an appropriate number of inspections, that would be a different matter.

Rusk felt that we should just tell the nonnuclear states that if they want to stop the proliferation of nuclear weapons, they should agree among themselves to go ahead and stop. He also mentiondd the possibility of the nonnuclear states going ahead without India, and perhaps we could force India into such an agreement by threatening to cut off our aid if she didn't adhere. He said that the problem of the 5 nuclear powers to limit and reduce their stockpile of nuclear weapons is quite another problem than that of preventing proliferation. Rusk suggested that Fisher and I draft instructions to Foster which would basically say that the US should stay with its present position on the comprehensive test ban treaty; we would like to hear a definition by the Soviet Union of their position, or their reaction to our position, and that we should offer to make information available on the improvements that have been made in seismic detection. Seaborg said we should be careful on the latter to distinguish between actual and projected or prospective improvements. Rusk said that he would confer with Fisher in the preparation of these instructions.

Humphrey made the point that we don't have to change our position on the comprehensive test ban treaty. It is often better just to stay with a sound position rather than just try to change it in order to change. He said that he likes the position of the Italians (Fanfani). He said that he doesn't feel that there would be any use in talking about a totally new US position between now and September 9; that the necessary clearances by the President and the Legislative could not be accomplished by that time. He also said that he was against a threshold treaty all the way.

Rusk made the point that he felt that not many of these nonnuclear states involved in the discussions are really

interested in disarmament.

Thompson added that he felt under a comprehensive test ban treaty, to which the Chinese did not adhere, it might be possible that the Chinese would test weapons for the Soviet Union.

G. T. S.

GTS:MC

See 12, 118

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Master copy

DoD

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

FEB 9 1966

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 062067.1

915243

Dear Bob:

I refer to your letter of February 2, 1966, forwarding a Joint Memorandum for the President in which the Department of Defense and the Atomic Energy Commission would join in a statutory determination authorizing the release of U. S. atomic information to the North Atlantic Treaty Organization (NATO).

During the Commission's consideration of the proposal, Mr. W. J. Howard, ATSD(AE), advised, in response to our inquiry, that you did not intend the determination to authorize the communication of atomic information on high energy X-ray outputs. He also expressed no objection to our desire to have the documents explicitly reflect this fact as well as to have the Memorandum for the President indicate that this determination would permit the communication of atomic information on multiple targeted re-entry vehicles and enhanced neutron effects.

Accordingly, pursuant to Executive Order 10841, as amended, I have signed the Joint Memorandum for the President which, with its attachment, now incorporates the foregoing clarifications; and I am enclosing it for your review and transmittal to the President.

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REVIEWED BY [signature] DATE 1/19/90
1/19/90

While, as the Memorandum for the President states, the scope of the determination is far-reaching and involves some finite risks that one or more of the recipient NATO states could derive some value for an independent nuclear weapons development program, we too have concluded that the information to be furnished would not provide significant nuclear weapons design, development or fabrication assistance to any of them.

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I, nevertheless, believe that we must make every effort to see that the stringent controls and reporting procedures of the North Atlantic Council's ATOMAL programs are vigorously enforced to insure the protection of the information to be released under this authority and to prevent its unauthorized disclosure and dissemination.

DOCUMENT TRANSMITTED
HEREWITH CONTAINS
[redacted]

[redacted]

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
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[redacted]

The Commission notes that you will notify the Joint Committee on Atomic Energy prior to the communication of information authorized by this determination.

Cordially,

(Signed) Glenn T. Seaborg

Chairman

The Honorable Robert S. McNamara
Secretary of Defense

Enclosure:
Cys 1A & 2A of Joint Memorandum
for the President w/cys 3A & 4A
of attachment (SRD)

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See 12, 409

Title document contains 2 pages
No. 1 of 6 Copies, Series A

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 064069

Dear Dean:

I enclose a more integrated document on Cabriolet than the materials sent to you on short notice last week. I am sending you this because, before deciding whether I want to talk to the President on Cabriolet, I thought you and I might usefully have a further personal discussion of the matter.

At lunch with Walt Rostow today, the question was raised of postponing Cabriolet for six months while we sought an understanding with the Soviets on Plowshare under the Limited Test Ban Treaty. Based on past experience and current Soviet activities, I have doubts that any progress will be made because I have doubts that the Soviets presently need or want an agreement with us. They may merely want to continue conversations with us because under the present asymmetrical way of interpreting the treaty, the Soviets are not hindering themselves and we are, in our respective Plowshare programs. (I am forwarding, under separate cover, a report from Dr. Reichardt on the Soviet program).

Apart from the immediate issue of Cabriolet, I therefore think we should return to the question of defining what we mean by the phrase "cause radioactive debris to be present." You may remember that two years ago in early '64, the President asked us to look at this and related questions. Since then, the reduction of background levels and the greatly increased identification capabilities mean that a strict standard of identification of debris could become a scientific stunt of hunting atoms at international borders. Even a "fully contained" underground test causes some release and could thus become a treaty violation. Obviously, a rule of reason is needed.

On a still longer range basis, I think we should give further thought to the potential contribution of our Plowshare program in preventing the spread of nuclear weapons - particularly, in preventing Nth countries from developing weapons under the guise of Plowshare. Finally, we should give thought to updating the government's position on the role of Plowshare under a

OFFICE ▶	COMM	CHAIRMAN
SURNAME ▶	Palfrey/ap	Seaborg
DATE ▶	4/12/66	

AEC-318 (Rev. 9-53) U. S. GOVERNMENT

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J. Diaz 8/16/88
REVIEWED BY DATE
Carlwin 8/22/88
*w/o Dr. Reichardt's report

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 01e4019.2

Comprehensive Test Ban Treaty.

Primarily, however, it is important that we arrive at a decision on Cabriolet, as soon as possible.

Cordially,

[redacted]
Chairman

Honorable Dean Rusk
Secretary of State

Enclosure
Cy 2A "S" document on
Cabriolet
Dr. Reichardt's report (s/c)

Cy 3 - [illegible]

See 12, 606

JUN 16 1966

Dear Adrian:

Mr. Foster's memoranda to Principals of May 26, 1966 and June 9, 1966 on the subject of Threshold Test Ban Proposal has been discussed by the Commission.

In my letter of January 19, 1966 to Mr. Foster, I listed several factors and urged that they receive serious consideration in any further discussion of the proposed treaty. A copy of that letter is enclosed (Enclosure I).

With respect to paragraph a. of Enclosure I, our view remains that by itself, e.g. without coupling to a strong non-proliferation treaty, the proposed threshold treaty will have little inhibiting effect upon proliferation.

With respect to paragraph b. of Enclosure I, concerning the impact of such a treaty upon development of ABM warheads by the USSR and the US. the study completed recently by the Board of National Estimates

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DELETED The recent study by IDA addresses the question of the impact of the proposed treaty upon ABM warhead development by the US. As you know, while IDA states in its report that the study was based, in part, upon discussions with members of the staffs of LASL and LRL, neither AEC nor the weapons laboratories were provided an opportunity to review the report prior to its distribution. We now have the comments of the weapons laboratories on the report; they are set forth in Enclosure II. The Commission concurs in the conclusion that certain of the modifications suggested by IDA to provide alternative Nike Zeus warheads [redacted] DELETED [redacted] We also share their concerns regarding the options foreclosed by the treaty with respect to future weapon developments and with respect to vulnerability studies.

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11/14/86

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[redacted]

With respect to paragraph c. of Enclosure I, concerning the capability to identify seismic events above the proposed threshold, I understand that the panel considering the new technique proposed by AFTAC has not yet issued its report. We will not be in a position to evaluate the technique, particularly its possible limitations, in given situations, until we see that report.

With respect to paragraph d. of Enclosure I, which relates to the question of international controversy concerning the magnitude and nature of seismic events, we note that it is now proposed that the treaty be monitored only by national networks and that it is not proposed that a unique magnitude determination for a given event be available to all the parties. Such a situation would leave the way open to international controversy concerning the magnitude of a given event. Furthermore, we note that it is proposed that the treaty include language imposing an obligation upon each party "to exert every effort, by designing for substantial margins of safety and by all other means, to guarantee against exceeding the threshold". However, the draft position paper also states that the US "would be in a position to carry out contained underground tests safely below the threshold of 4.75 [redacted] Elsewhere in the paper it is stated that the probability of exceeding that threshold [redacted] It appears to us that in light of ACDA's estimate of the finite probability of a [redacted] test exceeding the threshold, the absence of a unique magnitude determination, and the proposed obligation to provide a guarantee, and other possible uncertainties, the practical limit of yield we may expect to have imposed upon our testing program would be substantially less than [redacted] Since the practical limit of testing would depend upon factors not controlled by AEC, we cannot be more precise.

In your memorandum of June 14, 1966 to the Principals, you state that you do not intend to discuss the question of peaceful nuclear explosions under the proposed threshold treaty "until further notice". We believe strongly that this question must be resolved within the US government before any conclusion is reached that a threshold treaty is worthy of further consideration. In view of the discussion at the meeting of the Deputies, we are examining the question in detail on an urgent basis. We hope to have information shortly as to the possibility of obtaining data useful in weapons development (and not otherwise

[redacted]

obtainable under several treaty situations) from various types of peaceful nuclear explosions. We also will have an evaluation of possible procedures which may be employed to limit the acquisition of such data. We intend to make the results of our study of this question available to the agencies represented on the Committee of Principals in order to permit prompt resolution of this question.

Cordially,

(Signed) Glenn T. Seaborg

Chairman

Enclosures:
Enclosure I
Enclosure II

Honorable Adrian S. Fisher
Acting Director
U. S. Arms Control and
Disarmament Agency

066121 7 SOFG/D2E/16

ATOMIC ENERGY COMMISSION
WASHINGTON, D.C., 20545

SOFG/D2E/16

JAN 19 1966

[redacted]

Dear Bill:

I have discussed your memorandum of January 17, 1966, subject: Threshold Proposal, with my fellow-Commissioners and wish to apprise you of our views. These views take into account the recent discussions by the Deputies of this matter, in which Commissioners Palfrey and Tape participated. They are also based upon the papers, presenting relevant factual information requested by the Deputies, which were transmitted to the Deputies by Commissioner Palfrey's memorandum of January 14, 1966.

a. While the proposed treaty would limit the size of nuclear tests conducted by the nuclear powers, it would permit both nuclear and non-nuclear powers to conduct nuclear tests below the treshold. The proposed treaty would not impose substantial technical inhibitions upon a country considering embarking upon nuclear weapons development, beyond those which the present limited test ban treaty already impose. Some countries could stockpile rudimentary nuclear weapons, with confidence in their operability, without nuclear testing. They, as well as other countries, could conduct low-yield underground nuclear test programs with care and obtain more efficient nuclear weapons, while remaining under a 4.75 seismic magnitude. Given these technical considerations, it does not appear to us that an aspiring signatory nation would conclude it was necessary to denounce the treaty, even if it had concluded that it was necessary to conduct tests in order to acquire a stockpile of nuclear weapons. That being the case, we consider that such a treaty would, of itself, contribute only marginally to discouraging proliferation of national nuclear weapons capability.

b. Such a treaty, on the other hand, would, without question, impose serious inhibitions on the achievement of some goals of AEC's weapon development program, which are important to U.S.

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Letter CH To DoE
Gilbert C Hahn 8/13/90

security. That impact is shown in the paper transmitted by Commissioner Palfrey's memorandum to the Deputies of January 14.

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d. A system involving standard high quality seismic stations, supplying data to an international data center, offers a possibility that, given

sufficient time and effort, controversy over the magnitude of events could be avoided. The system discussed in the reference paper has not been described in sufficient detail, however, to permit a conclusion that it would be adequate for that purpose. On the other hand, no way has been shown by which international controversy concerning the nature of events registering seismic magnitudes greater than 4.75 can be avoided under the proposed treaty. The U.S. position on this question has been that on-site inspections are essential to obtain internationally demonstrable verification of the nature of a seismic event. The proposed treaty, unlike the existing limited test ban treaty, would absolutely prohibit certain underground nuclear tests and, therefore, raises the question of verification that certain seismic events are nuclear in origin. In the absence of national capability to verify fully the nature of such events, the omission of on-site inspections from the proposed treaty would set an unfavorable precedent for a comprehensive treaty.

We urge that these factors receive serious consideration in any further discussion of the proposed treaty.

Cordially,

Glenn T. Seaborg

Honorable William C. Foster
Director
U. S. Arms Control and
Disarmament Agency

13, 79

DEPARTMENT OF THE NAVY
THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C. 20350

IN REPLY REFER TO
OP-755/chc
Ser 059P75
9 JUN 1966

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 67216

0907055

From: Chief of Naval Operations
To: General Manager, Atomic Energy Commission
Via: Chairman, Military Liaison Committee to the Atomic Energy Commission

Subj: Radioisotope Power Source for Advanced Navy Navigation Satellite (U)

Encl: (1) Preliminary Specifications for Radioisotope Power Source
(2) Proposed Delivery Schedule for Radioisotope Power Sources

1. (C)The Navy Advanced Navigation Satellite Program is directed toward the development of a long life satellite with a goal of five years of useful lifetime in orbit. The program for this second generation navigation satellite has progressed to the definition of major satellite sub-systems in terms of meeting long life requirements in orbit.

2. (C)The definition of the power supply sub-system has concluded with a design requirement for the utilization of a radioisotope power source. This requirement is predicated on a power capability of 30 watts; to be developed in the form of 3 modular 10 watts units which will permit the use of these units in a redundant manner through switching techniques to provide 20 watts of electrical power output.

3. (C)Flight experience has indicated batteries and solar cells to be the weakest part of present Navy satellite systems, whereas the radioisotope thermoelectric generators employed as a cooperative effort with the AEC in the earlier Transit navigation satellites were capable of reliable and extended operations in a space environment.

4. (U)It is, therefore, requested that the Atomic Energy Commission undertake the development of a radioisotope power source for application to the Advanced Navy Navigation Satellite. Enclosures (1) and (2) furnish preliminary technical specifications and program goals for delivery of the radioisotope power source units.

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* Letter OASD Boebling to DOE, DC
Gilbert dated 9-1-87
J. Diaz 1/4/88

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Ser 059P75

9 JUN 1966

5. (C) It is desired to have the safety analysis study and product safety assurances conducted by the Commission. Further, technical assistance may be required of the Commission in obtaining satellite launch approval of the radioisotope device.

6. (U) Your cooperation with the Navy in the development of this radioisotope power source will be appreciated. Detailed guidance in connection with this development will be furnished through the following working committee:

(a) Navy Coordinator:
Director, Nuclear Power Division, NFEC.
Commander J.C. LeDoux, Telephone 697-1209

(b) Program technical representatives:
Commander C. W. Meyrick, NASC, 696-3630
Commander G. M. McCabe, SP, 696-3368
Mr. Ted Wyatt, APL, 776-7100 X-2800

HAROLD G. BOWEN, Jr.
Deputy Chief of Naval Operations
(Development)

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Preliminary Specification for Radioisotope Power Source

090056

The following requirements for a radioisotope power source for an earth orbiting satellite.

Electrical performance - deliver 20 watts at 3-6 volts at the end of 5 years in orbit.

Weight - less than 13 pounds including attachment and connector.

External configuration - stay within a right octagonal prism 16 inches flat to flat, 10 inches high; mounting flange may extend beyond 16 inches dimension. The skin of the spacecraft will be used as part of the radiator for heat disposal. At least 50 watts and at most 300 watts will be radiated by spacecraft skin. Spacecraft is right octagonal prism approximately 20 inches high and 22 inches flat to flat.

Orbit - polar, circular, 600 nautical miles altitude, minimum percent sunlight - 70%.

Ground operation and handling - must be capable of safe operation under ground ambient conditions, not necessarily at full power, but space operation must be determinable function of ambient operation. Provision must be made for convenient ground handling. Should be able to operate open circuited for a short period of time. (1 minute)

Environmental condition - during the launch phase the generator will experience acceleration, vibration, shock, acoustical noise and pressure transition from sea level pressure to vacuum.

Mechanical Environment

A) Acceleration

Axis	Level, (g's)	Duration, (Min.)
Thrust	36	3
Transverse (2 axes)	3	1

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J. Diaz 1/4/88

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B) Shock - Thrust Axis

Half sine-wave pulse-duration 10 to 15 milliseconds - 30g peak. Must withstand three applications of this pulse.

C) Spin

1. 230 ±10 rpm about thrust axis for a duration of 15 to 20 minutes.

2. Despin from 230 rpm in 1 second.

3. Feet radius(3)

D) Vibration - Sinusoidal

Axis	Freq. Range -(cps)	Duration (Min.)	Accel. g,(0-peak)
Thrust	5 - 50	1.66	2.3
	50 - 500	1.66	10.7
	500 - 2000	1.00	21.0
	2000 - 3000	0.30	54.0
	3000 - 5000	0.36	21.0
Lateral (X-X and Y-Y)	5 - 50	1.66	0.9
	50 - 500	1.66	2.1
	500 - 2000	1.00	4.2
	2000 - 5000	0.66	17.0

E) Vibration - Random

Axis	Freq. Range - (cps)	Test Duration - (Min.)	PSD Level (g^2/cps)
Thrust Lateral (X-X and Y-Y)	20 - 2000	4	0.07

Instrumentation - install instrumentation to measure hot and cold junction temperatures, outside shell temperature, and pressure (if pressurized).

[redacted]

[redacted]

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0909057

Proposed Delivery Schedule for Radioisotope Power Sources*

Item	Deliver
1 Electrically Heated Unit	September 1967
3 Electrically Heated Units	January 1968
1 Fueled Prototype Unit	September 1968
3 Fueled Flight Units	November 1968
3 Fueled Flight Units	January 1969
6 Fueled Flight Units	April 1969
6 Fueled Flight Units	July 1969
6 Fueled Flight Units	September 1969
6 Fueled Flight Units	December 1969
6 Fueled Flight Units	March 1970
6 Fueled Flight Units	June 1970

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* This schedule makes the following assumptions:

1. Each unit produces 10 watts at the end of 5 years.
2. Three 10 watt units are required for each 20 watt satellite, thereby providing redundancy.
3. The 43 units requested will provide power sources for 14 satellites.

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Carl Wilson 11/89
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[redacted]
*Letter OASD Budding to DoE, OC
Gilbert dated 9-1-87
J. Diaz 1/4/88

CROSS REFERENCE SHEET

Document # 907902

TITLE OF DOCUMENT National Security Action Memo.
TO: Secretary of Defense, no date
re delivery of weapons to DOD

This document requires further classification review and has been removed from this folder.

Jeffrey B Hahn
Name

8/19/86
Date

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SOFG/D2E/7

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

MAR 24 1967

Dear Mr. President:

The purpose of this letter is to present for your approval the underground nuclear test program planned for execution in the fourth quarter of FY 1967. This program has been designated LATCHKEY IV.

The LATCHKEY III test program has proceeded essentially as planned.

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The program proposed for LATCHKEY IV consists of [redacted] tests sponsored by the Atomic Energy Commission, [redacted] to demonstrate reliability and safety of prototype warheads, [redacted] directed at increased penetration capability, [redacted] directed at achievement of hot x-ray outputs, [redacted] to develop primaries for [redacted] weapons, [redacted] devoted to the advancement of basic nuclear technology, and [redacted] to further the PLOWSHARE program technology. One Department of Defense experiment is proposed for the fourth quarter program. A description of these experiments is provided in Enclosure 1.

Each of the tests described in Enclosure 1 is designed to be fully contained. All events will be subject to the thorough review of the agencies concerned and will be executed only with the expectation that they can be conducted within the requirements and constraints of the limited test ban treaty.

CY FOR CHAIRMAN SEABORG

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The LATCHKEY IV test program will require a maximum expenditure of [redacted] plutonium-239, [redacted] uranium-235, and [redacted] uranium-233. A proposed authorization to expend these materials and conduct the fourth quarter test program is provided in Enclosure 2.

Respectfully yours,

(Signed) Glenn T. Seaborg

Chairman

The President
The White House

Enclosures:
1. Cy 1A LATCHKEY IV Test Program
2. Cy 1A Draft Endorsement

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NOT DECLASSIFIABLE REFERENCE SHEET

Title of Document DRAFT 4/14/67
"Letter from President to Chancellor Kissinger"

Date 4/14/67
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* Letter NSC Graboske to DOE, OCTP Siebert 5/26/89

W. Tench
Name

8/8/89
Date

76257-76261
inclusive pages

See 15, 639

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

SOFG/D2E/17

[redacted]

Dec. 22, 1967

This document consists of 2 pages
No. 1 of 1 Copies Series

not mentioned as attached but why not? Use

The President
The White House

Dear Mr. President:

The purpose of this letter is to present for your approval the underground nuclear test program planned for execution in the third quarter of FY 1968. This program has been designated CROSSTIE III.

The CROSSTIE II test program has proceeded generally as planned.

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These events are included in the program proposed for the third quarter.

The underground test program proposed for CROSSTIE III consists of [redacted] tests sponsored by the Atomic Energy Commission: [redacted] to demonstrate the reliability and performance of prototype warheads, [redacted] directed at the development of tailored nuclear outputs, [redacted] directed at primary development [redacted] devoted to the advancement of nuclear technology, [redacted] to obtain seismic calibration and [redacted] devoted to the advancement of technology for the PLOWSHARE program. Two Department of Defense weapon effects experiments are proposed for the third quarter. The Department of Defense will also conduct a major add-on experiment, [redacted] in conjunction with the Atomic Energy Commission advanced technology event, [redacted] A description of the individual experiments proposed for the third quarter is provided in Enclosure 1.

One of the tests deferred to the third quarter, FAULTLESS, will be conducted off the Nevada Test Site. This seismic calibration experiment will be conducted at the Central Nevada Supplementary Test Site located in the Hot Creek Valley approximately 65 miles northeast of Tonopah, Nevada, and approximately 165 miles northwest of Las Vegas, Nevada.

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Specific approvals for conducting the PLOWSHARE cratering experiments, CABRIOLET and BUGGY I, are being handled by separate correspondence.

With the exception of the PLOWSHARE cratering experiments, CABRIOLET and BUGGY I, each of the experiments described in Enclosure 1 is designed to be fully contained. All tests will be subject to a thorough review by the agencies concerned and will be executed only with the expectation that they can be conducted within the provisions of the limited test ban treaty.

To conduct the CROSSTIE III test program, a maximum expenditure of [redacted] plutonium-239, [redacted] uranium-235 and [redacted] uranium-233 will be required. A proposed authorization to conduct the third quarter test program and expend these nuclear materials is provided in Enclosure 2.

Respectfully yours,

(S) Glenn T. Seaborg

Chairman

Enclosures:
1. Cy 1A CROSSTIE III Events
2. Cy 1A Draft Endorsement

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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OFFICE OF THE CHAIRMAN

MAY 2 1968

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 0890445

The President
The White House

915268

Dear Mr. President:

The publicity concerning the recent nuclear weapons test, designated FOXCAR, which we conducted in Nevada, suggested that it may be timely to review for you the need for the underground nuclear weapons test program, its plans, its safety aspects, and the public reactions to this program. Also in this connection, as you requested I am enclosing a proposed reply to the letter of Mr. Howard Hughes on this subject.

The Need for Underground Testing

Our national defense posture is predicated on our planned underground nuclear weapons test program. For example, without our current program (a) the [redacted]ED warhead planned for our SPARTAN antiballistic missile system could not be stockpiled, and (b) the vulnerability of the POSEIDON to enemy countermeasures and therefore its ability to penetrate enemy defenses could not be determined.

Without underground testing much of the dynamic nature of our weapons program would be lost and our strategic deterrent would erode with changes in offensive and defensive weapons systems. The necessity for maintaining a dynamic posture was foreseen by the establishment of the four safeguards* in connection with Senate consent in 1963 to the limited test ban treaty. These safeguards were reaffirmed by you in 1964. A vigorous underground test program is not only a specific commitment, it is essential to the other three safeguards.

The need for our pursuit of advances in nuclear weapon technology is further emphasized by the fact that the Russians have deployed

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*The four safeguards are:
1. A vigorous underground test program.
2. Viable nuclear weapons laboratories.
3. Readiness to resume atmospheric testing.
4. An improved capability to detect clandestine underground nuclear tests.

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an ABM system and have continued their underground nuclear test program. The Russians conducted an underground test of approximately the same yield as our test [redacted] in October 1966.

Program Plans

When the needs for higher yield tests for the SPARTAN program became apparent in 1966, the AEC began to plan supplemental test sites in Central Nevada and Amchitka which were expected to permit a conservative and timely increase of yields to the level required. This program has been successful and on schedule so far. We conducted a [redacted] calibration test at the new Central Nevada site in January 1968 and we have a 1 MT calibration test scheduled at Amchitka in March 1969.

We plan to utilize the Nevada Test Site and the two supplemental test sites in a manner which will provide us the required test data in an economical and timely way without undue risks to the public. The present Nevada Test Site is expected to continue to be our major testing ground because operations there are the least costly and least time-consuming. However, it is anticipated that yields of tests conducted there will be less than 2 MT. Amchitka, on the other hand, is expected to provide the highest yield capability (up to 6 MT) but it is the most expensive and time-consuming place to operate. The planned Central Nevada site is expected to be intermediate in terms of yield limit (about 3 MT), cost and time. We expect that the yield of the next high yield test at the present Nevada Test Site will not be significantly greater than last Friday's test of 1.2 MT. This test is now planned for August 1968, pending final analysis of the recent 1.2 MT BOXCAR event. I want to assure you that the progressive increase in yields at all test sites will be performed on a conservative basis, with a careful analysis of the effects of the previous events before proceeding with a higher yield.

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Safety Aspects of the Program

The three areas of concern regarding the safety of underground nuclear tests are: containment of radioactive debris, ground shock damage, and contamination of ground water. Analysis of the containment of nuclear explosions has resulted in a procedure which has consistently and fully contained all higher yield tests. Tests in the megaton range are conducted at depths of almost a mile underground. The minor leakage of debris which we have on occasion experienced with yields below 20 KT is relatively well understood

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FOLDER-PAGE 089014.7

and our test operations are carried out in a manner to assure meeting our obligations for health and safety and for adherence to the limited test ban treaty.

Extensive measurements of the seismic response to our tests in Nevada have provided considerable insight into the seismic response pattern of the area. Although seismic response remains somewhat unpredictable and includes some apparently anomalous behavior, we have consistently taken these uncertainties into account for each new test. While there were a few early complaints of damage from the December 1966 event, these did not result in any damage claims. Last Friday's event resulted in a few dozen minor complaints. It is still too early to assess the possibility of claims arising from these complaints.

Some have expressed a concern for Hoover Dam. It should be noted that damage to structures at the Hoover Dam site from underground nuclear testing in Nevada is very remote. These structures have withstood natural earthquake shocks 150 times greater than the earth shocks generated by the recent test. As a related matter, it should also be noted that the possibility of triggering earthquakes by nuclear detonations has been studied extensively. These studies concluded that nuclear detonations in Nevada cannot trigger or cause natural earthquakes.

Ground water location and movement have been studied extensively and radioactive contamination has not been carried off site. Indeed a careful analysis of all data has led to the conclusion that such debris as may be injected into the ground waters by tests in the Nevada Test Site will not be carried off site in detectable quantities.

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Public Reaction

The underground test program has generally been accepted readily in the Las Vegas area. Occasionally, as yields have increased, we have had expressions of public concern. The test of April 26 did attract more than the usual amount of attention; however, we are unable to determine how much of this concern was directly or indirectly related to the efforts of the Howard Hughes organization. Beginning almost a year ago we offered Mr. Hughes and any technical experts he might choose a briefing on our safety program. We have recently reaffirmed this offer.

On the national scene, the (St. Louis) Committee for Environmental Information, a long-standing critic of nuclear testing, called for

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Chr USAEC, 1961-72
FOLDER-PAGE 0890148

a postponement of the test because of possible seismic damage, earthquake triggering in California, and release of radioactivity. The Women Strike for Peace, citing the concerns of the St. Louis Committee also called for a postponement (of indefinite duration). Women's International League for Peace and Freedom called for cancellation, on grounds that the test would be dangerous and produce tension. The Federation of American Scientists, SANE, and the United World Federalists called for postponement of the April 26 test (and all others) until after consideration by the U.N. General Assembly of the nonproliferation treaty. Several dozen letters and telegrams were also received from individuals protesting plans for that test.

Concern has been expressed by some individuals and organizations that continuation of nuclear weapons testing, or calling its existence to public attention, will somehow impede the successful conclusion of the nonproliferation treaty. Of course, those who do not wish to join in the treaty may very well point to our continued testing as an excuse for not doing so.

Test Review Procedures

The Commission has conducted and is continuing an extensive, long-range research program into the containment of nuclear tests, the resulting ground shock and its effect on structures and earthquake areas, and possible ground water contamination. The Commission and its laboratories extensively examine each test based on this research and experience with underground testing. Representatives of other government agencies such as the Public Health Service, Environmental Science Services Administration, and the Geological Survey also participate in the review of these tests. As part of these review procedures, the underground test program is initially reviewed by a committee you established [redacted] This Committee includes your Special Assistant (National Security), your Science Advisor, the Director of the Bureau of the Budget, the Secretaries of State and Defense, the heads of Central Intelligence and the Arms Control and Disarmament Agency, the Chairman of the Joint Chiefs of Staff, and the Chairman of the Atomic Energy Commission.

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Respectfully yours,

(Signed) Glenn T. Seaborg

Chairman

Enclosure:
Proposed reply to Hughes (U)

See 16, 409

UNCLASSIFIED

Dear Mr. Hughes:

This is in response to your letter of April 25 requesting postponement of the underground nuclear test which was conducted on April 26 and which I personally considered before coming to a final decision.

I approved execution of this test only after considering its importance to our national security and receiving the Atomic Energy Commission's assurances that all of the usual extensive safety checks which are made before each test had clearly demonstrated that there was no cause for concern. I also understand that your representative met personally with high ranking AEC officials prior to the execution of this test and received similar safety assurances.

As you are aware, the test did not release any radioactive debris to the atmosphere and did not cause any significant damage. In short, last Friday's test performed entirely as expected and should re-enforce your confidence in the ability to predict the performance of such tests.

You expressed concern about the dumping of radioactive debris. The AEC had extensively studied the question of ground water contamination by radioactive material from underground nuclear explosions and had thoroughly assured themselves that such contamination would be confined well within the boundaries of the test site.

Public health and safety have always been of paramount importance and concern to the U. S. Government and to me personally. I can assure you that it will continue to be so.

You alluded in your letter to test plans for the Nevada Test Site and the supplemental test sites in Central Nevada and Amchitka. I would like to clarify this matter. The present Nevada Test Site, which contains Pahute Mesa, will continue to be the principal location for the underground nuclear testing program essential to our national defense. The April 26 test under Pahute Mesa was never planned for any other location. Similar tests may well be carried out at the Pahute Mesa in the future because, without sacrifice of safety, this is the most effective and expeditious place to conduct them. The supplemental test sites are just that, sites at which the highest yield tests which we find to be necessary can be carried out without undue risk to population centers.

The Atomic Energy Commission and I are very interested in seeing the evidence your scientists and technicians have gathered demonstrating the risk and uncertainty of megaton explosions. We would also like to understand how you propose to have our nuclear test program proceed more rapidly than at present. The AEC's scientists stand ready to meet with yours to obtain

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these important insights and to provide information on our extensive safety programs in accordance with the AEC's earlier promise.

Sincerely yours,

mSRS/S/2

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Carlson 5/15/98
REVIEWED BY DATE

*Memo DAS TO DOE, OC
Gilbert dated 7/11/88
J. Diaz 8/16/88

June 3, 1968

MEETING OF PRINCIPALS: Secretary of State's Conference Room, 4:30 - 6:00 p.m.

Present: Messrs. Rusk (Chairman), Seaborg, Tape, Nitze, Gen. Wheeler, Wenk, Hornig, Helms, Marks, Keeny, Farley, Foster, Paine, Adm. Taylor at the table, and others in the room.

Rusk opened the meeting by saying that we were going to discuss the U.S. position on a possible treaty banning the emplacement of weapons of mass destruction on the seabed. He then asked Foster for a summary of the meeting of the Deputies. Foster responded by saying that the Deputies discussed the four points raised in the Principals' meeting on May 14, 1968. The results of the Deputies' meeting were summarized in their memorandum of May 28, 1968. He said that the Deputies were in general agreement except for the Joint Chiefs of Staff. Foster went on to summarize a number of points in the memorandum covering the meeting of the Deputies.

Rusk inquired whether verification was a problem in a manner similar to the way it was a problem in the treaty banning nuclear weapons in orbit. Nitze indicated that he thought there was a similarity between the present seabed treaty which was under discussion and the treaty banning the orbiting of nuclear weapons. He said that in the latter treaty it is possible to orbit all except the warhead which could be added after all the other problems have been solved. He said that the same concept is true here, that is, you could put the nuclear warheads into place at the last minute after everything else had been emplaced. Rusk then asked Paul to give his views on the proposed treaty to ban weapons of mass destruction from the seabed. Nitze said that he had problems with each of the four points that were discussed in the Deputies' memorandum. For example, he saw a legal problem with respect to the 12-mile limit and its relationship to our difference of opinion in this area relating to the law of the sea. Rusk inquired as to

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whether it wouldn't be possible to decouple from the 12-mile limit and make it something like, for example, 20 miles in the seabed treaty. There seemed to be general agreement that this could be done. Rusk asked that this be checked out around town.

Nitze went on to comment on the third point in the Deputies' memorandum, that is, that although they see no military advantages to the ACDA proposal, it might have some economic advantages. Nitze said he did not agree with this argument at all and that it might be possible that a sea based system could save some money. He also thought it might be possible that sea based nuclear weapons would have advantages sometime in the future, say in ten or fifteen years, and, therefore, we should limit our considerations by some such phrase as "as far as we can now foresee." Seaborg disputed this point of view, saying that it would never be possible to make any progress in arms limitation if we limited ourselves to steps of only banning things where there might never be any advantage in the future. He used the analogy of the Limited Test Ban Treaty, saying that we certainly couldn't say that it would never be of advantage to test in the atmosphere, but we had to make a determination of relative advantages based on the many other considerations which in balance led us to the view that it would be to our advantage to sign the Limited Test Ban Treaty.

Rusk asked, in this connection, whether there hadn't been an economic advantage to the Limited Test Ban Treaty due to the lower cost of underground testing. Seaborg, Wheeler and others replied that they didn't think so as the cost of testing underground was probably greater than that of testing in the atmosphere.

Marks said he thought there were great political benefits to the proposed seabed treaty. Wenk agreed that in his view there were great political benefits some of which are very immediate. Nitze made the point that if we did go along with the present, somewhat circumscribed position on the seabed treaty it probably wouldn't be considered to be sufficient by a number of countries so that it couldn't be sold and, therefore, we would have to go further and further in order to actually effect a treaty.

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Foster said he didn't agree with this point of view. He thought that a treaty based on the present proposed considerations could be sold. He said he thought this was doable. We could stand on this principle at the U.N. Rusk added that he thought a response to the general desire for action in this field, along the lines of our present proposal, would take care of 98% of the politics of the alternate, more sweeping Soviet proposal.

Rusk then turned to ask General Wheeler whether he had any comments. Wheeler said that the Joint Chiefs associate themselves with Paul's comments. He emphasized that on point 4 of the Deputies' memorandum, that is the verification aspect, there is a real problem. He said that paragraph 2 of the discussion of point 4 in the Deputies' memorandum is entirely unacceptable (this includes the statement that it is highly unlikely that the Soviets would deploy an unprotected system such as a seabed system). Wheeler said the same thing had been said about the Soviets not orbiting a nuclear weapon in space, but then they followed with F.O.B.s. He also said he wouldn't buy the ACDA concept of verification capability described in the last paragraph covering point 4 in the Deputies' memorandum.

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Rusk said he was puzzled by the reluctance of Paul and Buzz (Wheeler) in view of the fact that they had come along with the Limited Test Ban Treaty, the treaty banning nuclear weapons in space, nuclear free Antarctica, etc. Nitze said that in the Limited Test Ban Treaty contamination of the atmosphere was a factor. Wheeler said that in the case of the Limited Test Ban Treaty this was a very close decision as far as the Joint Chiefs were concerned, and he feels that we are now paying a heavy penalty, especially in expense and time. He said the Joint Chiefs were disinclined to fight

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over the Antarctica treaty. In the matter of the space treaty, they were also not so inclined to argue, and also the verification is a little more attainable. Rusk asked Wheeler whether he was concerned about the years immediately ahead and whether a duration clause might help. Wheeler replied that the present concept of a seabed treaty might be only a first step and that we are attempting to put ourselves in a strategic strait jacket. He again emphasized the verification problem.

Rusk then asked Glenn for his views. Seaborg said he didn't have strong views either way and that as far as he was concerned it was a close decision. He could see the force of Paul's and Buzz' arguments, but he could also see the political advantages of such a seabed treaty, especially to the attainment of a non-proliferation treaty and, therefore, on balance, he was in favor of the proposed seabed treaty. He said he could see difficulties in getting approval in the Senate, particularly because of the history of the space treaty. He said he considered verification to present a real dilemma but that probably it might be possible to convince the Senate that the advantages outweighed this difficulty and obtain approval.

Foster said that all we plan to do at the June 17th meeting of the ad hoc committee of the U.N. is to say that we want to place some restraints on the emplacement of weapons of mass destruction on the ocean bottom. Thus, he implied that there would be no draft of a possible treaty surfacing at that time.

Nitze asked at which stage would we consult with the relevant Congressional committees, and Foster said we would have to do this before we exposed our position to the world.

Rusk suggested that the Deputies should meet again to prepare a one-page summary of what can be said at the June 17th meeting. Also, they should prepare something on verification, like the role that inspecting ships might play.

Hornig said that an emplacement of such weapons on the seabed would constitute a very doubtful first strike capability and he doubted that a country would want to rely on this.

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Keeny said he thought the Soviet position may not be so very different from ours, and he read language from the Soviet proposal in order to try to support this point of view. Rusk said that the President had raised the possibility of his mentioning this in his speech at Glassboro tomorrow but in view of the discussion this afternoon this did not seem possible. He suggested that the Deputies meet as soon as possible.

G.T.S.

GTS:HG

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UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY
WASHINGTON

AEC

ACDA-2964

OFFICE OF
THE DIRECTOR

July 31, 1968

MEMORANDUM TO THE EXECUTIVE COMMITTEE OF THE
COMMITTEE OF PRINCIPALS

Subject: Preparations for Strategic Missile Talks (U)

The attached paper, Strategic Missile Talks Proposal, is a revision, based on consideration by the Working Group, of the paper transmitted to the Executive Committee by memorandum of July 26, 1968.

As was the case in the earlier paper it is based upon the proposal contained in the Department of State - ACDA paper transmitted to the Executive Committee on July 4. The Working Group has agreed that, without commitment as to the position of their various agencies on the proposal and recognizing that further revisions of this draft may be made, the proposal contained in the attached paper is to be one which will be addressed at the meeting of the Executive Committee scheduled for August 7, 1968.

The transmission of this paper by the Working Group does not involve a recommendation as to tactics on how the elements of this proposal will be negotiated with the Soviets. It was the consensus of the group, however, that not all of the elements in it would be presented to the Soviets at once. For example, it was the consensus of the group that paragraph IV B dealing with the replacement of obsolescent submarines, and paragraph IX B dealing

with the termination of the agreement, would not be in any initial presentation by the United States. It was felt that the areas covered by the points would be raised by the Soviet Union and the United States could put these points forward as a response to a Soviet position but that they would be put forward by the United States, at an appropriate time, if the Soviets had failed to raise them.

The proposal also does not deal with the question of reductions in strategic forces although it is recognized that at some appropriate stage in the talks the United States will have to be prepared to discuss such reductions.

Adrian S. Fisher

Adrian S. Fisher
Acting Director

Attachment:

17, 131 (one page only)

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July 31, 1968

STRATEGIC MISSILE TALKS PROPOSAL

The elements of a U.S. proposal for the proposed U.S.-USSR strategic missile talks are outlined below. This proposal should be viewed as an entity since that is the basis on which it has been evaluated.

I. Fixed Land-Based ICBM Launchers

The proposal would require cessation of the initiation of construction of any additional strategic offensive land-based missile launchers as of September 1, 1968. The Soviet Union would be permitted to complete the launchers which it is constructing as of that date. Beyond that date, however, it would not be allowed to initiate further deployment of fixed ICBM launchers. Under no circumstances would either side be permitted to deploy more than 1,200 ICBM launchers. Building of additional silos, enlarging of existing silos, changing basic external configuration of silos and other launchers, and the relocation of launchers would be prohibited. No additional restrictions would be imposed upon technological improvements of launchers or missiles already deployed including increasing the hardness of existing silos and deployment of MIRV's, or the retrofitting of existing launchers with new missiles.

II. Fixed Land-Based IRBM/MRBM Launchers

Further construction of fixed land-based launchers for IRBM/MRBM (ranges greater than 1,000 km) would be prohibited. The retrofitting of existing IRBM/MRBM launchers to accommodate ICBM missiles would be prohibited. The installation of ICBM missiles on

I also pointed out that since approximately 0.3 kilograms of plutonium ~~was~~ are produced annually for every thousand kilowatts of installed capacity, this 150 million kilowatts would represent about 50,000 kilograms of plutonium produced annually in Europe in the 1980's and that this corresponds to DELETED weapons. It ~~was~~ is, therefore, very important to assure adequate safeguards on nuclear power programs throughout the world.

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Saturday, March 15, 1969 - D. C. Office

I attended a meeting of the National Security Council, in the Cabinet Room at the White House, from approximately 10:00 to 11:15 a.m.

Present were President Nixon, Vice President Agnew, Gerard Smith (ACDA), ~~myself~~, Lee A. DuBridge, Henry Kissinger, General Earle G. Wheeler, Secretary Melvin Laird (DOD), Secretary William Rogers (DOS), Richard M. Helms (CIA), Elliot Richardson (DOS), and George A. Lincoln (OEP), plus Spurgeon Keeny and Colonel Alexander Haig on the side line.

When President Nixon entered the room, and we all stood up, he noticed my presence and said, "Hi, Glenn." After we had all been seated, he called on Kissinger to set the basis for the meeting. Kissinger outlined the three items that were up for discussion: (1) the Comprehensive Test Ban (CTB); (2) the Cutoff of Production of Fissionable Material for Weapons; and (3) the Proposal for Seabed Arms Control. He said that on each of these items the U.S. has a present position at the Eighteen Nation Disarmament Conference (ENDC), and the question will be whether the proposal is in the net security interest of the U.S. and should we maintain our present position or should we take a modified position. As an argument for the CTB, he pointed out that such a test ban would inhibit the Soviet progress on the MIRV and the ABM, that the previous problem on this has been a disagreement between the U.S. and the Soviet Union on the matter of on-site inspections, and that

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our own testing requirements are such that we would be in a position to accept a CTB some three years from now. Arguments against the CTB include our immediate need for testing, our continuing need to validate our weapons stockpile by testing, some inhibition to the peaceful uses of nuclear explosives, and our inability to test new weapons concepts.

President Nixon then called on Jerry (Smith) to explain the nature of the ENDC and inquired whether the NPT originated from the ENDC. He also indicated that he would want Smith to take positive positions at the ENDC and not merely indulge in gamesmanship. Smith explained the history of the ENDC and pointed out the role it had played in developing the NPT. President Nixon inquired specifically as to Soviet interest in participating in the ENDC and asked if they sent high ranking people to the deliberations. Smith said the soviets ~~took~~ take it very seriously and ~~did~~ do send high ranking representatives. He said that the ENDC is a very useful forum and results in much publicity for arms control type negotiations. He also pointed out that there is a commitment in Article VI of the NPT to carry on negotiations in the arms limitation field. President Nixon asked what the Soviets ~~were~~ are proposing in the ENDC, and Smith cited such aims as the banning of nuclear weapons, the cutback on strategic nuclear weapons, the prohibition of flights of bombers carrying nuclear weapons, the banning of underground tests (which raises the problem of on-site inspections), the

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prohibition of chemical and biological warfare agents, the dismantling of military bases, the creation of nuclear free zones and the peaceful uses of the seabed.

The President then asked Smith for a summary of his general views of what the U.S. philosophy should be, and he said that he tended toward a program with the following four objectives: (1) a ban on the transfer of nuclear weapons from one country to another (for which the NPT represents great progress); (2) an eventual ban on all nuclear weapons testing; (3) the cutoff in production of fissionable material for use in nuclear weapons; and (4) a ban on the deployment of nuclear weapons (for which the Antarctic treaty, the Outer Space treaty and now the Seabed Arms Control proposal are examples of progress).

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Smith said that we should probably emphasize the seabed proposal and seek to define what is fixed and also focus on the feasibility of verification. He turned to Helms to comment on verification, DELETED

DELETED Rogers urged that we reaffirm our support for the Seabed Arms Control proposal and indicated that, in any case, it would probably take four or five years of negotiation to accomplish such a treaty. Smith said it would take as long as he was in office, and the President indicated that it might even take longer than that.

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The President then asked for the position of the Department of Defense. Secretary Laird said that some elements of the Defense Department ~~had~~ have traditionally taken a rather negative position. He said they feel there are certain things that have higher priority, such as the clarification of the outer boundaries of a country in the ocean, the matter of fishing rights, and things of that sort. He said the DOD doesn't have any definite program for fixing weapons systems in the sea, but the Joint Chiefs of Staff have urged that we not make any commitment that would forbid this. ~~He~~ Laird then called on General Wheeler for his views. General Wheeler said that they have some interest and equipment in the seas, including fixed equipment but this is non-nuclear. He said that he doesn't actually oppose the ultimate attainment of a Seabed Arms Control treaty but there has never been a serious study of its implications, and we don't know too much about the ocean and the ocean beds. He feels, in connection with negotiating such a treaty, that we could talk about boundaries, verification procedures, etc., and he feels that Smith could be occupied with this aspect for some months. Secretary Laird said that he doesn't oppose the concept of such a treaty but feels there should be a go-ahead for general discussion, although we shouldn't agree to all the details of the suggested proposals at the present time.

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The President reiterated that our general posture is against proliferation and the three areas under discussion should be pursued. He said it is important that we not present a picture of dragging our feet. Vice President Agnew said that there is strong support for such a seabed treaty in the Marine Council and in the Senate by such Senators as Claiborne (Rhode Island) Pell. DuBridge supported Agnew on this by saying that such a treaty is almost a prerequisite for the large international program for scientific cooperation concerning matters of the ocean which is getting started. He said we would certainly need to agree not to use the ocean for military bases if these programs are going to be successful.

The Vice President reiterated that he thought we should go ahead with the seabed treaty because this would be the safest area in which to begin arms talks. The President asked whether Senator Pell ~~was~~ is actually so interested, and the Vice President indicated that Pell already has a treaty drawn up for consideration. The President stated that he agrees in principle with going ahead with such a treaty, and that he feels strongly that we should "take a positive position on this." He said that we should be very specific and not indulge in general malarky in our negotiations. He said we should identify and pick out hard items, make our position clear and negotiate on these.

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DuBridge indicated again that this would advance the general concept of an International Decade of Ocean Exploration, which has been advanced by the United States, and the President said that perhaps this thought should be used in Smith's statement at the ENDC. Agnew again emphasized that the International Decade of Ocean Exploration ~~was~~ is our initiative. The President emphasized that the treaty should clearly refer to DELETED installations outside of our territorial limits in the ocean. This led to a general discussion of the international controversy that surrounds the 12-mile limit.

We then turned to the other items. I said that I ~~was~~ am in complete agreement on the desirability of a Seabed Arms Control treaty, but I wanted to

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said that our stockpile of enriched uranium and plutonium

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corresponding to a greater than expected threat, and we, of course, ~~couldn't~~ can't come ~~near~~ close to meeting the Joint Chiefs of Staff's suggested program. In order to meet the base program,

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He also said that an arrangement is contemplated whereby the tritium that has decayed would show up as helium-3, which could then be used as a basis for a replacement of the tritium; I agreed that this ~~was~~ is an entirely feasible procedure. General Wheeler said that in addition to the problems I ~~had~~ have identified ~~was~~ is the one of the requirement of continued testing in order to work on the problem of hardening our warheads. He also identified and emphasized the problem of tritium replacement. He said that

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Kissinger said that it certainly wouldn't be feasible to walk away from our previous positions. The President said he agreed ~~to~~ with this and that we should maintain the three proposals that we ~~were~~ are discussing and not withdraw them from the ENDC. He said that with respect to the CTB and the Seabed Arms Control proposal, we should lay out our former position and "let it rest there." This, then, might be accomplished by a full review within the U.S. Government as to the consequences of these proposals with the view of determining or modifying our future position. He indicated that if our national security depended in a very serious way on making weapons tests we would have to do so, DELETED

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DuBridge said that he would like to make three points: (1) are

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and (3) that tritium is not fissionable and, ~~there~~ therefore, might not be involved in the cutoff. I said that because tritium is a reactor product, it is treated in the same way as plutonium and would be involved in any cutoff. I ~~said~~ wanted to make it clear that I ~~was~~ am supporting the U.S. position on the CTB and on the cutoff of production of fissionable material, especially as

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the position had been restated by the President. I said I just wanted to make it clear what the problems ~~were~~ are and that they ~~were~~ are understood. In the case of cutoff in production, I reiterated that it ~~would~~ will be

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if the two Hanford reactors ~~were~~ are shut down.

I suggested privately to Smith that he bring up the matter of the

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Thus, in summary, it was agreed that the U.S. position ~~would be to~~ will remain with all three proposals at the ENDC, recognizing that long negotiations ~~would~~ will be required and that there ~~would~~ will be opportunities to re-evaluate our position as these negotiations proceed.

Although a discussion of the Vietnam situation was scheduled, the President said that he was running out of time and told the

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members of the Security Council that he ~~would~~ had to have to postpone this item for the next meeting. He was scheduled to talk within the next half hour at a luncheon meeting of the National Alliance of Businessmen.

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4/3/69-3

From 10:00 to 11:45 a.m. I attended a meeting of the NSSM-28 Steering Committee in Room 3E928 of the Pentagon. Present were: Gerard Smith (ACDA), Alexis Johnson and Llewellyn Thompson (State), David Packard (DOD), Ivan Selin (DOD/Systems Analysis), Major General Royal B. Allison (JCS-Air Force), Bruce Clark (CIA), Helmut Sonnenfeldt and Spurgeon Keeny (White House) and ~~myself~~ I at the main table. Others present were: L. Lynn (White House), J. Shaw (State), Sidney Graybeal (ACDA), Colonel H. A. Strack (JCS), and Allen Labowitz (AEC). The purpose of the meeting was to discuss the memorandum dated March 28, 1969, subject, "Proposed Alternative Strategic Arms Control Options and Evaluation Criteria" and Gerard Smith's memorandum to the NSSM-28 Steering Committee members, dated March 31, 1969. Gerard Smith presided over the meeting and outlined the objective to be that of coming up with a position to be used as the basis for his discussion in the Strategic Arms Limitation Talks (SALT) at the ENDC in Geneva. NSSM-28 requested that this position be ready by May 15, 1969; the objective is to have a draft ready by April 23, 1969.

Smith asked Sidney Graybeal to describe the various options that the working group is developing, and Graybeal described the six options with the variants based on a sheet of paper that he handed out. Selin described the options in somewhat more detail and pointed out that an

additional position might be that suggested by Brennan

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Selin then went on and discussed the various criteria for evaluating the options and these were approved by the group.

Smith identified the problem of how to present something so complicated to the President and the National Security Council. Packard indicated that he would follow Selin's work very carefully and try to determine a time when a progress report could be made to the Steering Committee before the finished document was ready. Selin indicated that he couldn't have the document ready before April 28 or May 1 and the group agreed on this time. There was also a discussion as to which option or position would be negotiable with the Soviets and it was agreed that this should have an important impact on our initial position. Thompson urged that we start with something simple, and Packard suggested that maybe this should be

an initial position in which we suggest

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Smith raised the question of whether we might suggest to the Soviets that

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It was finally agreed that the Soviets might not want to do this, but it seemed ~~like~~ as though it might be worth suggesting as a possibility.

Before and after the meeting of the Steering Committee I talked to Smith, Johnson and Thompson about the recent communication from the Soviets expressing an interest in going forward with the technical discussion on the peaceful uses of nuclear explosives. ~~They~~ The Soviets would like to extend the talks for a period longer than two days and would like to have the discussion in Moscow rather than Geneva. I said I thought the longer period would be satisfactory to us and that we ought to at least consider the possibility of holding the discussion in Moscow if this would prevent a further delay. Smith expressed some doubt whether the Soviet Desk in the State Department would want to agree to this change of venue.

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1951-72
FOLDER-PAGE/00116-/00118

DOCUMENT TITLE Memo of conversation 3-25-69

from Col. Fitzgerald, OASD, concerning

Soviet military attache's comment on ABM and SALT (attachment to 0910899)

0910900

This document has been determined to be NOT DECLASSIFIABLE and has been removed from this folder.

C. Kroger
Name

11-30-87
Date

Reference letter OASD, Bodling to DOE, OC Gilbert dated 9-1-87

Doc # 910958

CROSS REFERENCE SHEET

TITLE OF DOCUMENT Ltr. Attorney General Mitchell to Seaborg dated 4/23/69 Re. "In my letter I told you we had no evidence ..."

This document requires further classification review and has been removed from this folder.

W. T. Leech
Name

10/22/82
Date

NOT Copied For Coord. Currently being reviewed by DOJ under SAN official request for Seaborg

WLT Per R. Hamburger

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Wednesday, April 30, 1969 - D. C. Office

From 10:30 - 11:30 a.m. I attended a meeting of the National Security Council in the Cabinet Room of the White House. Those present were: President Nixon, Vice President Agnew, ~~Dr.~~ Lee DuBridge, Gerard Smith (ACDA), General Earle Wheeler (JCS), Secretary Melvin Laird, Secretary William Rogers, Henry Kissinger (White House), Elliot Richardson (State), Richard Helms (CIA), Alexis Johnson (State), Attorney General John Mitchell, George A. Lincoln (OEP), and ~~myself~~ I. Spurgeon Keeny and Colonel Alexander Haig of the NSC staff were also in attendance.

The discussion concerned a decision as to whether the U.S. should table in the ENDC the text of an international agreement that would prohibit the emplacement or fixing of nuclear weapons or other weapons of mass destruction on the seabeds. President Nixon turned to Kissinger and asked him to describe the issues involved.

Kissinger said that the main question ~~was~~ is to decide whether the U.S. should table such a seabed treaty at the ENDC, and, if so, whether the treaty should prohibit all weapons of mass destruction or only fixed weapons, whether the area of application should extend ~~up~~ to the coast or only to the territorial limits of other countries, whether the territorial limits should be at 12 miles or three miles, and whether the treaty should provide for inspection to

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* NSC Memo, 5/9/69, to DOE, OCTP 9-18-89

insure compliance. Kissinger said the first issue really is ~~was~~ to determine whether the treaty is in our national interest. Rogers said he would think that the treaty should be considered to be in our national interest if it meets the simple test of not working to our military disadvantage. ¶ President Nixon then turned to Smith and asked him to explain how we would come out in case such a treaty went into effect, and what we are looking at. Smith said he would like to begin by giving some background for the present position and indicated that there is a need for action soon or the matter will be taken up in the United Nations, which might result in less desirable action, and action over which we would have less control. He said that the United Nations would probably want to adopt stronger measures than those in our draft treaty, measures that would constitute a complete demilitarization of the seabed, which would be to our disadvantage. Rogers suggested that this issue is ~~was~~ in the ENDC, at our initiative, in order that we might make progress outside of the General Assembly, where the action is more uncoordinated and unpredictable. Smith agreed with this and said we needed to make some progress in the ENDC in order to save our more moderate plan of action; otherwise it would be taken up in the General Assembly. ¶ The President facetiously said to Smith that perhaps in that case he would like to represent us in the General Assembly, and Smith replied that he had someone else in mind for this task. Smith said that the

Soviet draft of a seabed treaty includes the exclusion of conventional weapons, surveillance systems and other military activities, as well as nuclear weapons, which goes further than we want to go. He said that the Soviet plan finds favor with many developing countries and the Soviet bloc countries, and it is for this reason that we need to advance our own plan. He believes that we could negotiate a compromise between our plan, which outlaws only nuclear weapons from the seabed, and the Soviet plan. Smith also said that an argument for going ahead is that we do not have any plans for deploying nuclear weapons on the seabed. He believes that the tabling of such a treaty at the ENDC would advance our political interests and suggested that if we couldn't do something which has such slight, adverse political consequences, how could we expect to go ahead with SALT (Strategic Arms Limitation Talks).

President Nixon then called on Secretary Laird to express his views. Laird said that the Soviets have a great land mass and only limited access to the oceans, whereas we have extensive shorelines; therefore, the advantages for such a seabed treaty would lie almost exclusively with the Soviets. He said that the Soviets would just as soon have a piecemeal approach, but he would rather see an over-all plan and doesn't feel that we should move in an area which is of such evident interest and advantage to the Soviets. He also

indicated that he thought such a treaty might DELETED

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The President then called on General Wheeler who indicated that while, in a sense, such a treaty might be in our national interest, it would not be in the over-all security interest of the United States. He said that, although we ~~had~~ have no hard on-going programs utilizing the seabeds, we don't know very much about the oceans, and thus it would be better to keep our options open. Laird, Rogers and Smith discussed the effect that the treaty would have on our DELETED This led the President to ask Laird whether the Rickover statement, that was issued just the other day, had overstated when it said that the Soviet Union is overtaking us in the field of nuclear submarines, and Laird responded that he did not think that Rickover had overstated it. Laird went on to say that he ~~was~~ is thinking in terms of the 1970's and 1980's and that he ~~didn't~~ doesn't want to trade away any political advantage. He suggested that the best solution might be to make the seabed treaty a part of a package deal that included SALT and proceed only on that basis. Rogers asked if there ~~wasn't~~ isn't some way that we ~~could~~ can have a treaty in the seabed area. He wanted to know why it would be to our disadvantage and to that of nations who are our friends. Laird said it is his feeling that it is best to begin tough with the Soviets and that you never gain anything if you give up too much.

The President asked what the time factor is in this, and Smith responded that he thought the treaty should be tabled at the ENDC before their recess, which begins about May 22. He would then hope that we might be able to get a compromise agreement with the Soviets about the middle of September when the U.N. General Assembly might open. Rogers emphasized that we have already made a statement at the ENDC in favor of a seabed treaty and it would be very embarrassing to reverse ourselves now. At this point Vice President Agnew said that he would be remiss if he didn't express his concern about always reacting to Soviet suggestions and, hence, always considering things on their terms. He wanted to know why we don't develop initiatives of our own that might be as unusual to the Soviets as their initiatives are to us. He suggested that we might hit them with some innovative proposals that they wouldn't be able to entertain. Smith and Rogers responded by saying that the idea of a seabed treaty for discussion at the ENDC was a U.S. proposal, and that the U.S. sorely needed, in the eyes of the world, to show some interest in disarmament. Smith went back to Laird's idea of tying the seabed treaty to the SALT negotiations. He said that the Soviets and the U.S. had gone back and forth on package arrangements in previous years. Separate items were then singled out and this led to the successful negotiation of the Limited Nuclear Test Ban Treaty. Lincoln suggested that perhaps we were so

far down the road that we ought to go ahead gracefully, giving maximum assurance that our security aspects would be protected. Rogers suggested that one possible compromise would be to table the draft and then postpone discussion until SALT is under way; Smith agreed that this was a possibility. Laird disagreed with this, saying that under such a procedure the Soviets would surely bring our proposal to the U.N. General Assembly for debate. Richardson said that the approach of tabling it and proceeding as the SALT talks got under way would at least give us something, and we would have the option of going ahead if we saw that SALT discussions were proceeding.

The President said he wanted to be sure about the value of such treaties and recalled that in the case of the Limited Nuclear Test Ban Treaty he thought it was a close question but decided, on balance, to come out in favor of it. He wasn't sure whether this had been the correct decision and asked me what I thought. I said that I thought the Limited Nuclear Test Ban Treaty had been clearly to the advantage of the United States, to the Soviet Union and to the world. I said that its main benefit had come from its beneficial effect in slowing the tempo of the arms race. Another beneficial effect was in stopping radioactive fallout from atmospheric testing, which, if atmospheric testing had continued unabated, could have reached undesirable levels. ¶ President Nixon then asked my view on the seabed treaty, and I indicated that, on balance,

I was in favor of it. I said I thought that it would be a mistake to reverse our position on this at the ENDC now, after we had come out in favor of it. The President indicated that he was most interested in my technical judgment and not my political judgment (I believe that he was speaking here largely for the benefit of Secretary Laird and Vice President Agnew who had spoken so definitely against the seabed treaty). I said that even in confining my judgment to the technical aspects, which ~~was~~ is difficult to do in this case, I thought the seabed treaty ~~was~~ is to our national advantage. I said that it would not affect in any way our development of DELETED we already have so many ways of emplacing and delivering them, including, under the treaty, thousands of square miles of underwater emplacement possibilities along our shorelines for experimental purposes, that the treaty would not be to our disadvantage from this point of view either.

President Nixon then spoke very seriously and impressively along the lines that if the United States was going to have and maintain the necessary deterrent to protect itself, it would only be maintained as a result of actions taken in this room. We could not count on the actions of any other nations to be very helpful or decisive in this regard. He said that Secretary Laird's forthcoming report on strategic capability will play a crucial role. He said that we could

make a check all around the world, but in the end it will be our own strength that we must depend upon. The President then indicated that he would make a decision as to the U.S. position on the seabed treaty in the near future.

DuBridge said that he would like to make one comment which would be from a technical point of view. He said that the technical development of seabed weapons would be possible, but he thought that if they were developed, we would be more vulnerable to them than the Soviets due to our large shoreline, and, therefore, a seabed treaty would be to our relative advantage.

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 101068

Department of Justice
Washington

[redacted]

May 2, 1969

Mr. William T. Riley, Director
Division of Security
Atomic Energy Commission
Washington, D. C. 20545

Dear Bill:

This is in response to your letter to me of April 18, 1969, in which you confirmed earlier oral advice to me that the Joint Committee on Atomic Energy had requested permission to review the Atomic Energy Commission files regarding DELETED DELETED including the FBI reports.

I discussed this matter with the Attorney General today after having first obtained the views of the Federal Bureau of Investigation. The Attorney General agrees with the observation of the FBI that "this investigation is considered most sensitive by this Bureau and other United States intelligence agencies."

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The Attorney General has decided that the FBI reports in this matter cannot be made available to the Joint Committee on Atomic Energy or its staff.

Mr. Mitchell is not unmindful, however, of the interest of the Joint Committee in this matter. Consequently, he suggests that you or an appropriate official of the Commission familiar with the subject matter orally brief the members of the Joint Committee along the lines of the "talking paper" which was attached to the Chairman's letter to the Attorney General of February 28, 1969, excluding however the subject matter referred to in the second paragraph, page one, of that "talking paper." Mr. Mitchell emphasized to me the importance of avoiding any reference direct or indirect to the

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REVIEWED BY [illegible] DATE 11-2-92
#1 Ltr. FBI, 1-24-89 & DoJ, 9-1-90
To DOE, OCTP, Kinnaird.

NO DEPT. OF ENERGY CLASSIFIED INFORMATION (NO RD/FRD DOE-NSI)
COORDINATE WITH: DOJ, FBI
BEFORE DECLASSIFICATION/RELEASE
AUTHORITY: DOE DPC
BY R.A. CARPENTER, DATE:
RAC 10-10-90

[redacted]

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 101069

I hope that this solution will be satisfactory to the Commission and you and the Joint Committee.

Sincerely,

J. Walter Yeagley

J. Walter Yeagley

[redacted]

CROSS REFERENCE SHEET DOCUMENT # 911028

TITLE OF DOCUMENT [redacted] TWX 075159 Seabed Arms Control. May, 1969
5 pages

This document requires further classification review and has been removed from this folder.

Dick Koogle
Name

August 29, 1986
Date

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May 14, 1969

MEETING: NSSM-28 Steering Committee, Room 5941, Department of State, 2:40 - 5:30 p.m.

Present were: Gerard Smith (Chairman), Sidney Graybeal, Gen. J. Davis, Col. I. Richards and L. Weiler (ACDA); David Packard, I. Selin, Col. Al Quanbeck, J. Woolsey, and Admiral W. Lemos (DOD); Generals R. Allison, H. Strack and B. Randall (JCS); U. A. Johnson, L. Thompson and J. Shaw (State); Glenn T. Seaborg, and Allan Labowitz (AEC); DELETED (CIA); H. Sonnenfeldt and L. Lynn (Kissinger's office); Spurgeon Keeny and D. Steininger (OST). Dan Fink and R. Herbst (DOD, A. Latter (RAND), and DELETED came in for the final portion of the meeting.

I arrived at the meeting about ten minutes late due to my attendance at the Atoms for Peace luncheon and left at 5:30 p.m. when the meeting was still in progress. Before I arrived the question of the classification and the public information aspects of the verification of a SALT agreement had been discussed and disposed of by agreement that U. A. Johnson's paper on this be accepted as a basis for instructions to the delegation - this consists of a plan whereby we use

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Graybeal of ACDA then gave a description of the study outline, illustrated with slides, which included a description of the key issues and the status of the study of the forthcoming SALT agreement.

Packard commented that it might be better to have a simple initial position instead of a whole complex package. Smith indicated that the broader approach might be suitable from the standpoint of attaining a more favorable public opinion and pointed out that this approach would then be narrowed at the negotiations. There followed a discussion

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of this point, and the consensus seemed to be that there needn't be much difference between Packard's and Smith's point of view - that is, the broad approach could be stated in a simple and uncomplicated manner.

I then returned to the question of verification and asked whether we might not give consideration to DELETED

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However, it was agreed that a study of this possibility would be made. Smith suggested to U. A. Johnson that he might coordinate such a study.

Smith then circulated a paper which described a strategic "Stop Where We are" program. This would halt the ICBM's where they are and mobile ICBM's and MIRV's would be banned. Retrofit, hardening, or improving the throw-weight of existing ICBM forces would not be permitted, thus, removing the DELETED DELETED Such a plan would freeze the present ABM situation.

Smith then turned to a discussion of another topic on the agenda, namely, the possibility of postponing the testing of DELETED He said that this would be very beneficial from the standpoint of creating a climate conducive to progress in the SALT negotiations. A postponement of the order of six months was suggested as an example. Packard indicated that it might not be wise to do this now but rather to consider using it as a negotiating point during the SALT discussions. He said he didn't want to give away one of our playing cards. No conclusion was reached concerning this issue.

Col. Quanbeck briefed us on an analysis on strategic exchange that had been made in the Department of Defense and which was generally pessimistic with respect to the SALT

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concept from the standpoint that it seemed to have an DELETED DELETED

Packard suggested that they would be glad to treat other assumptions and options in a continuation of their analysis if anyone would like to make suggestions.

Smith then called on Dan Fink, the chairman of the DOD task force working out of the Defense Science Board to make a strategic analysis of alternative arms control proposals. He gave us a Top Secret internal summary report of their results. After a description of their study, Fink said that his panel was recommending against the banning of the testing DELETED under any agreement that would depend for verification on national capability for detecting the flight testing DELETED However, he did not rule out the possibility of accepting a ban DELETED that did not fool us by assuming that we could detect such flight testing. Under such a plan we would compensate for the lack DELETED in our offensive capability by using DELETED etc., with the hoped for advantage that the ban on DELETED would reduce the pace of the arms race.

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Smith summarized this discussion by indicating that we should read the full report of the Fink Panel in order to aid us in coming to a conclusion. Packard suggested that a task force should be set up to look into this whole issue very thoroughly. It was also suggested that perhaps a better approach to the whole problem would be to limit the number of boosters, or, in other words, to have a payload weight limitation DELETED DELETED Under such a scheme an unmonitored limitation would be of less concern if it were violated. Smith indicated that under such a scheme it might be better to start

with a demand for on-site inspection to detect violations of [DELETED] with the thought that we might then retreat to the scheme which placed the emphasis on a payload weight limitation.

I left the meeting at that point.

G.T.S.

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[redacted] May 28, 1969

MEETING: NSSM-28 Steering Committee, Room 5930, Department of State, 10:00 - 11:40 a.m.

Present were: Gerard Smith (Chairman); David Packard, Ivan Selin and Admiral W. Lemos (DOD); Gen. R. Allison and Col. Harold Strack (JCS); Phil Farley, Llewellyn Thompson and John Shaw (State); Glenn T. Seaborg and Allan M. Labowitz (AEC); DELETED ; L. Lynn and W. Hyland (Dr. Kissinger's office); and Spurgeon Keeny and D. Steininger (OST).

Since the last meeting of this Committee, where we discussed the plan to use our DELETED DELETED the working group has prepared a draft report for submission to the National Security Council (NSC); it consists of a summary, Parts I - V, and an agenda in the form of separate documents which had been circulated to us prior to this meeting.

Gerard Smith opened the meeting by suggesting that the review group meet again on June 12 for a final look at the draft report and added that consideration is being given to holding the first NSC meeting on this matter on June 18.

Smith then asked for comments on the draft report, starting with Dave Packard. Packard said he felt that we should define more carefully just what is meant by "moratorium" which is one of the issues discussed in the report - that is, just which DELETED etc. should we suggest placing under a moratorium with respect to further construction activities. Smith agreed and said that he will have this problem worked on so that we may have a subsidiary paper defining the alternatives available within two or three weeks - in time for the NSC meeting. Packard said his other main question concerning the draft report had to do with the verification procedures that would insure compliance with the terms of any SALT agreement. He said that in some ways a philosophical question was involved - namely, the question of whether

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On the other hand, it was clear that the Consultants Panel of the DDRE does not agree with this point of view. Packard said it was important to reconcile these two points of view regarding verification, and that this would be an absolute necessity when we reached the stage where we have to convince the public of the possibility of verification. He said that in order to help reconcile this he would be glad to oversee, by furnishing a DDRE member, further meetings of the Verification Panel held with the aim of resolving this issue. Packard also said that he didn't feel we should make any unilateral moves such as a declaration of a moratorium or the cessation of DELETED before we actually started the SALT talks with the Soviets.

Smith then called on Farley for his views on the draft report. The thrust of Farley's response was that he thought the report was satisfactory, and what we needed to do was to get going and complete the preparation so that we could start the SALT talks as soon as possible.

Smith made the point that the summary part of the draft report seemed to be devoid of discussion of the international political aspects. There was some discussion of whether this might be added. There was discussion about the wording but agreement was finally reached. The gist of it was that the Soviets would conclude from the initiation of Salt talks that the Nixon Administration is serious in its intent to enter an era of negotiation with the USSR. Packard reiterated his point of view of favoring an early start of the SALT talks and said this might be more feasible if we strove for a limited sort of agreement at the beginning which itself is an issue that needs to be resolved.

Selin said that the meaning of "Limited Agreement" was not clear. There are two definitions: one in which we think in terms of a broad agreement in principle, but not spelled out in detail; the other in which we would try for an agreement in only a narrow field, like limitations on the DELETED DELETED ., to be followed later by a broadened agreement.

Smith then called on General Allison, who indicated that he had intended to discuss a moratorium and verification aspects, but since these had been covered, he wanted to raise one problem that bothered him and that had to do with attempting to put a lid on technology. He thought the summary might include a paragraph speaking to the fact that this was not feasible. He also said he didn't like to see the DELETED DELETED I commented on Allison's point of view by saying that the philosophy that we can't put a lid on any technology poses a dilemma which is central to the whole field of arms control. I also said that the concept of putting a lid on technology is a very complicated one and mentioned these three aspects: (1) in the area of laboratory development it probably would be impossible to have an agreement prohibiting activity because it couldn't be verified; (2) with respect to prohibiting the deployment of DELETED DELETED this is a matter of policing an action and not a matter of prohibiting technology; and (3) there is the very difficult area where we are in a sense prohibiting technology, such as in the case of the LTBT - and I thought the banning of DELETED DELETED - but, if we didn't attempt to include such restrictions in any arms limitation agreement, we wouldn't accomplish very much.

Smith then called on me to comment on the draft report. I said I thought the working group had done a fine job. I emphasized that I thought there were a number of items that needed to be settled by the Steering Committee or by the NSC - items such as the question of a moratorium, the ban on DELETED testing and the definition of what is meant by Packard's "limited approach," the question raised earlier by Selin. I said I thought we should try to start the SALT talks as soon as possible, but that I agreed with Packard that it wouldn't be reasonable to announce any unilateral actions, like a moratorium or a ban DELETED before we started the talks; this would be better to do after the talks began.

I then went back to the question of how we define a limited agreement, pointing out that this it is very important to settle this, and suggesting that perhaps we should provide to the NSC alternatives to choose from, each of which is specific. Ambassador Thompson agreed that the Soviets would want something specific to discuss and that anything broad and vague would be

resented by them. He said that it is quite possible that we might have an initial position that the Soviets might not accept but that it would be feasible to bargain provided we didn't start with something they thought completely unreasonable.

Smith's idea of a "Stop Where We Are" concept was then discussed. DELETED handed out a short paper that discussed the verification problems for such a procedure.

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Wednesday, June 18, 1969 - D. C. Office

From 10:10 a.m. to 12:50 p.m. I attended a meeting of the National Security Council which was held in the Cabinet Room of the White House. Present were: President Nixon, Secretary William Rogers, Secretary Melvin Laird, David Packard, General Earle G. Wheeler, Dr. Lee DuBridge, Henry Kissinger, George Lincoln (OEP), Attorney General John Mitchell, Elliot Richardson, Gerard Smith, and Richard Helms, around the table; Spurgeon Keeny, Larry Lynn, H. Sonnenfeldt, Colonel Alexander Haig (NSC staff), Ivan Selin (DOD), and others, in the surrounding chairs.

President Nixon opened the meeting by saying that it would be devoted to the discussion of a U.S. position for possible Strategic Arms Limitation Talks (SALT)--the subject of NSSM-28.

The President then called on Kissinger. Kissinger opened his remarks with a discussion of last week's NSC meeting at which the general problem of U.S. Military Posture and Balance of Power (NSSM-3) was discussed on the basis of the Packard Panel report on this subject. Kissinger recapitulated some of the conclusions from last week's meeting, such as the definition of our national objectives to achieve a position where we have high confidence in our second strike capabilities and our ability to maintain our forces in a state of maximum invulnerability to a Soviet strike and, in general, to deny the capability of the U.S.S.R. to do more harm to us than we to them.

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President Nixon responded to this summary by saying that, in his view, it boils down to our country possessing a massive retaliative capability. He said that he thought this ~~was~~ is not adequate, and we need more options, that is, in the conventional weapons and nuclear tactical weapons areas, etc., and, thus, the study must be continued. The President said he thought that the future national problems and confrontations might be less than the all-out kind; we, therefore, need to examine the U.S. military capability in terms of what is likely to happen. This poses harder questions and goes to the very core of what kind of a credible foreign policy the U. S. should have. He added that an example of such a broader policy might be his

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a program that may give more options to another U.S. president some ten years from now. The President said that our present unfortunate position goes back to what has happened since 1962. It was possible then for the President to confront the Soviet Union with impunity because we had a superior capability, but a U.S. president couldn't do this today. He went on to say that any overall policy should include a definition of our posture in the Pacific, such as vis-a-vis China, which the NSSM-3 paper doesn't cover. He suggested rather pointedly, and somewhat sharply, that we need options in addition to massive retaliation, and that he would like an expanded report covering this within two months.

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President Nixon then called on Smith to make his presentation with respect to the U.S. position on the SALT talks, adding that this discussion will be continued at the NSC meeting a week from today. Jerry Smith opened the discussion by saying that the problem of evolving a reasonable position for the SALT talks has been a real can of worms. He said the final report that has evolved is a result of the joint efforts of the Department of State, the Department of Defense, the CIA, the ACDA, the AEC, and the President's Science Advisor. Smith said that the primary U.S. objectives are to reduce the likelihood that nuclear war will occur, to protect ourselves and our allies from the destructive consequences of nuclear war, and to be capable of controlling a strategic nuclear conflict so that the possible outcome leaves the U.S. and its allies in a relatively advantageous position. He said that the United States and the Soviet Union are now in a state of approximate strategic balance, that perhaps we have a somewhat greater number of missiles, but this cannot continue for long. We must either keep building or stop--we have that choice now, but it may not be a choice much longer. It is apparent to him that some appropriate arms control agreement is in the security interest of the United States. He described a number of alternatives, so far as the scope of an agreement is concerned, ranging from limited measures that would freeze only a number of fixed, land-based ICBM's through intermediate measures and on to comprehensive agreements that would go still further and

base our position on a quantitative and qualitative freeze on all aspects of strategic defensive and offensive systems that are subject to adequate verification by national means. The most comprehensive agreement might be one with both sides stopping where they are and not building or deploying any additional strategic nuclear weapons. Another objective on all these levels of agreement would be to keep the ABM level as low as possible.

President Nixon asked whether the Soviet nuclear submarines and their weapon systems ~~were~~ are as good as ours. Laird responded that he thought they ~~were~~ are. The President asked why the Navy wants nuclear submarines with more speed, and Laird answered that this ~~would~~ will increase their capability to attack.

President Nixon also pointed out that civil defense has a relationship to all of this and should be factored into it. He also asked whether the Soviets ever raised the question of verification when discussing arms limitation agreements, and the answer was that they are not ~~as~~ so concerned about this aspect as we ~~are~~. The President expressed the opinion that our ability for verification is a major new factor that was not present in analogous arms limitation considerations some ten or fifteen years ago. Lincoln asked whether our verification capability can be neutralized by new technologies, and Helms indicated that it could.

Smith said that another issue that will have to be discussed in arriving at a U.S. negotiating position is whether

we should rely entirely on our national capability for verification of any arms limitation agreement, or should we insist that some inspection is necessary. He said he felt that we

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Smith indicated that we would need to carry on, in connection with any SALT agreement, a strong technical program of scientific investigation aimed toward finding improvements and toward countering Soviet improvements, and as an insurance in case the Soviets should violate the agreement. Smith said that the costs, in the absence of any arms control agreement, would be difficult to estimate, but that, in general, such an agreement woud lead to saving money.

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Smith also identified as another issue that must be decided before we begin any SALT discussions the question of whether we would seek a moratorium on missile testing--

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President Nixon referred back to the "Stop Where We Are" concept and wondered whether this ~~wasn't~~ isn't a propaganda point--a gimmick. He opined that maybe this ~~was~~ is something that we should reserve for later in the negotiations. Smith countered with the statement that he ~~thought~~ thinks it ~~was~~ is something that should be presented as a practical possibility, but the President reiterated that it ~~looked~~ looks more like a sort of omnibus "cease fire in Vietnam" approach, and he again said he thought that it might be raised at a later time in the negotiations. Rogers asked Smith for his judgments as to what the Soviets' immediate position might be at the opening of the SALT talks, and Smith indicated that this would be hard to predict, but it might be something like the Gromyko plan, something that suggested cutting down on all weapons. President Nixon, in continuing this line, asked what the Soviets might say about the ABM, and Smith responded that they might suggest something like "Stop Where We Are," or, in any case, would want to agree on a small number.

At this point there was considerable discussion about the accuracy of missiles. Laird and Packard made the point that the DELETED

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The discussion continued along the lines of the reliability of Intelligence data, and President Nixon made some rather strong remarks about the need to distinguish between opinion and fact in this area. He said that there ~~had~~ has been a tendency for years to use Intelligence information to prove a conclusion rather than, as it should be used, to come to the conclusion. He stated very forcefully that he want~~ed~~s none of this and that he want~~ed~~s the CIA to take note of what he ~~was~~ is saying. He expressed great distress at the fact that the Intelligence community DELETED DELETED He went on to say that, although many honest individuals in Government want to get on with disarmament, he wants it understood, clearly and loudly, that they shouldn't use Intelligence reports to prove their arguments. He asked if this was understood, and Helms replied that it was.

Helms

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said that our verification capability,

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while difficult, probably would make a SALT agreement feasible and that on-site inspections would be useful, but not necessary.

President Nixon then called on Packard to analyze the four options for the SALT agreement contained in the report, emphasizing that the report made no recommendations ~~as between~~ among them. These varied from Option I, which suggested the most limited measures, to Option IV, which suggested the most comprehensive measures. He analyzed these options in terms of force comparisons, retaliatory capabilities, damage limiting capabilities, and the possible hedges against violation.

President Nixon indicated that he thought Option IV ~~was~~ is the least desirable. General Wheeler indicated that the Joint Chiefs of Staff agreed with him, and that adoption of Option IV would make it DELETED DELETED Option IV would ban DELETED

President Nixon then focused on the question of whether we should agree to stop the testing

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Rogers raised the question whether we shouldn't focus more on throw weights of launchers rather than on numbers of launchers.

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Rogers pursued the question of benefits from a ban of testing DELETED asked who would benefit the most, the U.S.S.R. or the U. S., emphasizing that it ~~was~~ is a matter of comparison that counted. Laird conceded that the benefits might be about even. Kissinger also emphasized that there ~~were~~ are two questions involved, namely a ban on the testing of DELETED and a ban on their deployment. Laird emphasized again that he thought the Soviet DELETED had been successful, while Smith disputed this and reiterated that he thought the Soviets would not be able to deploy DELETED test ban, because of the need for confidence firings. Laird indicated that we would need to test DELETED from our operational sites and referred to a proposal that he has made to this effect. Laird reiterated his view that the Soviets ~~were~~ are attempting to develop a first strike capability. The President

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expressed some doubt whether such a capability ~~was~~ is achievable.

In winding up the meeting, the President indicated that the discussion ~~would~~ will be continued by the National Security Council a week from today at which time Smith ~~would~~ will discuss further the four options summarized in the SALT report.

Just before the above meeting began I spoke with Elliot Richardson. We discussed the problem that is developing between the JCAE, on the one hand, and the State Department and the White House, on the other, concerning the question of cooperating with DELETED DELETED I said that Commissioner Costagliola will represent us on this at the meeting of the NSC Under Secretaries Committee tomorrow afternoon, that Costagliola insisted on representing the AEC at this meeting, and that I am afraid he may give trouble with his strong and unreasoning stand against any form of DELETED cooperation in this area, even the commitment to study the situation that President Nixon made DELETED

I suggested to Richardson that he accede to Costagliola's request to see him this afternoon on this issue. I also suggested that, if Costagliola is too unreasonable, he might want to delay resolving the issue until the expiration of Costagliola's term.

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OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
FOLDER-PAGE 102211

THE WHITE HOUSE
WASHINGTON

June 19, 1969

MEMORANDUM FOR: The Secretary of State
The Secretary of Defense

SUBJECT: Preparation of Alternative SALT Proposals for Discussion with Allies

At the NSC meeting scheduled for June 25, the President wishes to consider alternative proposals based on the "limited", "intermediate" and "comprehensive" options developed in the NSSM 28 study. The proposals should, in the first instance, be in a form suitable for discussion with the NATO allies (and Japan). For this purpose they should be accompanied by an analysis of their implications, including a comparison with the other proposals submitted and with the situation that would exist in the absence of any agreement or arrangement with the Soviet Union. In each case, expected benefits as well as problems should be highlighted, including those pertaining to our allies.

The President has directed that this paper be prepared by a Steering Group under the chairmanship of the Director of the Arms Control and Disarmament Agency. Membership of the Group should consist of representatives of the Secretary of State, the Secretary of Defense, the Joint Chiefs of Staff, the NSC Staff and the Central Intelligence Agency.

The President wishes to study the alternative proposals before the NSC meeting; a report by the Steering Group should therefore be submitted to my office by 3:00 p.m., Tuesday, June 24, 1969.

Henry A. Kissinger

Copies to: Director, ACDA
Chairman, Joint Chiefs of Staff
Director of Central Intelligence
Chairman, AEC
President's Advisor on Science and Technology

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BY AUTHORITY OF DOE/OC
J. Diaz 11/1/89
REVIEWED BY DATE
Ltr. NSC, Klubnikin, to DOE, OGTP, Sjobeck, 9-19-89
Graham 11/22/89

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Monday, June 23, 1969 - D. C. Office

From 10:00 a.m. until 12:00 noon I attended a meeting of the NSSM-28 (SALT) Steering Group in the ACDA Conference Room (5941) at the Department of State.

Present were: Gerard Smith (Chairman); David Packard (DOD); Lee DuBridge (OST), DELETED General Royal B. Allison (JCS); Llewellyn Thompson (State); Spurgeon Keeny (ACDA); H. Sonnenfeldt and Larry Lynn (White House); Phil Farley and Jack Shaw (State) around the table, and Ira Richards and Robert Rochlin (ACDA); Warren Nutter (DOD); Bill Hyland (NSC Staff); DELETED D. Steininger (OST); Ivan Selin (DOD); and Allan Labowitz (AEC) around the wall.

The purpose of this meeting was to discuss the alternative options for the SALT discussions that had been requested by the President at the NSC meeting on June 18.

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Kahn 4/4/90

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Smith called attention to the requirement in Kissinger's memorandum of June 19, 1969 (copy attached on that date), setting a deadline of 3:00 p.m. tomorrow for the finished report. (Kissinger's memo describes the ground rules for the draft report of alternative options for SALT.)

Smith called on Keeny to describe the report (ACDA 3382), and, in response to this, Keeny went through the report and described its various sections.

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Smith then asked Packard for his views. Packard indicated that there ~~was~~ is a divergence of views within the DOD, and this was confirmed by General Allison,

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Allison again mentioned his concern that there should be no limitations on the development of technology; DuBridge and I countered this with the view that steps toward arms limitation would not be possible if there could be no limitation on the development of technology. I again mentioned the Limited

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Nuclear Test Ban Treaty as an example of arms limitation that depended on a limitation of technology.

There was a great deal of discussion DELETED DELETED and it became apparent that it wouldn't be easy to reach an agreement DELETED DELETED At one stage Packard suggested that perhaps we shouldn't freeze all our objectives too firmly but maintain a totally flexible posture, DuBridge countered with the thought that we would need some definite position or the Soviets would take over the initiative and the U. S. would be in the position of only reacting to Soviet suggestions.

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There was also some discussion concerning how much of the statistics concerning the U.S. and U.S.S.R. population and missile survival rates, DELETED , should be revealed to our NATO allies.

The meeting was brought to a close with Sonnenfeldt indicating the need for a definite plan for the presentation at Wednesday's NSC meeting. The role of the charts, etc. will be worked out by Smith and Packard. Farley reminded the group that consultation with our NATO allies, to be conducted by Ambassador Ellsworth, is scheduled to begin a week from today, and he indicated that this will also include a consultation concerning the conclusions reached in connection with the study on U.S. Military Posture and the Balance of Power (NSSM-3). It was decided that Smith and Packard will also focus on the preparation for these talks.

NSR 5/5/7

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June 25, 1969

MEETING: National Security Council, in the Cabinet Room, White House, 11:00 a.m. - 1:00 p.m.

Present were: President Nixon, Vice President Agnew, Secretary of State Rogers, Secretary of Defense Laird, Glenn T. Seaborg, Eliot Richardson (State), Gerard Smith (ACDA), Henry Kissinger, Lee A. DuBridge, George Lincoln (OEP), Attorney General Mitchell, David Packard (DOD), Gen. Robert Cushman (Deputy Director, CIA), as well as Col. Alexander Haig, H. Sonnenfeldt, Larry Lynn, Phil Farley, and Spurgeon Keeny.

The purpose of this meeting was to continue consideration of the U.S. position for the Strategic Arms Limitation Talks (SALT) with the Soviet Union.

President Nixon called on Smith to make the opening statement. Smith gave a short statement in which he quite eloquently described the importance of the SALT talks. The President asked him how he thought the talks would actually start, and Smith replied that he thought there would be a sort of preliminary grappling with procedural issues, definitions of scope, etc., which could take a couple of weeks in Washington and a couple of weeks in Moscow.

Laird said that he would like to enunciate some general principles which he read from a document. These included the following generalizations: that some arms limitation between the U. S. and the U.S.S.R. is desirable, the performance of such arms limitations must be capable of being monitored by national means, that the cost of building additional missiles would be no bar to the U.S.S.R. doing so, that the main objective of the U. S. is to maintain its retaliatory capability, and that the Soviet interests are, in general, the same as ours.

The President said that he disagreed with three of these general principles without identifying them. He went on to enunciate some statements of his own. He said, rather forcibly, that, "There is only one person responsible for the security of our nation, and that's me. My actions, in addition to their immediate impact, will greatly affect the options available to our next President at a period when some of these armament matters will be even more critical. I shall listen

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carefully to all the viewpoints expressed, but in the end, when I lay it down, I'll expect it to be followed."

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He pointed

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out that we have scheduled consultations with our NATO allies for July 8 and would need some kind of position before that time.

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He went on to say that everything leaks at the Senate Foreign Relations Committee, and that it would not be safe to give them anything more than a sanitized version of our position; he said we could give more to the Senate Armed Services Committee. It was pointed out to the President that Senator Symington sits on both committees, which caused him to observe that this poses a difficult problem indeed. He said, "All of the information goes to the other side - they have more confidence in the other side than I have." The President suggested that consultation with Congress should come after the consultation with our NATO allies. He indicated that it is more important that the negotiations succeed than that they inform Congress and suggested that there should be discussions later as to how to brief Congress. DELETED

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He said this might also be the way to handle things in Congress. The President then asked Smith what he considered the next step to be.

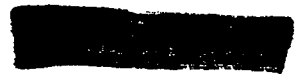
Smith suggested that we would need to have something in Ambassador Ellsworth's hands by July 3 or 4. Laird indicated that he thought it was better sometimes to postpone answers

to some questions that might arise in the consultations rather than try to answer them all. The President said that he intends to prepare his own Q's and A's on this. He said that he had done a lot of study on this problem and thought he would like to work on this personally. He also suggested that others involved prepare Q's and A's, and that we should stick carefully to the suggested answers. He repeated that the important thing is the success of the negotiations and that nothing should be done in Congress that would impair this objective.

Lincoln interjected the thought that it was very important to be sure that the public was informed, that public support was fundamental to the whole future, including the support of the DOD and any plans that they might have to make depending on the outcome of the negotiations.

The President then called on General Wheeler to voice his thoughts. Wheeler said that he endorsed the approach to our NATO allies that the President had outlined.

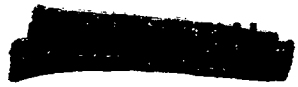
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The President again referred to the problem of congressional leaks and indicated that it would be better if the position were not known by Congress before it was advantageous to publicly reveal it. He pressed

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Vice President Agnew made the point that whatever position we adopt, some people will think it is unreasonable. The President replied that the impact of this depends, bluntly, on who thinks the position is unreasonable. He said that he would be horrified if the New York Times endorsed our initial position, and that we can't be in the position of wanting to be fashionable. Rogers agreed that we are not talking about the New York Times but are talking about the American people, and Agnew countered that the complexity of the situation was such that perhaps it is not reasonable to expect the American people to understand it.

The President asked again about the timing for the meeting with our NATO allies. Smith indicated that information would be needed in Brussels by July 3 or 4, for the scheduled meeting on July 8.

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The President then went on to read from a resolution adopted by the Democratic Council of the State of Washington which Senator Jackson had provided to him. This resolution suggested that the U.S. position should be one of unilateral disarmament, which would mean that we should destroy our B-52's, our MINUTEMEN, our nuclear submarines and abandon our overseas bases. The resolution went on to say that the Soviets wouldn't want to invade us under any circumstances and wouldn't know what to do with us if they did.

The President then brought the meeting to a close by indicating that there would probably be further discussions before a U.S. position was determined.

On the way out the President spoke to me very cordially and indicated that he still intends to visit the AEC and will try to do so this summer. He expressed regret that, due to his European trip, he had been forced to cancel his visit scheduled for February 20.

G.T.S.

GTS:HG

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March 27, 1987

GLEN SEABORG FILES

Removed and Stored at DOE/SAN (Oakland, CA)

Box # 4225

Folder # TELE CONVS & APTS APR/MAY/JUNE 1969

Document Date 6-25-69

Document Title (Ident.) MTG NSC WHITE HSE

For Information call:
Jim Stuart, Classification Advisor
Lawrence Livermore National Laboratory
Mail Stop L-302
(415) 422-4408, FTS 532-4408

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July 10, 1969

MEETING: SALT Steering Committee, Room 5941 (ACDA Conference Room), Dept. of State, 11:30 a.m. - 12:30 p.m.

Present were: Gerard Smith, Alexis Johnson, Gen. Allison (JCS) DELETED Glenn T. Seaborg, Ivan Selin (DOD), Jack Shaw (State), Warren Nutter (DOD), Allan Labowitz, H. Sonnenfeldt, Larry Linn, Spurgeon Keeny (ACDA), W. Hyland (NSC), L. Wiler (ACDA), Robert Rochlin (ACDA), S. Graybeal (ACDA), S. Smith (DDRNE) DELETED and Dr. Steininger (OST).

The purpose of the meeting was to discuss the document, NSSM-62 report, which was a re-write and expansion of the NSSM-28 report, as directed by NSDM-16, Criteria for Strategic Sufficiency.

There was also a discussion of plans for briefing NATO on the U.S. verification capabilities for SALT and on briefing selected members of Congress on this. This matter was discussed chiefly by Johnson DELETED and Smith and it was decided that this intelligence briefing should provide our NATO allies with a sufficient understanding of our verification capabilities and limitations to meet their needs without including details which, if leaked, would compromise our sensitive intelligence collection sources and methodology. A list of key people in Congress that should be similarly briefed was discussed. At the end of this discussion Johnson left the meeting.

Keeny described the NSSM-62 report, saying that it contains five alternative proposals for strategic arms limitations and that these five are essentially the same as the four in the NSSM-28 report, but the addition of alternative II.A brings the number to five. The NSSM-62 report also includes a discussion of the compatability of the various alternatives with the criteria for strategic sufficiency and, in this connection, includes assessments of damage limiting and retaliatory capability, etc.

There was discussion of how the various alternatives would be related to the tactics of their presentation at the initial SALT meetings with the Soviets. I indicated that it was not likely that the NSC would make a choice *

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*Ltr. NSC To D. 1/19/90.

between the five alternatives and thus the planning should be quite flexible as to the tactics of their presentation. Shaw raised the issue of whether the details on limitations DELETED might not be left as more of an open issue, and he also suggested that there might be some mention in the negotiations of an Adjudication Commission in connection with the verification problems.

G.T.S.

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[redacted] July 14, 1969

MEETING: NSC UNDER SECRETARIES COMMITTEE, in Room 7219, Department of State, 11:00 a.m. - 12:30 p.m.

Present were: Elliot Richardson (Chairman - State), U. Alexis Johnson (State), Gen. Earle G. Wheeler (JCS), David Packard (DOD), Richard M. Helms (CIA), Gerard C. Smith (ACDA), Carl Walske (DOD), S. J. Lukasik (ARPA), John Northrop (DASA), Adm. Lloyd M. Mustin (DASA), Spurgeon Keeny (ACDA), Glenn T. Seaborg, Theos J. Thompson, Gen. Edward B. Giller, F. R. Tesche, Richard Hamburger, Cdr. R. E. Peterson (AEC), and others.

Richardson opened the meeting by saying its purpose was to review the FY 1970 underground nuclear test program in accordance with the instructions in NSDM 18 of June 27, 1969. This is the MANDREL program for the entire FY 1970, which requires general approval, and the MANDREL I program for the first quarter, which requires specific approval.

Richardson then called on me and I made a short statement describing the requirements and need for testing and the problem areas involved in the testing program. I described the objectives of our testing program in terms of the development of nuclear warheads and in terms of our Plowshare program. I described our past record on containment of our underground shots, which is a good one, and then went on to describe a number of current problem areas. These included the claims by the opposition to testing that testing at Amchitka is dangerous from the standpoint of triggering of earthquakes, tsunami generation, leakage of radioactivity and ecological damage. I described the similar problems confronting testing in Nevada and the problems connected with the Plowshare program, including problems connected with its relationship to the Limited Nuclear Test Ban Treaty. I also mentioned the opposition of various specific individuals and groups, such as Howard Hughes and his organization, the Pitzer Panel, the resolution by Senator Gravel and his associates, the St. Louis committee, wildlife conservation organizations, etc. I described our program of technical and public information which is directed to trying to overcome these problems.

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I then introduced Gen. Edward B. Giller (Director, Division of Military Application) and he described the planned weapons development test program in terms of principal objectives of satisfying DOD requirements for weapons now in engineering development and nearing such development and advancement of nuclear technology.

I called on Richard Hamburger (Division of Peaceful Nuclear Explosives) and he discussed plans for conducting excavation events and underground engineering events.

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Richard/then opened the discussion. He said that he was particularly worried about the problems connected with testing at Amchitka and asked why we had chosen this site. I explained our broad search for the best site, including sites outside of U.S. control, and said that in the end the Amchitka site was the least objectionable. I admitted that there were many problems with this site. We discussed these problems in detail, and it was decided to include a short summary of this situation in the letter to President Nixon requesting approval of the MANDREL program.

Richardson also raised the problem of the Plowshare excavation tests and their relationship to the Limited Nuclear Test Ban Treaty. I summarized the nature of this problem. Richardson asked that the special study under way to try to define the relationship of Plowshare excavation testing to the LTBT be expedited.

There was general agreement by the group that it be recommended to the President that the MANDREL program, and the MANDREL I program specifically, be approved with the understanding that specific Presidential approval must be obtained for all nuclear excavation experiments, for all events to be conducted outside the limits of the 48 contiguous states and for all tests with yields of one megaton or more.

G.T.S.

GTS:HG

The following eleven pages include copies of a letter I sent on June 23, 1992, to Bryan Siebert of the Department of Energy Declassification Department identifying documents that I wished reconsidered for further declassification, and of his response dated August 14, 1992. These two letters are included as a means of reporting the status of the declassification actions and of demonstrating the process we have been through.

The U.S. Department of Energy declassified and returned the following attached documents in late August. At this time, the printing of this volume had been completed but not yet bound. I decided to include these documents at the end of the volume at press time.

September 1, 1992

Lawrence Berkeley Laboratory
1 Cyclotron Road Berkeley, California 94720
(510) 486-4000 • FTS 451-4000
Building 70A, Room 3307
Please note change in area code.
Telephone: (510) 486-5661
Telefax: (510) 486-4515

June 23, 1992

Mr. A. Bryan Siebert
SA-20
U. S. Department of Energy
Washington, D.C. 00585

Dear Bryan:

I am enclosing a list identifying documents for inclusion in an appendix to my journal that I would like to have reconsidered for further declassification.

Cordially,

Glenn T. Seaborg

GTS/sw

List of documents to be resubmitted for declassification

1. Memo from Bell re space proposals with attachments (still classified) [Vol 1, p 281]

2. Memo for GTS and Secretary of Defense from Dir BOB and Memo to GTS and Secretary of Defense from Pres (not declassifiable) [6/30/61]

3. Seaborg biweekly report to President, October 10, 1961, much deleted [Vol 2, p 233]

4. Letter Seaborg to Rusk re French request for assistance, October 18, 1961, much deleted [Vol 2, p 273]

5. Rusk to Seaborg, much deleted, [Vol 2, p 277]

6. Acting Sec State to GTS, not declassifiable [Vol 2, p 367]

7. Lttr J Edgar Hoover to GTS, all deleted [Vol 3, p 197]

8. Deletions from Journal narration, two meetings, April 6, 1962 (quite a bit added for one meeting but still incomplete, [Vol 3, p 370]

9. Lttr GTS to Pres, much deleted [Vol 3, p 534]

10. Memo for Pres, 5 pgs [018012-018016] [Vol 3]

11. June 11 letter to Pres from GTS and MacNamara, plus suggested draft, much deleted [Vol 3, pp 596-599]

12. Deletions from Journal narrative, July 10, 1962, NSC meeting [Vol 4, p 29]

13. Deletions from Journal narrative, December 17, 1962 [Vol 4, p 582]

14. Lttr Seaborg to Rusk 12/18/62--"The Commission ..."(not declassifiable), 24091-2409 [Vol 4, p 587]

15. Lttr re 1972 production objective for plutonium and tritium (document 901680), [Vol 5, p 183]

16. Memo for Pres from McNamara, 2/27/63 "Security Aspects of Using Submarines..." (not declassifiable) [027019-027020], [Vol 5, p 226]

17. Memo No. 222 from Pres to Sec Def and Sec State dated 2/20/63 (not declassifiable) Vol 5, p 227 [027021]

18. Seaborg to President re Project Pal, March 20, l963 (partly added) [Vol 5, 303]

19. Lttr (8/15/63) re proposal to survey land for tests [Vol 6, p 134]

20. Letter Seaborg to Gilpatric, September 14, 1963 (mostly added) [Vol 6, p 325]

21. April 3, 1964 from Rickover--deletions[Vol 8, pp 235-236]

22. Journal entry, 4/20/64 deletion [Vol 8, p 307]

23. Memo (11/14/64) for Sec State and Sec Defense "The Future of the Nuclear..." further review [Vol 9, p 341]

24. Letter Seaborg to Bundy, November 23, 1964, not declassifiable [Vol 9, p 400]

25. Attachment applying NSAM to two pending cases 11/24/64, not declassifiable [Vol 9, p 408]

26. Lots of deletions from Journal narrative, December 21, 1964 including deletions from Memo for Committee of Principals dated Dec 3, 1964, [Vol 9, p 529]

27. Deletions from Journal narrative, January 21, 1965 [Vol 10, p 075]

28. Deletions from Journal narrative, February 11, 1965, (including cab meeting) [Vol.10, p 158, 160]

29. Deletions in Journal narrative, February 15, 1965 [Vol 10, p 175]

30. Vol 10, p 479 not declassifiable)

31. Vol 10, p 489 not declassifiable

32. Seaborg memo re Space Council meeting, July 9, 1965, much deleted [Vol 11, p 029]

33. Minutes of Cabinet meeting, 5 pages, September.13, 1965, [Vol 11, p 330]

34. Letter Bethe to Seaborg, September 30, 1965 (many deletions) [Vol 11, p 590-591]

35. Letter Seaborg to Foster re Threshold Proposal, January 19, 1966, deletions also Enclosure II (IDA Study S-235, "Special Nike-X Warhead Study") [Vol 12, pp 623-627]

36. Draft letter (4/14/67) from Pres to Chancellor Kiesinger--not declassifiable [Vol 14, p 444]

37. Meeting of Principals, June 3, 1968 (mostly added) [Vol 16, pp 513-514]

38. Strategic missile talks proposal July 31, 1968-three pages of four missing,--[Vol 17, p 131]

39. Deletions from Journal narrative, March l5, l969, NSC mtg [Vol 18, p 238]

40. Deletions from Journal narrative, March 21, 1969 re meeting with CIA Director Helms [Vol 18, p 268]

41. Memo of conversation from Fitzgerald, not declassifiable, March 25, 1969 [Vol 18, p 407]

42. Letter Atty General Mitchell to Seaborg, April 23, 1969, further review [Vol 18, 505]

43. Deletion in Journal entry May 1, 1969 [Vol 19, p 002]

44. TWX re Seabed arms control, May, 1969, 5 pp, further review [Vol 19, p 062]

45. Possible Journal deletion, May 14, 1969 [Vol 19, p 82]

46. TWX re Seabed, May, 1969, 2 pp, further review, [Vol 19, p 062

47. NSC Under Sec Comm, June 9, 1969, not declassifiable [Vol 19, p 244A]

48. Deletions from Journal narrative, June 23, 1969 (some of National Security Council meeting added but still some re "N" reactor still missing [Vol 19, p 329]

49. National Security Council memo by GTS, June 25, l969 [Vol 19, p 351-352]

50. Memo to Secretary of State, et al, June 27, 1969, further review [Vol 19, p 370-371]

51. Annex to Aide Memoire dated July 3, l969 [Vol 19, pp 406-410 (several pages missing)]

52. Memo to President re SALT talks, July 29,1969 [Vol 20, p 758]

53. Report of US Delegation re SALT talks, July 29, 1969 [Vol 20, p 759]

54. Memo to Pres re international cooperation in uranium enrichment field, not declassifiable [Vol 21, p 417]

55. Memo to Pres (1 pg) re international cooperation in uranium enrichment, further review [Volume 21, p 489]

56. Memo to Pres dated 2/26/70 (7 pp) re international cooperation, further review [Vol 21, p 490]

57. DOS Telegram from Amembassay to Sec State dated 3/27/70 - "NPT Safeguards," not declassifiable [Vol 21, p 594A]

58. Memo for Pres dated 3/20/70 (5 pp), more review [Vol 21, p 638]

59. Memo for Dep Sec of Defense et al (1 p)[Vol 21, p 639]

60. Letter to GTS from GAC, May 6, 1970, deletion [Vol 22, p 56-57]

61. Intelligence re French test dated 5/28/70, mostly deleted {Vol 22, p 196]

62. Rogers to GTS, 6/8/70, much deleted [Vol 22, p 241-242]

63. DOS-TWX, 4 pages, from Sec of State to US Delegation, SALT, July 2, 1970, further review [Vol 22, p 363]

64. Status of SALT negotiations, Nov. 24, 1970, further review [Vol 23, p. 490]

65. Report to GTS, July 22, 1970, of 113th GAC meeting, deletions (#3, 4, 9) [Vol 22, p 483]

66. Memo to File from Bengelsdorf, Office of AGMIA, Status of SALT negotiations, November 24, 1970, not declassifiable [Vol. 23, p 491]

67. TWX Amembassy, Vienna to Sec State, not declassifiable [Vol 24, p 293]

68. Report of 115th GAC meeting, deletions GTS, [Vol 24, p 316-317]

69. Note to Seaborg from Howard Brown re discussions with France, April 22, 1971, further review [Vol 24, 675]

70. DOS telegram from Sec State to US mission NATO dated 6/18/71, not declassifiable [Vol 25, p 282]

71. DOS telegram from Amembassy, Bonn, to Sec State, dated 7/16/71, not declassifiable [Vol 25, p 434]

Department of Energy
Washington, DC 20585

AUG 14 1992

In Reply Refer to:
92SA20C000138

GGS 8/21/92

Dr. Glenn T. Seaborg
Lawrence Berkeley Laboratory
1 Cyclotron Road
Berkeley, CA 94720

RECEIVED AUG 21 1992

Dear Dr. Seaborg:

The Office of Classification has reviewed the 71 documents identified in your letter of June 23, 1992. The results of that review are outlined below.

Documents 1, 15, 19, 23, 38, 50, and 63 were declassified as a result of the earlier review and copies sent to you at various times between 1988 and 1992. For your convenience, new copies are being provided with this letter.

The deletions in documents 60, 65, and 68 existed in the original diary copies and were not made as part of our earlier review. However, complete versions of these documents were located in History Division files, reviewed, and additional material released. Revised deleted versions are included with this letter.

Document 42 was sent to the Department of Justice (DOJ) on May 3, 1989, and is still under review. We last contacted DOJ in March 1992 and were told that the review would be completed within one year.

Documents 7, 9, 11, 34, and 61 have been reviewed and no additional information can be released. Therefore, no copies are enclosed.

The remaining 55 documents contain other agency material and have been forwarded to the appropriate agencies for rereview. Three of these (documents 46, 54, and 64) are duplicates of other documents in the package. Of the 52 unique documents (some of which have been sent to multiple agencies), 28 were sent to the National Security Council for review, 19 to the Department of State, 4 to the Department of Defense, 4 to the Arms Control and Disarmament Agency, 2 to the Central Intelligence Agency, 2 to the United Kingdom, and 1 to the Office of the Deputy Assistant Secretary for Naval Reactors in the Department of Energy. We will keep you advised regarding the status of these reviews.

If you have any questions, please contact Anton A. Sinigalli at (301) 903-4199.

Sincerely,

A. Bryan Siebert
Director
Office of Classification
Security Affairs

Enclosures

Receipt Number: TRSAB20001749

Description (Must be Unclassified)	Document Number	Date of Document
REVIEW OF SPACE PROPOSALS Document Type: MEMO Author: DAVID BELL Originating Agency: BOB Addressee: CHAIRMAN Addressee Agency: AEC Number of Pages: 25	SAC20003069A001 Reference your #1	05/18/61
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EXECUTIVE OFFICE OF THE PRESIDENT

BUREAU OF THE BUDGET

WASHINGTON 25, D. C.

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MAY 18 1961

MEMORANDUM FOR THE CHAIRMAN, ATOMIC ENERGY COMMISSION

Subject: Review of Space Proposals

There is attached a copy of a Bureau of the Budget staff review of the proposed changes in the U. S. space programs discussed in the joint Department of Defense-National Aeronautics and Space Administration report dated May 8, 1961.

We expect to put these issues before the President in the immediate future and would appreciate having any comments on the Bureau staff review as soon as possible.

I will be in touch with you later today or first thing in the morning with respect to your views.

(Signed) David E. Bell

Director

Attachment

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Attachments

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STAFF REVIEW OF PROPOSED INCREASES IN SPACE PROGRAMS

Bureau of the Budget

May 18, 1961

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STAFF REVIEW OF PROPOSED INCREASES IN SPACE PROGRAMS

This report summarizes the results of the brief staff review possible in the time available of the augmentations of U. S. space programs proposed or discussed in the joint NASA-Defense report "Recommendations for our National Space Program: Changes, Policies, Goals" dated May 8, 1961.

It starts from the premise that the President has made at least a tentative decision to propose to Congress an augmentation of our space programs along the general lines proposed in the NASA-Defense report, with a message and supporting Budget amendments to be sent to Congress on or about May 23, 1961. The objectives of the report are to assist in arriving at final decisions on (a) the nature and scope of the augmentations to be proposed, (b) the posture to be taken in the Presidential message and in testimony before Congress, (c) the assignment of responsibilities for carrying out the programs, and (d) the specific budget estimates and necessary authorizing legislation to be recommended to Congress at this time.

Part I -- Summarizes the major policy decisions that must be made or confirmed, and points out some of the implications of the tentative decisions that have been made.

Part II -- Summarizes the major specific problems, issues, and decisions that must be dealt with in order to proceed along the lines proposed in the joint NASA-Defense report.

Part III -- Summarizes the recommended actions on the 1962 Budget amendments and related legislative authorizations.

Part IV -- Summarizes the estimated future budgetary impact of the decisions under consideration.

Annex I -- Clarification of NASA and DOD responsibilities on Large Solid Booster Development.

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PART I - POLICY DECISIONS AND IMPLICATIONS

A. Major Policy Issues

The three major policy decisions to be made or confirmed can be stated as follows:

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1. The decision to mount a major effort to pursue space projects aimed at enhancing national prestige and at the development of space and related technology as an objective in its own right.
2. The selection of the objective of achieving a manned lunar landing and return as a major goal, with 1967 as a target date for program planning purposes.
3. The decision to undertake, in addition to the manned lunar landing program, expanded and accelerated programs in communications satellites, meteorological satellites, the ROVER nuclear rocket, and other programs not related to the manned lunar landing goal.

B. Implications to be considered

1. Magnitude of future costs - Based on current estimates, the proposals under consideration would increase the annual funding required for NASA and other civil space activities from the $1.3 billion in the present 1962 budget to about $5 billion in 1966. These amounts represent an increase of over $2 billion per year above previous projections of the "built-in" and previously planned increases in the programs. There are already indications that the current estimates may be substantially understated, perhaps by as much as two hundred million in 1962 and a billion dollars

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a year in subsequent years, especially if a determined effort is to be made to achieve the 1967 target date for a successful manned lunar landing and return.

Assuming that in the same period military space and related programs increase from the present 1962 level of about $1 billion to about $1.7 billion, the grand total for US space and related programs would reach about $6.7 billion in 1966, an increase of about $4.4 billion over the present 1962 budget, based on current projections. (See table in Part IV.) As indicated, more realistic estimates might increase these amounts by as much as $1 billion per year.

2. Long term commitment - Embarking on the proposed program involves a commitment to a long-term effort and to provide the resources it requires. Starts and stops, changes in goals, or failure to provide the required level of budgetary support would defeat the objectives of the program. If a specific target date is set for attempting the manned lunar landing, additional resources and effort may be needed to make up lost time when slippages occur.

The commitment actually extends beyond the achievement of manned lunar landing and the other specific objectives of the current proposals. By 1967 we will have geared the nation up to an annual space effort of almost $7 billion per year; it is unrealistic to assume that an effort of approximately this level would not continue for many years. Even the current programs and proposals include items that point beyond

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the manned lunar landing demonstration; for example, the ROVER program if successful would find its main applications in sending large vehicles to the planets.

Thus the present decisions must be recognized as implying a major national commitment of dollars, scientific and technical manpower, and other resources to a very large scale space program for the indefinite future.

3. Feasibility of manned lunar landing program - Proceeding with a program to achieve the goal of manned lunar landing and return implies a judgment that there is a reasonable chance of success. This judgment is necessarily based in varying degrees on available information on science and technology, expected technological advances in the next few years, confidence that both known and unforeseen problems will be resolved, and determination to succeed.

However, in considering the decision to proceed, the implications of likely and possible outcomes other than complete success must also be considered. Among the possibilities are: (1) eventual success but with slippage to a later date; (2) long drawn out effort neither successful nor clearly hopeless; (3) failures in intermediate objectives like manned circumlunar flight which would indefinitely delay manned lunar landing attempts; (4) discovery of natural phenomena (e.g., radiation effects) which make success impossible, at least for an indefinite period. While the benefits of technological advancement would still result in these circumstances, we would face difficult decisions as to whether and when the program should be cut back or terminated.

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4. Concentration of effort required - The magnitude of the effort required for the manned lunar landing program is so great and the proposed schedules so tight that it will place a major strain on our capabilities in the space and related fields. This is particularly true with respect to (1) highly qualified scientific and technical personnel in the specialties most affected and (2) test and launching facilities, for which there will be a tremendously increased requirement and for which the construction lead times are long, perhaps impossibly long in relation to the testing schedules necessary to meet the 1967 target date.

This clearly implies that while we must underwrite the success of the entire effort with parallel and alternate approaches, we must at the same time not dissipate our resources on unrelated space programs, thereby undercutting the chances of success in the manned lunar landing program.

Specifically, the merits on a policy basis of proceeding with an expedited ROVER program leading to flight tests beginning about 1966 or 1967, as proposed by NASA and AEC, appear questionable on this basis. The proposed expedited ROVER program would lead to a flight test program of major and unknown dimensions (possibly requiring for safety reasons the establishment of a new and separate launching area) at the same time that the flight tests of the large NOVA class vehicles in the manned lunar landing program would be underway. Either undertaking is formidable enough in its own right. Undertaking both at the

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same time would tax resources that would already be over-strained and make success in either less likely.

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5. Diversion of resources from other national needs - Increases in the space programs of the magnitude proposed cannot help having the effect of diverting scientific and technical manpower from other areas of national need. Although in the years ahead there may be some drop-off in the requirements of military missile and related programs as present high priority programs are completed, and while there may be some slack in industry at the present time, both the immediate and long-term effects of the proposed space effort will be to increase the pressures and incentives for qualified personnel to turn to the space field. This will happen at a time when we sorely need more of the same kinds of people to turn to teaching, and when efforts are being and will be made to expand our national research efforts in other scientific areas. It must be understood that in proceeding with the proposed large scale and expedited space programs, with the large amounts of money that will be spent, we may be causing a major and continuing distortion in the utilization of our scientific and technical resources which will have detrimental effects in other areas of serious national concern.

6. Loss of flexibility to undertake other major efforts - A major continuing commitment to a large scale space effort will also reduce our flexibility as a nation to undertake large scale, all-out efforts in other areas not now foreseen which may

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suddenly appear to be of comparable national importance. Unforeseen developments in the military area conceivably could result in requirements for "Manhattan District" type efforts of much more direct concern to national survival than the manned lunar landing program. Specifically, it appears doubtful whether we could handle both an all-out effort to produce and deploy the NIKE ZEUS system and the proposed manned lunar landing program. Even with current programs it will be necessary to decide what priority to give the manned lunar landing program in relation to current top priority programs like MINUTEMAN and POLARIS.

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PART II - MAJOR SPECIFIC PROBLEMS AND DECISIONS REQUIRED

A. Manned Lunar Landing Program

1. Program details must be worked out - At the present time technical planning of the program, while actively underway in NASA, has not yet proceeded to the point where a comprehensive program and estimates for achieving the manned lunar landing objective can be presented except in broad outlines subject to change. It will not be possible for some time to develop a firm budget program for FY 1962 or even to identify with certainty all the major items that must be undertaken.

Recommendation: The Administrator of NASA be given broad flexibility in presenting and carrying forward the program at this time, and the 1962 budget add-ons be presented as indicative of the magnitude of the additional funds that now appear to be required to get the program underway with details to be worked out later.

2. 1967 target date for program planning - A decision must be made whether the NASA internal planning is to be geared to a target date of 1967 for an attempt at a manned lunar landing and return. Planning dates for internal management purposes are essential. Establishment of 1967 as the planning date, rather than a later date--for example, 1969--will necessitate an extremely rapid build-up in the program, particularly in the construction of facilities, and the making of technical choices and decisions after fewer experiments, with perhaps less chance of early success.

Recommendation: NASA be authorized to relax the target date if significant increases in the probability of success would result or if adherence to the 1967 target date turns out to entail measures that are clearly uneconomical or unwise.

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3. 1967 Target Date--Public Posture - While internal target dates do not have to be advertised or referred to in public statements, they cannot be kept secret in a program of this magnitude. Attempts to deny that there is such a target date will be difficult and there will be pressures to take the posture that we are in the race to the moon to win.

Recommendation: Make a major effort to avoid any public commitment to specific target date.

4. Priority of Manned Lunar Program - A decision is needed on whether the manned lunar landing program is to be assigned "the highest national priority" and given the benefits of "D-X" priority ratings, similar to the ballistic missile programs and certain other space programs. If so, an understanding as to the relative importance of this program in relation to the others enjoying the same status is necessary in order to guide the Secretary of Defense and others in administering the priority system.

Recommendation: The assignment of the "highest priority" status is necessary for the manned lunar landing program to meet the contemplated schedules.

5. Clarification of Responsibilities for Large Solid Booster Development - This problem is discussed in ANNEX I. With respect to budgeting responsibilities, Alternative "A" in ANNEX I, under which the Air Force would budget for the solid booster development, except for the development of the clustered stages for the lunar landing program and facilities other than those at contractor plants, is generally consistent with the agreement previously reached by the Administrator of NASA and the Secretary of Defense.

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Alternative "B", under which the Air Force would play the same major role as "executive agent" for NASA in the conduct of the program but NASA would budget for the entire program, is now strongly recommended by the Bureau of the Budget.

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Recommendation: That the division of responsibilities recommended in ANNEX I, adopting Alternative "B" on budgeting responsibilities, be approved and the appropriate shift be made in the 1962 estimates now under consideration.

6. Likelihood that Additional Funds will be required - Present indications are that the magnitude of the funds required for the manned lunar landing objective may have been underestimated by as much as $200 million in 1962 and perhaps $1 billion per year in future years. In 1962 there is the off-setting possibility that inherent delays and difficulties in building up a program as rapidly as planned may in fact make it impossible to utilize in 1962 even the full amounts now being proposed. Nevertheless, the possibilities must be faced that additional funds may be required in 1962 and that future requirements will be higher than now anticipated.

Recommendation: That the Administrator of NASA be requested (1) to adhere if at all possible to the 1962 totals now being proposed, making such internal shifts in the application of the funds as are necessary, in order to avoid if possible the submission of yet another revision to the 1962 Budget, and (2) to attempt to provide a more definitive statement of prospective funding requirements in the submission of the 1963 estimates this fall.

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B. Communications

1. Acceleration of program - Should the present package include the proposal to accelerate, chiefly for prestige purposes, the availability of an operational satellite communications system? ADDED PER 1986 REVIEW

Recommendation: This objective should be approved, as being both feasible and a possible "first".

2. Approach to be followed - Should the accelerated communications satellite program be pursued as a Government operation or on an approach leading to a commercial operational system under Government regulation? If the latter approach is followed, will the objective of having an operational system in being at the earliest possible date be met?

Recommendation: The approach now being developed by the Administrator of NASA to expedite with direct Government assistance the availability of a commercially operated satellite communications system should be approved.

3. Responsibility for Coordination - There is need for a clear assignment of responsibility for leadership and coordination of the several agencies of the Government concerned with non-military satellite communications systems.

Recommendation: That this responsibility be given to the Administrator of NASA.

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C. Meteorology

1. Interim TIROS Program - Should the proposal for extending further the TIROS meteorological satellite program be approved? ADDED PER 1986 REVIEW

Recommendation: Yes, because of the valid requirements for continuous meteorological satellite data pending the establishment of the NIMBUS operational system.

2. Initiation of Operational Program - Should the proposal for initiating with 1962 funds the establishment of an operational "Nimbus" satellite meteorological system be included in the present package?

Recommendation: Yes, in view of its potential civil and military usefulness as well as the "prestige" aspect.

3. Assignment of budgetary responsibility - Should the estimates for initiating the "Nimbus" operational system be included in the Weather Bureau budget or in the NASA budget? In either case the division of labor between NASA and the Weather Bureau would be the same.

Recommendation: The provision of general meteorological services is clearly a function of the Weather Bureau, and there appears to be no sound reason for altering previous plans under which the Weather Bureau was to budget for funds for an operational satellite meteorological system.

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D. Other Issues:

1. Further acceleration of ROVER - NASA and AEC have resubmitted proposals for a further acceleration of the ROVER nuclear rocket project ($23 million NASA; $7 million AEC). The additional funding would initiate development of a flight type engine and construction of the ground test facilities required to test it. The objective would be to make it possible to schedule an initial flight test in 1966 or 1967.

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The ROVER nuclear rocket is not regarded as a part of the manned lunar landing program. Its applications are still uncertain but would probably come in future planetary missions. The issue, as raised in Part I, paragraph 4, is whether it is necessary, desirable, or feasible to proceed on an expedited basis towards a difficult ROVER flight test program scheduled at the same time as the high priority manned lunar landing program will be in its flight test phase, without unduly dissipating our resources and capabilities. If we are to make such a major effort to achieve prestige and technological advances through the manned lunar landing program, it would appear that we could accept a possible delay of a few years in the ROVER program without serious detriment to our overall national position.

Recommendation: The proposed further acceleration of ROVER be deferred and be reconsidered at the time of the 1963 budget decisions. By that time the dimensions and details of the manned lunar landing program should be more clearly defined, and the relations and possible interferences between the ROVER and manned lunar landing programs can be better assessed.

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PART III - SUMMARY OF BUDGET RECOMMENDATIONS

The present status of detailed budget planning does not permit a meaningful detailed appraisal of budgetary requirements. It is quite possible that the total additional amounts proposed for 1962 may be too low, but it would appear that approximately the sums proposed are sufficient to set the programs properly in motion.

The attached recommendations have the following effects:

1. The entire $62 million estimate for the large solid booster development has been included in the amounts for NASA in accordance with Alternative "B" set forth in ANNEX I. If Alternative "A" is adopted, $50 million would be shifted from the NASA estimates to the DOD estimates.
2. The proposed further acceleration of the Rover project has been deferred as discussed in Part II, paragraph D.
3. Certain internal shifts are suggested in the distribution originally proposed by NASA of the amounts for the manned lunar landing and supporting programs. These changes and certain changes in the distribution of the NASA total by appropriation accounts appear to approximate more closely the 1962 needs of the program. Further changes in the internal distribution of the 1962 estimates will probably be necessary as additional planning and supporting detail for the estimates become available.

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Summary of Budget Recommendations

Additional 1962 New Obligational Authority - in millions

	Agency	NASA-DOD Report	Staff Recom.	ADDED PER 1986 REVIEW Change
By Program Area				
I. Manned lunar flight, including intermediate objectives and supporting programs:				
1. Spacecraft for manned lunar landing and supporting programs	NASA	$210.5	$210.5.	--
2. Liquid Nova development	NASA	112.5	122.5.	+$10.0
3. Solid Nova development*	DOD	62.0	-----	-62.0
	NASA	--	62.0*	+62.0
4. Unmanned lunar exploration	NASA	63.0	63.0	--
5. Scientific satellites and sounding rockets	NASA	15.0	5.0	-10.0
6. Other supporting costs	NASA	53.0	53.0	--
II. Communications satellites	NASA	50.0	50.0	--
III. Meteorological satellites:				
1. Tiros	NASA	22.0	22.0	--
2. Operational Nimbus	WB	53.0	53.0	--
IV. Other programs:				
1. Centaur backup	DOD	15.0	15.0	--
2. Rover	NASA	23.0	--	-23.0
	AEC	7.0	--	-7.0
Total, all agencies...		686.0	656.0	-30.0
By Agency				
NASA: Salaries and expenses		20.0	30.0	+10.0
Research and development		404.9	418.0	+13.1
Construction of facilities		124.1	140.0	+15.9
Total NASA		549.0	588.0	+39.0
DOD (Air Force)		77.0	15.0	-62.0
Weather Bureau		53.0	53.0	--
AEC		7.0	--	-7.0
Total, all agencies		686.0	656.0	-30.0

* $50 million for solid booster development would be shifted from NASA to DOD estimates under Alternative "A" in ANNEX I.

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ESTIMATED PROJECTIONS OF US SPACE AND RELATED PROGRAMS
Based on Current Estimates
(New Obligational Authority in millions)

	Present 1962 Budget	1962 Add-ons (Staff Recom)	Total 1962	1963	1964	1965	1966
Nat'l Aeronautics & Space Admin.							
Major Vehicle & Propulsion Development Projects:							
For manned lunar landing.....	330.5	122.5 1/	453.0	805	880	880	915
Solid booster development 1/....	-	62.0 1/	62.0	125	150	125	100
Rover (NASA only) 2/.....	17.5	- 2/	17.5	40	110	270	270
All other	82.0	-	82.0	44	20	100	300
Major Space Flight Programs:							
Manned Space Flight	103.7	210.5	314.2	725	1200	1300	1300
Communications	44.6	50.0	94.6	110	130	145	110
Meteorology	28.2	22.0	50.2	50	50	50	50
Scientific Investigations in Space	176.1	68.0	244.1	440	550	645	535
Supporting Development and Op'ns	283.9	53.0	336.9	510	943	1062	1059
Aeronautical & Space Research...	144.0	-	144.0	150	160	160	160
Program Direction	24.8	-	24.8	30	40	40	40
Total, NASA	1235.3	588.0	1823.3	3029	4233	4777	4839
Department of Defense							
Current Military Space Programs.	1005.9	-	1005.9	1300	1360	1475	1675
Solid Booster Development 1/....	-	- 1/	-	-	-	-	-
Centaur Backup Development	-	15.0	15.0	25	10	-	-
Total, Dept. of Defense ..	1005.9	15.0	1020.9	1325	1370	1475	1675
Atomic Energy Commission							
Rover (AEC only) 2/.....	42.0	- 2/	42.0	45	45	60	60
All Other	31.6		31.6	37	40	44	48
Total, AEC	73.6	-	73.6	82	85	104	108
Weather Bureau	2.2	53.0	55.2	65	60	60	60
Total, US Space & Related Programs	2317.0	656.0	2973.0	4501	5748	6416	6682

1/ $50 million in 1962 and undetermined amounts in succeeding years would be shifted from NASA to Defense under Alternative "A" in ANNEX I.

2/ Excludes proposed add-ons for acceleration of Rover program in FY 1962.

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ANNEX I

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LARGE SOLID BOOSTER DEVELOPMENT - CLARIFICATION OF NASA AND DOD RESPONSIBILITIES

The Problem

The DOD-NASA report proposes the immediate development of large solid rocket launch vehicles as a parallel development to the liquid NOVA to assure a high degree of success in achieving the manned lunar landing goal. It proposes that DOD (i.e., the Air Force) be responsible for this development, being fully responsive to NASA requirements. The intention is that a timely decision will be made (end of CY 1962 or in 1963) to carry forward only the liquid or the solid NOVA class booster developments and cancel the other.

The proposal that DOD (i.e., the Air Force) be responsible for the large solid booster development is based on (1) the desirability of utilizing DOD capabilities in the development of large solid boosters, (2) the likelihood that a by-product of such a development will be a solid booster of a size that may be required in future military space projects, and (3) the desire to have the Air Force play a major role in the development of future space vehicles.

The proposal that this development be "fully responsive to NASA requirements" is based on the necessity for systems and schedule integration of the solid booster development with the total effort toward the manned lunar landing goal, for which NASA is to be responsible.

In order that the division of responsibility this implies will not impede the achievement of the objectives of the program and so that all concerned will have a common understanding of the role of each agency, it is essential that there be a clear understanding at the outset on the following points:

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1. The scope of the development and test program for which the Air Force is to be responsible (motor development, motor and unit stage development, or complete cluster stage development; static testing only or both static and flight testing).
2. The division of technical responsibilities for such matters as determining performance requirements and objectives, deciding technical approaches to be followed, scheduling of development and test program, determination of static test and launch facility requirements, and actual technical direction of the development program.
3. The division of budgetary responsibility for the development program and for the static test and launch facilities required.

Recommendations

The guiding principles should be the following general points which have been agreed to by the Administrator of NASA and the Secretary of Defense:

A. The Administrator of NASA and the Secretary of Defense will assume responsibility for management of the program to achieve its objectives in the best interests of the United States. NASA and the Department of Defense, and all elements of each, will cooperate to the fullest extent to achieve these objectives.

B. NASA, as an integral part of its overall responsibility for the manned lunar landing program and the vehicle systems required therefor, will be responsible for determining the

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requirements to be met in the solid booster development and for making at the appropriate time the choice between the use of solid or liquid booster.

C. The Air Force will play a major role and will serve, in effect, as "executive agent" for NASA for the conduct of the entire effort aimed at development of large solid boosters for use in the manned lunar landing program.

Within this framework, it is recommended that the more specific assignment of responsibilities be as follows:

1. Scope:

   a, DOD (Air Force) be responsible (1) for motor development, including static and single unit flight test, and (2) as agent for NASA, for the development, static test, and flight test of clustered solid stages required in the manned lunar landing program, and (3) for development and flight test of any military vehicle systems using solid boosters that may be approved in the future.

   b. NASA will be responsible for flight test of complete multi-stage vehicle systems required on the manned lunar landing program, with decision on the extent of Air Force responsibilities to be made at a later date.

2. Technical:

   a. NASA be responsible for determining performance requirements and objectives and interface requirements as they relate to vehicles for the manned lunar program.

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ADDED PER 1986 REVIEW

b. DOD (Air Force) be responsible (1) for determining, subject to NASA general approval, the technical approaches to be followed, the development and test schedules, the static and other ground test facilities required, and (2) for the actual technical direction and management of the development program.

c. NASA be responsible for determining launch facility requirements, based on advice from and with the cooperation of DOD (Air Force).

3. Budgeting (Alternative recommendations; see discussion below):

ALTERNATIVE "A" (Generally consistent with NASA-DOD Report):

a. DOD (Air Force) budget (1) for development and static and flight testing of motor and unit stage, and for industrial and test facilities at contractor plants, and (2) for any specific military vehicle systems using solid boosters that may be approved in the future.

b. NASA budget for (1) development of clustered stages, (2) for static test facilities at Government installations and other facility requirements which in the Air Force would come under the "Military Construction" appropriation, except for items peculiar to military applications of solid boosters, and (3) for launch and flight test facilities, with the funds to be made available as appropriate to the Air Force as agent for NASA.

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c. DOD (Air Force) would be responsible for funding cost-overruns and increased costs due to program changes occurring within the DOD (Air Force) area of budget responsibility as defined above, after the preparation of the budget estimates, unless special flexibility can be authorized under which NASA could transfer additional funds to DOD (Air Force) to meet such costs.

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ALTERNATIVE "B" (Would represent a change in the current NASA-DOD agreement):

a. NASA budget for all funds required for solid booster development and testing related to the manned lunar landing objectives, and provide funds to DOD (Air Force) as agent for NASA.

b. DOD (Air Force) budget only for specific military features or any military vehicle systems using solid boosters that may be approved in the future.

Discussion of Alternative Recommendations on Budgeting

On the assumption that budgeting responsibility is to be divided between NASA and DOD (Air Force), the division recommended above as Alternative "A" has the advantages that:

1. It corresponds fairly well with NASA and DOD mission objectives, i.e., the clustered booster development required for NASA's manned lunar landing program would be budgeted by NASA and the motor and unit stage development which may have or lead to possible future military applications would be funded by DOD (Air Force)

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2. It provides for budgeting in a single agency for development of both the solid and liquid clusters--only one of which is to be carried to completion under present plans. ADDED PER 1986 REVIEW

3. It avoids the practical problems and delays of legislative authorization and additional committee clearances that would be involved if "Military Construction" funds are budgeted on the DOD (Air Force) side.

However, this or any division of budgeting responsibilities for the manned lunar landing booster development would forego the advantages of single source budgeting for the entire program cited below under Alternative "B". In particular, any arrangement under which DOD (Air Force) budgets for part of the development effort towards the solid NOVA class booster required by NASA runs into difficulties with respect to the handling of cost overruns and program changes resulting in increased budget requirements in the DOD (Air Force) area of responsibility--a situation which is very likely to occur in this program. Neither alternative in paragraph c. above would be very satisfactory from a management point of view. If the additional costs are to be funded by DOD (Air Force), the additional requirements will be in competition with other purely military requirements in the reprogramming of available DOD (Air Force) funds. If they are to be met by NASA under some special transfer authority, the pressure and incentive for efficient management of the project by DOD (Air Force) would be reduced and the rationale for providing the basic amounts in the DOD (Air Force) budget estimates in the first place would be undercut and confused.

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Alternative "B" would have the following advantages and would be preferable from a management point of view: ADDED PER 1986 REVIEW

1. It would provide maximum flexibility in the conduct of the entire manned lunar landing program and permit NASA to apply resources as needed to both solid and liquid approaches.
2. It would avoid practical problems of identifying and estimating separate DOD (Air Force) and NASA budget requirements in advance each year, which is especially difficult at this time because there is no development plan or other basis for such estimates.
3. It would clearly fix (on NASA) responsibility for funding cost overruns and program changes subsequent to the preparation of budget estimates, and would not place these requirements in competition with military requirements in reprogrammings of the Air Force budget.
4. It would be consistent with the generally accepted and desirable principle that budgetary responsibility should correspond to program responsibility.
5. It would not detract significantly from the objective of giving the Air Force a major role in space vehicle development.

May 17, 1961

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UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC, 1961-72
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AUG 15 1963

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8/24/63

Dear Dr. Seaborg:

This is in reply to your letter of August 2 requesting this Department's concurrence in your proposal to send a survey team to Baker and Howland Islands preparatory to the use of the islands as test sites should testing in the future become necessary.

Without passing on the question of the ultimate use of Baker and Howland as test sites, I wish to advise that we have no objection to your sending an engineering team to the islands.

We approve your study of the ecological problems as we should like to see possible adverse effects minimized.

Sincerely yours,

Secretary of the Interior

Hon. Glenn T. Seaborg
Chairman
Atomic Energy Commission
Washington, D. C.

CLASSIFICATION CANCELLED *
BY AUTHORITY OF DOE/OC
REVIEWED BY [illegible] DATE 8/29/88
* Ltr Dept. Interior SMoak
To DOE, oc Siebert dated 8/12/88
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R. Boger 7/17/86
H. Hoppe 6/17/86

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SIGNED: [signature]

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THE WHITE HOUSE
WASHINGTON

903972

November 14, 1964

NATIONAL SECURITY ACTION MEMORANDUM NO. 318

MEMORANDUM FOR

THE SECRETARY OF STATE
THE SECRETARY OF DEFENSE

Subject: The Future of the Nuclear Defense of the Atlantic Alliance

1. In the next months we face highly important negotiations and decisions on this subject. These decisions relate not only to the MLF proposals now under discussion in Paris, but to the interests and concerns of the new British Government. It is also obvious that we shall have to take careful account of the interests and purposes of France.

2. Our own interest is, as it has been, to find the most effective means of advancing the partnership of the Atlantic Community in nuclear defense as in other matters, and to do this without giving encouragement to the spread of nuclear weapons.

3. To carry out these purposes effectively, it is essential that this Government should be united, and accordingly it is my desire that all of the activities of this Government relating to the nuclear defense of the Atlantic Alliance should be fully coordinated among the White House, the State Department and the Defense Department.

4. More specifically, I desire that all officers of this Government who travel overseas to discuss this matter should have written instructions cleared in the White House, the State Department and the Defense Department. Such instructions, where appropriate, should also be used by other officers of this Government as guidance.

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BY AUTHORITY OF DOE/OC
J. Diaz 1/12/89
* Memo to Brabosky to DOE, OC dated 11/17/88
J. Diaz 1/12/89

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5. I also desire that the Secretary of State and the Secretary of Defense should make an explicit designation of those officers who are authorized to discuss these problems with the press, and that other officers should be instructed to refrain from such discussion during this period of critical negotiation. A parallel arrangement will be instituted in the White House. It is critically important that this Government should speak with one voice on this subject in the future.

6. Finally, I request that detailed recommendations and proposals should be worked out for my consideration by the end of this month so that there may be time for careful consideration and decision before my meeting with Prime Minister Wilson on December 7 and 8.

47214

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FOLDER-PAGE 92047

July 31, 1968

STRATEGIC MISSILE TALKS PROPOSAL

The elements of a U.S. proposal for the proposed U.S.-USSR strategic missile talks are outlined below. This proposal should be viewed as an entity since that is the basis on which it has been evaluated.

I. Fixed Land-Based ICBM Launchers

The proposal would require cessation of the initiation of construction of any additional strategic offensive land-based missile launchers as of September 1, 1968. The Soviet Union would be permitted to complete the launchers which it is constructing as of that date. Beyond that date, however, it would not be allowed to initiate further deployment of fixed ICBM launchers. Under no circumstances would either side be permitted to deploy more than 1,200 ICBM launchers. Building of additional silos, enlarging of existing silos, changing basic external configuration of silos and other launchers, and the relocation of launchers would be prohibited. No additional restrictions would be imposed upon technological improvements of launchers or missiles already deployed including increasing the hardness of existing silos and deployment of MIRV's, or the retrofitting of existing launchers with new missiles.

II. Fixed Land-Based IRBM/MRBM Launchers

Further construction of fixed land-based launchers for IRBM/MRBM (ranges greater than 1,000 km) would be prohibited. The retrofitting of existing IRBM/MRBM launchers to accommodate ICBM missiles would be prohibited. The installation of ICBM missiles on

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IRBM/MRBM launchers would be prohibited as would the conversion of IRBM/MRBM missiles to ICBM missiles. Building of additional silos, enlarging of existing silos, changing basic external configuration of silos, further hardening of and other launchers and the relocation of launchers would be prohibited. No additional restrictions would be imposed upon technological improvements of launchers or missiles already deployed or the retrofitting of existing launchers with new missiles of intermediate or medium range.

III. Mobile Land-Based Strategic Offensive Missile Systems

The proposal would impose a complete ban on the deployment of mobile land-based, strategic offensive missile systems (ranges greater than 1,000 km). Missile systems with such ranges carried by waterborne vehicles on inland waterways would also be prohibited. Any such existing systems would be destroyed.

IV. Mobile Sea-Based Strategic Offensive Missile Systems

A. The proposal would ban the construction of additional strategic offensive missile launching submarines or of additional launchers in existing submarines. This prohibition should apply to all submarines with ballistic missile or cruise missile launchers. Such submarines under construction as of September 1, 1968, could be completed, subject to agreement on their number. There would be no limitation on the characteristics of SLBMs or SLCMs, or on retrofitting missile submarines with new or larger missiles of the type with which they are equipped. The fitting out of surface ships with facilities for firing offensive ballistic missiles would be prohibited.

B. There would be no replacement of ballistic or cruise missile submarines within the first five years of the agreement. During that period the two sides would undertake to reach agreement on rules

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governing subsequent replacement of submarines. In the absence of a supplementary agreement on such rules, each side may replace submarines after five years from the date of the initiation of the agreement provided that replacement does not increase the total number of submarines or of submarine-launched ballistic missiles or cruise missiles.

V. ABMs

equivalent The proposal would ban the deployment of more than a set and [equal] number of fixed, land-based anti-ballistic missile launchers [and] associated radars. antiballistic missile. include reload missile A total prohibition on deployment of mobile ABM systems, both land-based and sea-based, would be imposed. There would be no other constraints on the characteristics of the ABM systems deployed.

VI. Aircraft and Anti-aircraft Systems

The proposal would not include limitations on aircraft or anti-aircraft systems.

VII. Technological Improvements

There would be no prohibition of technological improvement within the constraints of the agreement.

VIII. Verification

The limitations described in paragraphs I through V are proposed to be verified by national means.

XI. Provisions for Revision and Withdrawal

A. Either party may propose revision of the agreement if it believes that conditions affecting the agreement have changed. The two parties shall meet from time to time to discuss the operation of the agreement and possible revisions.

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B. ~~Ten~~ Nine years after entry into force of this agreement the two parties shall meet for a formal review of the operation of the agreement with a view to assuring that the purposes of the agreement, with any revisions that may have been made during the 10-year period, are being realized. In the absence of agreement by the two parties on the continued operation of the agreement with necessary revisions, either party may withdraw by giving six months notice prior to 10 years from the day of entry into force of the agreement. Otherwise, the agreement shall be automatically renewed for another ten years, at which time this review procedure shall be repeated.

C. Either party shall in exercising its national sovereignty have the right to withdraw from the agreement at any time if it decides that extraordinary events, related to the subject matter of the agreement, have jeopardized the supreme interests of its country.

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NATIONAL SECURIT
WASHINGTON, D.C. 20506

June 27, 1969

National Security Decision Memorandum 18

NSC 6/27/69

TO: The Secretary of State
The Secretary of Defense
The Chairman of the Atomic Energy Commission
The Director of Central Intelligence
The Director, Arms Control and Disarmament Agency
The Director, Bureau of the Budget
The Director, Office of Science and Technology

SUBJECT: Review of Underground Nuclear Tests

The President has directed that the NSC Under Secretaries' Committee will review the annual underground nuclear test program and quarterly requests for authorization of specific scheduled tests. The Committee will consider the policy and technical justifications for the proposed tests to determine if they are consistent with the requirements of national security and foreign policy.

When considering the subject of underground nuclear tests, the Under Secretaries' Committee will include, in addition to its regular membership, the Director of the Office of Science and Technology, the Director of the Bureau of the Budget, the Chairman of the Atomic Energy Commission, and the Director of the Arms Control and Disarmament Agency.

The following guidelines will apply to the review and approval of nuclear tests that might violate or be regarded as violating the Nuclear Test Ban Treaty. A nuclear test that is intended to be fully contained underground will be included in this category if there is a significant possibility that the test will place measurable amounts of radioactive debris beyond the boundaries of the United States under circumstances in which the debris could be credibly related to the test. Any other nuclear test which by its nature could reasonably give rise to domestic or foreign charges of a violation of the Nuclear Test Ban Treaty will be included in this category even though the sponsoring agency believes that the charges would prove to be unfounded. The guidelines are:

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BY AUTHORITY OF DOE/OC
*, Memo NSC Gaboske To DoE, OC/Gilbert dated 11/17/88 11/17/89

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Chr USAEC, 1961-72
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-- In planning the nuclear test program, the Atomic Energy Commission and Department of Defense will make every effort to avoid tests that might be regarded as being a violation of the Nuclear Test Ban Treaty. It is recognized that this will be a matter of judgment since the Nuclear Test Ban Treaty does not contain precise technical criteria as to the nature of prohibited tests.

-- If the Atomic Energy Commission or the Secretary of Defense believes after careful study that a particular test should remain in the program despite the possibility that it might give rise to a claimed violation of the Nuclear Test Ban Treaty, the sponsoring agency will submit the test for review by the Under Secretaries' Committee.

-- In support of the proposals for each nuclear test of this type, the sponsoring agency will prepare for the reviewing committee a detailed study of the importance of the proposed test and the possible direct or indirect effects associated with the test that might be regarded as evidence of a violation of the Nuclear Test Ban Treaty. The study of effects associated with the test will include an analysis of (a) the anticipated distribution of particulate and gaseous radioactive debris under the full range of possible meteorological conditions; (b) the extent to which blast, electromagnetic, and other direct radiation phenomena associated with the test will occur in the atmosphere; (c) the possibility that various foreign countries would be able to detect the anticipated level of radioactive debris and other phenomena associated with the tests with their detection instrumentation; (d) visible phenomena in the vicinity of the test site; and (e) planned or expected publicity.

The results of the Committee's review of the underground nuclear test programs and its recommendations should be transmitted to the President in time to allow him to give them full consideration before the scheduled events are to take place.

NSAM 269 and NSAM 307 are hereby rescinded.

cc: Chairman, Joint Chiefs of Staff

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June 19, ~~1964~~

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Chr USAEC, 1961-72
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NATIONAL SECURITY ACTION MEMORANDUM NO. 307

TO: The Secretary of State
The Secretary of Defense
The Chairman of the Atomic Energy Commission
The Director of Central Intelligence
The Chairman of the Joint Chiefs of Staff
— The Director of Arms Control and Disarmament Agency
The Director of the Bureau of the Budget
The Special Assistant to the President on Science and Technology

SUBJECT: Review of Underground Nuclear Tests

The President has reconstituted the Review Committee on Underground Nuclear Tests. The Review Committee, under the chairmanship of the Special Assistant to the President for National Security Affairs, will be composed of the Secretaries of State and Defense, the Chairman of the Atomic Energy Commission, the Director of Central Intelligence, the Chairman of the Joint Chiefs of Staff, the Director of the Arms Control and Disarmament Agency, the Director of the Bureau of the Budget, and the Special Assistant for Science and Technology, or their designated representatives.

The Review Committee will review the annual underground nuclear test programs and the quarterly requests for authorization of specific scheduled tests. The Review Committee will consider the policy and technical justifications for the proposed tests to determine if they are consistent with the requirements of national security and foreign policy.

The results of the Committee's review and its recommendations should be transmitted to the President in time to allow him to give full consideration thereto before the scheduled events are to take place.

The Review Committee is also directed to perform the functions specified in NSAM No. 269.

McGeorge Bundy

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REVIEWED BY Memo NSG Graboske DATE 1/17/89
* Memo NSG Graboske to DOE, OC Gilbert dated 1/17/89

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THE WHITE HOUSE
WASHINGTON

October 31, 1963

NATIONAL SECURITY ACTION MEMORANDUM NO. 269

CLASSIFICATION CANCELLED *
BY AUTHORITY OF DOE/OC
J. Deary 1/17/89
REVIEWED BY DATE
* Memo NSC Graboske TO DOE, OC dated 11/17/88
Gilbert
1/17/89

TO: The Secretary of State
The Secretary of Defense
The Chairman of the Atomic Energy Commission
The Director of Central Intelligence
The Chairman of the Joint Chiefs of Staff
The Director of Arms Control and Disarmament Agency
The Special Assistant to the President for Science and Technology

SUBJECT: Procedure for Approval of Certain Nuclear Tests

The President has directed that the following procedure be instituted for the review and approval of nuclear tests that might violate or be regarded as violating the Nuclear Test Ban Treaty. A nuclear test that is intended to be fully contained underground will be included in this category if there is a significant possibility that the test will place measurable amounts of radioactive debris beyond the boundaries of the United States under circumstances in which the debris could be credibly related to the test. Any other nuclear test which by its nature could reasonably give rise to domestic or foreign charges of a violation of the Nuclear Test Ban Treaty will be included in this category even though the sponsoring agency believes that the charges would prove to be unfounded.

1. In planning the nuclear test program, the Atomic Energy Commission and Department of Defense will make every effort to avoid tests that might be regarded as being a violation of the Nuclear Test Ban Treaty. It is recognized that this will be a matter of judgment since the Nuclear Test Ban Treaty does not contain precise technical criteria as to the nature of prohibited tests.

2. If the Atomic Energy Commission or the Secretary of Defense believes after careful study that a particular test should remain in the program despite the possibility that it might give rise to a claimed violation of the Nuclear Test Ban Treaty, the sponsoring agency will submit the test for review by a committee, under the chairmanship

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FOLLOWING IS EXCERPT FROM BACKGROUNDER FOR MEDIA EDITORS BY DR. KISSINGER AT SAN CLEMENTE JUNE 26. GROUND RULES: EMBARGOED UNTIL 6:00 A.M. EDT, JULY 2. ATTRIBUTABLE TO ADMINISTRATION OFFICIALS. DIRECT QUOTATION NOT RPT NOT PERMITTED.

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OFFICE DIARY
GLENN T. SEABORG
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PERHAPS THE MOST INTENSE INTERNATIONAL CONFLICT THAT EXISTS TODAY IS BETWEEN COMMUNIST CHINA AND THE SOVIET UNION. THIS AFFECTS INTERNATIONAL EVENTS IN A MOST COMPLEX WAY. WITHIN THE COMMUNIST COUNTRIES, ESSENTIALLY THE SOVIET UNION, WE ARE NOW IN A POSITION WHERE PERHAPS IT CAN BE ARGUED THAT THE COMMUNIST PARTY HAS NO REAL FUNCTION EXCEPT A VESTED INTEREST IN THE PROMOTION OF INTERNATIONAL TENSION. THEY ARE NOT RPT NOT NEEDED TO RUN THE STATE. THEY ARE NOT RPT NOT NEEDED TO RUN THE ECONOMY. THEY CAN JUSTIFY THEMSELVES BEST BY VIGILANCE AGAINST FOREIGN DANGER.

BUT STILL THE SOVIET UNION HAS BEEN MORE COMPLEX AND LESS FANATICAL THAN COMMUNIST CHINA. IT IS ONE REASON WHY WE ARE NOW ENGAGED IN THE TALKS WITH THEM ON THE LIMITATION OF STRATEGIC ARMS, TALKS IN WHICH I BELIEVE THAT THE VESTIGES OF THE PREVIOUS PERIOD AND THE APPROACH OF THIS ADMINISTRATION CLASHED INITIALLY, THOUGH THEY HAVE NOW COME TOGETHER.

WHEN ARMS CONTROL FIRST BECAME A SUBJECT OF CONSIDERATION, THERE WAS A SMALL GROUP OF DEDICATED MEN WHO BELIEVED THAT THE ONLY WAY YOU COULD GET THE GOVERNMENT EVER TO FOCUS ON THE PROBLEM WAS TO BROWBEAT THE SENIOR OFFICIALS AS MUCH AS POSSIBLE ABOUT THE ADVANTAGES IN THE ABSTRACT OF THE LIMITATION OF ARMAMENT, AND THEREFORE, MUCH OF THE INTELLECTUAL COMMUNITY PUT THEMSELVES ENTHUSIASTICALLY BEHIND THE CONCEPT OF IT AND THEY WERE MUCH BETTER ABOUT THE THEORY OF WHY YOU SHOULD DO IT THAN THEY WERE ABOUT THE PRACTICE OF WHAT IT IS THAT YOU SHOULD DO.

NOW WHEN WE CAME INTO OFFICE, WE WERE ASSAILED FROM ALL SIDES BY THE ARGUMENT THAT WE HAD TO IMMEDIATELY COME FORWARD WITH A PROPOSAL, THAT WE HAD TO RUSH INTO NEGOTIATIONS ON THE LIMITATION OF STRATEGIC ARMS. WE RESISTED IT AND WE WERE THE SUBJECT OF MANY PROFOUND EDITORIALS THAT POINTED OUT THAT WHERE IN PREVIOUS ADMINISTRATIONS THE WHITE HOUSE HAD PUT ITSELF UNRESERVEDLY BEHIND ARMS CONTROL, IN THIS ADMINISTRATION WE HAD DRAGGED OUT FEET, AND THEREFORE, NO PROGRESS WAS BEING MADE.

BUT THIS WAS NOT RPT NOT THE CASE. WE BELIEVED THAT THE DESIRABILITY OF LIMITING STRATEGIC ARMS WAS NOT RPT NOT WORTHY OF DISCUSSION ANY MORE. THAT ISSUE WAS CONSIDERED SETTLED.

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BUT WHAT WAS DIFFICULT WAS TO DETERMINE THAT WHEN YOU ENTERED INTO NEGOTIATIONS ABOUT A SUBJECT OF THAT COMPLEXITY THAT YOU KNEW WHAT YOU WERE TALKING ABOUT, BECAUSE YOU HAVE DIFFERENT WEAPONS SYSTEMS ON BOTH SIDES, DIFFERENT PURPOSES ON BOTH SIDES.

THE MOST DISASTROUS COURSE, IT SEEMS TO US, WOULD HAVE BEEN TO START IT AS A PURE NEGOTIATING PROCESS -- FOR US TO PUT FORWARD A PROPOSITION THAT WE HAD NOT RPT NOT REALLY UNDERSTOOD, FOR THEM TO PUT FORWARD A PROPOSITION AND THEN TO STAKE EACH OTHERS' PRESTIGE ON THEM.

SO WHAT WE DID INSTEAD WAS -- WHAT I BELIEVE, WHAT I KNOW, HAVING WORKED ON THIS SUBJECT BOTH AT HARVARD AND IN THE GOVERNMENT -- THE MOST THOROUGH ANALYSIS THAT HAS EVER BEEN MADE OF THE REQUIREMENTS OF CONTROL, WEAPON SYSTEM BY WEAPON SYSTEM. WE DELAYED THE OPENING OF THE NEGOTIATIONS BY EIGHT MONTHS UNTIL WE KNEW WHAT WE WERE TALKING ABOUT. WE DID NOT RPT NOT FOCUS ON JUST ONE NEGOTIATING PROPOSAL. WE HAD PACKAGES OF PROPOSALS WHICH MADE IT POSSIBLE FOR THE OTHER SIDE TO RESPOND TO VARIOUS APPROACHES AND WHICH MADE IT POSSIBLE FOR US TO RESPOND TO THE VARIOUS PROPOSITIONS OF THE OTHER SIDE.

I BELIEVE THAT LARGELY AS A RESULT OF THIS PREPARATION WE CAN SAY THIS: FIRST, THE NUCLEAR TEST BAN NEGOTIATIONS LASTED FOUR YEARS AND THEY CONCERNED ONLY ONE RELATIVELY SIMPLE PROBLEM. THE NON-PROLIFERATION TREATY NEGOTIATIONS LASTED THREE AND A HALF YEARS AND THEY CONCERNED A PROBLEM THAT DID NOT EVEN AFFECT US, BUT OTHER COUNTRIES. WE CURRENTLY HAVE NEGOTIATED IN HELSINKI AND VIENNA LESS THAN A YEAR. IT IS POSSIBLE TO SAY TODAY, THAT THE NEGOTIATIONS HAVE BEEN THE MOST THOUGHTFUL ON BOTH SIDES THAT HAVE BEEN CONDUCTED IN THIS FIELD. IF THERE IS GOING TO BE AN AGREEMENT, IT WILL BE IN MUCH LESS TIME THAN EITHER OF THE OTHERS, AND IT WILL BE MUCH MORE COMPREHENSIVE THAN EITHER OF THE OTHERS.

I DON'T WANT TO GIVE ANY DEADLINES, BECAUSE, AS I WILL POINT OUT IN A FEW MINUTES, I HAVE MY DOUBTS ABOUT DEADLINES, BUT I THINK THAT THE PROSPECTS FOR SOME AGREEMENT ARE VERY REASONABLE, AS THE SECRETARY OF STATE POINTED OUT YESTERDAY. IN ANY EVENT, WHETHER WE GET AN AGREEMENT IN THE REASONABLE FUTURE OR NOT, WE ARE SO CLOSE TO UNDERSTANDING WHAT THE PROBLEM IS THAT ANY TIME THAT THERE IS A POLITICAL DECISION ON THE OTHER SIDE OR ON BOTH

Department of State

TELEGRAM

OFFICE DIARY
GLENN T. SEABORG
Chr USAEC 1961-72
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SIDES, IF YOU WILL, TO GO AHEAD WITH IT, WE NOW KNOW HOW TO GET IT.

BUT WE ARE QUITE OPTIMISTIC AND WE THINK THAT IN THE LONG TERM, WE MAY REACH THIS ACHIEVEMENT.

END EXCERTP.
JOHNSON

[redacted]

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This document consists of 10 pages
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GENERAL ADVISORY COMMITTEE
TO THE
U.S. ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Withdrawn Document ID JAB 2000-31580

May 6, 1970

Dr. Glenn T. Seaborg, Chairman
U. S. Atomic Energy Commission
Washington, D. C.

CLASSIFICATION CANCELLED
WITH DELETIONS
BY AUTHORITY OF DOE/OC
Donald O. Stark 7-31-92
REVIEWED BY DATE
HRSc-H 7/31/92

Dear Glenn:

The General Advisory Committee held its 112th Meeting in Germantown, Md. on May 4, 1970 and in Washington, D. C. on May 5 and 6. Eight of the nine Committee members were in attendance for the entire period. The members are John C. Bugher, Herbert Friedman, Edwin L. Goldwasser, Jane H. Hall, Stephen Lawroski, Norman F. Ramsey, Lombard Squires, William Webster (absent), and Howard G. Vesper (Chairman). The Scientific Officer, Melvin A. Harrison, also attended.

Our recommendations, actions and comments regarding this meeting are summarized below:

1. Executive Session on Reactors

The Committee met in executive session with the Commissioners and the General Manager to review the problems of maintaining viable research on new and advanced reactor concepts at the National Laboratories. A frank and useful exchange of views resulted in better mutual understanding of the concerns of the Committee, and of the several restraints imposed upon the freedom of action of the Commission.

2. Weapons Briefings

Dr. Carl Walske outlined several problems confronting the DOD.

a. Lack of funds prevents the AEC from supporting the military requirements for new warhead production. DELETED DELETED

b. Some progress is being made by the NATO Nuclear Planning Group in studying the concept of tactical nuclear warfare in Europe. No definite requirements for new tactical weapons have been formulated, although the DOD has expressed interest in an 8" projectile and an improved Atomic Demolition Munition.

c. Clandestine introduction of nuclear weapons into the United States is of great concern. The DOD is working closely with the AEC Office of Safeguards and Materials Management on this serious problem.

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d. Although PALS are now installed in nuclear weapons in Europe and will be installed in [DELETED] in FY 71 and in SAC bombers in FY 74, improvement in these safety features is a continuing problem.

General Giller and his staff brought the Committee up to date on the weapons programs.

The Milrow calibration test in October 1969 was very successful in that all of the effects were essentially as predicted. The Richter magnitude agreed with prediction; no venting occurred; no tsunami was produced; no serious disturbance to wildlife was observed; no earthquakes were triggered. The next Amchitka event, Cannikin, is planned for the fall of 1971 with a yield [DELETED]

DOD Guidance assigns Priority 1 in the strategic offensive area to the SCAD (Subsonic Cruise Armed Decoy), a stand-off missile with a 500-1000 mile range. A yield DELETED

In the area of Ballistic Missile Defense, a Modified Spartan with, as yet, undetermined required yields and outputs is also accorded Priority 1. The 8" projectile referred to above is the Priority 1 weapon for General Purpose Forces.

The nine nuclear weapons now in Phase 3 development were reviewed.

3. Funding and Safety Problems in the Weapons Production Complex

General Giller and his associates then discussed the impact that the restricted funding for DMA in FY 1970 and 1971 has had on the weapons laboratories. A reduction in force of about 1080 people at the three laboratories has already occurred. According to very preliminary information about the likely level of funds in FY 1972 for all of AEC's activities, the share tentatively projected for DMA may necessitate further personnel cuts at these laboratories. Some of the people, not designated to be let out, have become so discouraged about the fiscal situation and their professional future at these laboratories that they have elected to leave and enter other fields of work. The Committee is seriously concerned that unless some encouragement can be soon offered to the people at these laboratories, there may well be such an acceleration of departures of good people as to make it very difficult to maintain the viability of the weapons laboratories.

The Committee was also apprised of the results of the AEC's surveys made to provide information on the steps and estimated expenditures needed to improve the safety and assurance of continued availability of the numerous and varied facilities of the weapons production complex. We took particular note of the very large amount of money (over $200 million for the DMA) estimated to be required. In view of this and the already very difficult overall funding problems of the AEC, the Committee recommends that the Commission itself review in depth with the JCAE the safety problems and the magnitude of the expense required for corrective actions at the weapons production complexes.

4. Intelligence Matters

Mr. Charles A. Sommer briefed the GAC on intelligence matters related to weapons development and peaceful applications. Soviet and Chinese weapons tests are being pressed vigorously. After a slowdown in 1969, the French are accelerating their efforts in 1970. Especially noteworthy were Soviet progress in MIRV development, Chinese underground testing and the French approach to operational capability of Polaris-type submarines.

The vigor of the Soviet application efforts is in contrast to the slowdown of the U. S. Plowshare program. The Russians have achieved notable successes in a variety of applications: runaway natural gas fires have been extinguished; oil and gas fields have been stimulated; dams and reservoirs have been created; and a river was diverted to raise the water table.

Soviet reactors are being exported to Czechoslovakia, Rumania and Finland with guarantees of continuing supplies of enriched fuel. No evidence is available of progress on advanced reactors, and the application of nuclear power to desalting appears to be behind schedule.

5. Gas Centrifuge Program

The GAC received an excellent briefing by Mr. George F. Quinn on the recent and prospective advances in the centrifuge enrichment technique. The impressive progress of the past few years has been continued since our last review and the prospects for large diameter supercritical centrifuges appear to be very favorable both technically and economically. It now appears that the centrifuge process may be shown to be economically competitive by the time the decision has to be taken on the next major U. S. enrichment plant (about 1975). However, much additional information is needed on the effective life of the centrifuge, on the operation of the 200-300 unit demonstration cascade, and on the cost of centrifuges when manufactured on a large scale mass production basis. Steps to obtain the critically needed information are being taken by the highly competent present participants in the program. The GAC hopes that this important and fruitful work will be well supported and that even in periods of budget stringency the necessary funds be provided.

6. Executive Session on the Gas Centrifuge Program

Following the request made during an Executive Session with the Commissioners and the General Manager, the GAC discussed in its own executive sessions the difficult question of timing and appropriate procedures for the initial involvement and participation of industry in the gas centrifuge process development. We benefited greatly from additional discussions later with individual Commissioners and Mr. Quinn. In view of the discussions the GAC concluded it is desirable to retain, for the present, security classification of gas centrifuge work. We also feel that there is still some time available for the Commission staff to study adequately how and when to bring about increased industrial participation; two major industrial organizations are now involved as prime contractors in the program. We feel strongly that these problems of increased industrial participation are difficult. The

proposed study should be initiated now in order to provide answers to the important questions of timing, procedures, and identification of organizations to be involved.

Because of the importance of this matter, the GAC plans to review it from time to time, with the next such review to occur at our Washington meeting in about six months.

7. Research and Development Review

The Committee heard a review of the research and development programs in progress. An impressive record of accomplishment continues to be compiled. By far the overriding problem in all Divisions lies in the severe budgetary constraints which have been applied to all Commission activities. The overall cut of about 3% when combined with a general inflation of about 6% and a still larger inflation in the costs of technical products will result in an effective cut of about 10% in these activities. About 1400 employees are being released by the seven National Laboratories principally involved in these programs. The impact on participating universities is harder to assess but may be even more serious.

The Plowshare program has suffered a 40% cut in the present version of the FY 71 budget. Over the past five years the level of support of Plowshare has been reduced to 1/3 its previous value. This year the principal impact of the cut will be upon the near-surface excavation program.

In view of the concern with regard to release of radioactive debris and in view of the related indirect jeopardy to the development of the nuclear power program, the Committee understands the decision to postpone the further conduct of nuclear excavation experiments. We do however support continued pursuit of the program of basic research and development of Plowshare explosives. The Non-proliferation Treaty assigns to the nuclear powers a responsibility to make available to the non-nuclear powers the technology and materials required for peaceful uses of nuclear energy. The Soviet Union is moving ahead rapidly beyond the development stage and into the use of nuclear explosives for excavation.

The results of gas stimulation experiments look promising and efforts should continue to develop this technique to assess its potentialities. Sound information with regard to environmental effects is required in order to prepare convincing documentation for legal challengers.

The Division of Biology & Medicine has been busy responding to the challenges of environmentalists. Sound research is in progress which is providing answers to some of the questions which are being raised. These projects are vital to the AEC's program.

The Division of Research is plagued not only by the budget squeeze which is affecting all parts of the program, but in addition by the problem of absorbing two major new programs, that of the National Accelerator Laboratory and that of the Los Alamos Meson Facility within a diminishing total budget.

Faced with the problem of cutting ongoing programs to accommodate the new ones, the Division has planned the termination of one major facility, the Princeton-Pennsylvania Accelerator, during the next year. The Committee endorses the wisdom of this difficult decision within the context in which it was made. However, we note that the situation was originally portrayed as one in which any small decrement of support was said to carry with it a major decrease in research output. It is now being claimed that at a support level of 1/3 the previous operating funds, a significant research output could still be maintained. If this argument is established as valid the Committee recommends that consideration be given to funding a low-level continuing program, possibly jointly with the National Science Foundation, with a transfer of operating funds from other projects. Plans for the future of the Cambridge Electron Accelerator should be formulated within this context.

The controlled fusion program has made remarkable progress in the last few years. It remains a potential long range solution to our energy needs.

The work of the Isotopes Development Division has progressed well. The uses for isotopes are expanding, and their application to the problem of monitoring effluent pollutants is promising. We were pleased to learn that the National Heart and Lung Institute now assigns high priority to the development of an isotopically-powered heart engine.

The Division of Nuclear Education and Training foresees a serious impact from the reduction in its graduate fellowship program necessitated by the budget squeeze. Although the Committee agrees that there is a serious problem involved in providing the trained personnel that would be required by an expanding nuclear power industry, we believe that the situation is not yet urgent and that there may be other ways in which the training of these people may be supported.

8. Awards

The Committee has considered carefully the Commission's request that it review the desirability of establishing another set of awards intermediate between the Fermi and Lawrence Awards. The GAC feels that the introduction of such a new level of award is undesirable and that such action might well jeopardize the continuity, stature and administration of the existing awards. On the other hand, we recognize the need of the Commission for means of recognizing unusual accomplishment not covered by the present awards. Accordingly, we suggest that:

(a) A new gold medal be established to be conferred at the Commission's discretion for outstanding scientific or technical accomplishment in the atomic energy program.

(b) This medal be reserved for unique and highly significant accomplishments, and would not necessarily be awarded on a regular basis.

(c) The nominations for this medal originate within the AEC, preferably from the Division Directors or the Commissioners themselves, with GAC review if desired by the Commission.

A majority of the GAC feels that no monetary award should accompany this medal.

9. Fermi Award for 1970

The Committee discussed the nominations for the subject Award in executive session in the evening of May 5th. The recommendation emanating from this particular deliberation is covered in a separate letter addressed to the AEC Chairman.

10. Expiration of GAC Terms

Three Presidential appointments to the General Advisory Committee will expire August 1, 1970. The individuals involved are Stephen Lawroski, Howard G. Vesper, and William Webster.

11. Reactors Subcommittee Plans

The Reactors Subcommittee will undertake a review of the Nuclear Engine for Rocket Vehicle Application program over the next few months. Planning is underway with Mr. Milton Klein, the Director of the Space Nuclear Systems Division. The Subcommittee, comprised of Howard G. Vesper, William Webster and Lombard Squires (Chairman), will visit the Westinghouse Astronuclear Laboratory at Pittsburgh, Pa., on June 23rd. The Subcommittee will also visit the Nuclear Rocket Development Station near Las Vegas, Neavad, on July 24th, following GAC meetings held earlier that week in Livermore, California. The other members of the General Advisory Committee are being invited to participate, as are the Commissioners.

12. Next GAC Meeting Plans

The next meeting of the General Advisory Committee will be held at the Lawrence Radiation Laboratory in Livermore, California, on July 20, 21 and 22. Agenda items presently suggested for the meeting are:

a. review of the Laboratory program for 1 1/2 days;

b. discussion of the Reactors Subcommittee report on the visit at Pittsburgh.

13. Weapons Subcommittee Plans

The Weapons Subcommittee will meet at the Sandia Laboratories in Livermore, California, on Thursday, July 23rd, the day immediately following the next meeting of the full Committee, at LRL-Livermore, for the purpose of reviewing the Sandia-Livermore program in general. The meeting will be the first of a GAC group at Sandia-Livermore.

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14. 114th GAC Meeting Plans

The next following meeting of the full Committee will be held in Washington, D. C. on November 9, 10 and 11, 1970.

Sincerely,

/s/ Howard

Howard G. Vesper
Chairman

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GENERAL ADVISORY COMMITTEE
TO THE
U.S. ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

[redacted]

July 22, 1970

[redacted]

Dr. Glenn T. Seaborg, Chairman
U. S. Atomic Energy Commission
Washington, D. C.

[redacted]

Dear Glenn:

The General Advisory Committee held its 113th meeting at the Livermore Laboratory of the Lawrence Radiation Laboratory on July 20, 21 and 22. The members of the Committee are John C. Bugher (absent), Herbert Friedman, Edwin L. Goldwasser (absent July 22), Jane H. Hall, Stephen Lawroski, Norman F. Ramsey, Lombard Squires, William Webster, and Howard G. Vesper, Chairman. The Scientific Officer, Melvin A. Harrison, also attended.

We were pleased that three Commissioners, Clarence E. Larson, Theos J. Thompson, and James T. Ramey, were able to join us for discussions during the meeting.

The Committee wishes to express its pleasure in connection with your reappointment as Chairman of the Commission, and looks forward to continuing to work with you.

Our recommendations, actions and comments regarding the 113th meeting are summarized below.

1. Session with the Director

The Committee reviewed certain general Livermore problems with Dr. May. These included discussion of the Zinner report and pressures on the future relationship of both LRL-Livermore and LASL with the AEC and the University of California; also, the background and current status of the Gofman-Tamplin controversy.

Major discussion centered on the problems created by budget restrictions, which have necessitated the lay-off of some 280 employees. As a result of this experience, the Laboratory is reviewing its personnel policies to improve future procedures. Restrictions on equipment expenditures are also serious.

The Committee shares the concern of the Director regarding what appears to be excessive cuts in money in two areas. The most important is that of weapons "testing" in Nevada and Alaska. The techniques and procedures for this work have improved so that it is now in reality an extension of laboratory experimentation and development. It is therefore more necessary than ever if we are to continue efficient improvements in atomic weapons -- especially during this period of restricted weapons budgets.

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The other area is Plowshare, where Livermore has been cut severely. The Committee has previously expressed its feeling that this project is very worthwhile and should receive more appropriate support.

Over-all, the Committee was very well impressed by the Livermore Laboratory and program. The work underway is well planned and the quality of direction and technical personnel is high.

2. Vault Tour

The 113th meeting opened with a tour of the weapons display vault. Two LRL strategic systems, the W62/Poseidon and the W68/Minuteman, which are currently in production, were discussed in detail. Progress in the design of the W71/Spartan was also described. The vault display is done in a very effective manner and includes an interesting exhibit of scaled models of USSR and USA strategic offensive and defensive missiles, and tactical missiles. This side-by-side display of weapon systems makes an impression not achievable with any number of charts and pictures.

3. Weapons Program Briefings

We received a series of very informative and encouraging briefings by H. L. Reynolds, P. H. Moulthrop, R. E. Kidder, J. H. Nuckolls and C. A. McDonald on the progress being achieved by the LRL people in their weapons development program.

We were very much impressed by the excellent progress they have made in the following areas since the visit of the full Committee in 1965 and of the Weapons Subcommittee in July, 1967:

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We were also pleased with the good beginning and plans they have made for the study of lasers for potential weapons applications.

The LRL people attribute most of their recent advances in weapons design to information derived from underground experiments and to the extensive use of the powerful memory and speed capabilities of their complex of computers.

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We feel that LRL deserves great credit for its early and sustained pressures to acquire the best available computational capabilities. We commend the Commission for its steady and persuasive efforts on Congress to provide the funds for advanced computers for all the weapons laboratories.

4. Underground Testing Program

Discussion of the Nevada underground testing program emphasized that the word "testing" should not be interpreted to mean that only yes/no answers are obtained. A more appropriate word might be "experimental" in that diagnostic techniques now provide detailed information concerning space and time behavior of the nuclear system under investigation, as well as neutron, x-ray and gamma-ray output data. These techniques are being constantly improved, simplified and reduced in cost to allow their use on as many events as possible. The Committee endorses this approach to the weapon development program. We are also of the opinion that unexpected negative performance of a device does not necessarily constitute a wasted experiment and hope that this point is appreciated by concerned non-AEC offices.

In the area of high yield testing we understand that about 1 Mt (maximum credible yield) is now considered to be the upper limit for Pahute Mesa. [redacted]

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5. Comparison of U. S./ U. S. S. R. Strategic Forces

J. Rosengren gave the Committee an interesting and informative briefing on the relative strengths of the various components in the strategic force capabilities of the United States and the Soviet Union. The comparison was very disquieting.

6. Physics Program Presentation

The Committee was given a review of the Laboratory's physics program. Each of the four Division Leaders reported, in turn, on activities within the Theoretical Physics Division, the Experimental Nuclear and Atomic Research Division, the Laser Research Division and the Equation of State and Material Properties Division. It was impressive to see how well the overall program has been developed to meet the needs of the mission-oriented programs of the Laboratory.

The Theoretical Division has major concerns in the areas of hydrodynamics, explosion theory, nuclear theory and neutron transport. All of these relate to the dynamics of fast nuclear reactions which can be studied experimentally only in stars and bombs. The former are so remote and the latter so expensive that all possible modeling must be done by calculation. These calculations achieve real significance only insofar as the supporting theory approaches validity and sophistication. The solutions to many one-dimensional problems

in explosion theory are now well understood. Multi-dimensional theory is still to be satisfactorily developed and to some extent demands still larger and faster computing facilities.

The experimental nuclear physics program has had major activities centered around the cyclotron and linear accelerator facilities. The former is soon to be upgraded to a 30 MeV "CycloGraaff" accelerator which will combine the energy that is characteristic of a conventional cyclotron with the resolution typical of a Van de Graaff. That instrument will be used for further exploration of cross sections, particularly of high Z materials. The linear accelerator is now also in the process of replacement. The new machine, soon to go into operation, will have an energy of 100 MeV and will feature the possibility of accelerating positrons and thus the creation of monochromatic gamma-ray beams. It will be used for studies of weapon vulnerability due both to neutron and photon effects.

A third division participating in the physics program is principally concerned with laser research. Interest in this field is now very high as a result of the potential of an intense, rapid laser pulse to trigger a thermonuclear reaction. Development of high power short-pulse lasers is underway. Through the use of these, matter can be heated to temperatures higher than 10 KeV. The coupling of a laser beam to a plasma is also under intensive study.

The fourth divisional report described work that is being done to achieve a better knowledge and understanding of the equations of state of various elements, and the properties of matter in regions of pressure, temperature and density which are not normally achieved in the laboratory. Accurate predictive capability with regard to the behavior of nuclear explosions requires a detailed knowledge of the equations of state of the substances which are used. An important part of the program of this Division is the study of the equation of state of hydrogen outside the region in which the Saha equation is known to apply.

7. Bio-Med Program

Roger E. Batzel described a well-balanced bio-medical research program. The basic objectives include the following:

a. To provide guidelines for prediction of the release of radionuclides into the biosphere both from tests of devices and from release associated with nuclear power processes. An authoritative handbook of information is being assembled which should be highly valuable in estimating dosages to man from various forms of radioactive release.

b. To determine the fate of radioactive releases from a variety of specific events. Interesting observations have been made of the persistence of radionuclides such as C^{14} and H^3 in ecosystems at test sites. The Rulison site will be used for a thorough evaluation of the tritium history.

c. To assess biological availability and metabolism. Combined field measurements and laboratory experiments are tracing the routes of radionuclides in soil, milk pathways and aquatic systems. The study is broad-gauged and well designed. Particular attention is given to metabolism of high atomic number elements associated with Plowshare explosives. Advanced techniques are being applied for low-level gamma ray counting, for specialized applications of the electron microprobe and for improved electron microscope imaging of thick biological specimens through a computerized image construction technique. These instrumental improvements are valuable assets to the basic research effort.

d. To search for threshold effects at low doses. Systematic studies are being pursued of the effect on chromosome material and DNA with particular attention to tritium exposure.

In view of the great concern about the effects on man of chronic exposure to low doses of radiation in all aspects of the atomic energy program, the GAC is pleased to find such studies being conducted at Livermore and emphasizes their importance.

e. To search for means of limiting uptake and facilitating removal. Countermeasures are being investigated for limiting the radiation burden to man from nuclear events. These measures include modifications to the design of nuclear devices as well as methods of inhibiting transfer of specific elements in food chains. Fundamental studies of elemental transport through membranes promise to have useful applications beyond the specific problems of radiation hazards.

The totality of bio-medical research at Livermore appears to be responsive to the most pressing questions associated with nuclear operations and also has an impressive component of basic studies with excellent promise of important results.

8. Plowshare

The Committee was given a report on the progress of work on gas stimulation by nuclear explosives. It appears that this practice is feasible and can be expected to produce impressive quantities of usable fuel, probably at an economic price. Its practical application would seem to depend on economic factors and its eventual support to come from private industry. We understand that the Laboratory is proceeding to develop appropriate devices that can be offered for sale at home and abroad and that work is being carried on to determine the extent and effect of accompanying radioactivity. Both of these efforts should be supported.

We were also given a report on Plowshare work in the Soviet Union, resulting from information released during a recent visit of an AEC team to that country. We were impressed by the extent of what has been done there and by the breadth of their plans for the future.

9. Computers

S. Fernbach described the computational facilities available at Livermore, and later the Committee visited these installations. With three CDC-6600's and two 7600's and with all but one of these knitted together in the OCTOPUS program, Livermore has the world's most powerful computational facilities. Next year the even more powerful CDC-STAR computer is to be delivered to the Laboratory.

Since 1952, the power of computers has gone up by approximately a factor of two every year, and the AEC, especially through its weapons laboratories, has stimulated and led this advance. Livermore with its present computers can do arithmetic operations more rapidly than the entire adult population of the U. S. if each person expertly operated a mechanical desk calculator. Alternatively, as many arithmetic operations as were done by Los Alamos during all of World War II can be done now at Livermore in one minute.

The availability of such powerful computers is of great value to the weapons program, particularly under the limitations of the atmospheric test ban. The value of the powerful computers is well illustrated DELETED

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The hardware and software developments pioneered by Livermore have not only made vital contributions to the weapons programs but have also led to advances in computer technology and software that have been applicable to U. S. computers generally. These AEC sponsored advances are in a large part responsible for the present U. S. leadership in this vital field. Applications of computer advances stimulated by the AEC in general and by Livermore in particular provide some of the clearest examples of valuable technological "spin-off" from AEC sponsored research and development.

Both because of these general applications and because of the direct value of the computers to many of AEC's programs and to its weapons program in particular, we hope that the AEC through Livermore and other of its laboratories will continue to lead the way in the development of more powerful computers.

10. CTR Program

It is generally believed that a useful positive power balance in a fusion reactor requires plasma confinement at temperatures greater than 10 KeV and at a density-containment time product greater than 10^{14} sec cm^{-3}. Encouraging progress toward these goals is being obtained at the major centers of CTR research.

The program at LRL is most impressive. It involves four facilities studying both open and closed systems of plasma confinement and the use of neutral beams for sustaining the plasma; improved versions of all four systems are under development which should provide higher plasma temperatures, densities and confinement.

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Recent progress towards achieving proof-of-principle of CTR has been sufficiently encouraging to justify engineering studies on large scale fusion reactor systems. A unique approach has been undertaken at LRL involving study of the direct conversion of fusion plasma energy to electricity. The results of a preliminary engineering study appear very promising since the direct conversion system proposed would operate at very high efficiency, perhaps greater than 95%. Such high conversion efficiencies would result in (1) an order of magnitude increase in the ratio of power generated to power required to sustain the fusion reaction and thus reduce the temperature-density-time requirement of the plasma confinement; (2) an order of magnitude decrease in waste heat per unit of power generated; (3) ability to use fuel cycles producing fewer neutrons which must be recovered or safely dissipated; and (4) elimination of requirement to extract useful heat energy from the plasma for power generation.

Demonstration of a practical direct conversion system would thus be a most important step toward developing a practical fusion reactor. The Laboratory's experimental and engineering studies should be pressed forward vigorously.

11. Environmental Studies

Reflecting the increasing concern of the country in better control of the environment, the Laboratory has conducted a broad review of air pollution control and research problems to determine whether certain unique experience and techniques available at LRL-L would be helpful. The results were reviewed with us by R. C. Maninger.

The review group concluded that inadequate technical information exists today to enable proper combustion emission standards to be set, and that LRL could be helpful in both improved measurement techniques and instrumentation. For example, this could include application of Plowshare experience in creating numerical models of the atmosphere in given areas to predict transport of contaminants to and from man. Bio-medical experience at Livermore might also be helpful in providing further information on the effects of atmospheric contaminants in very small concentration on human beings. This could include work in the very important and little understood field of synergistic effects of coated or surface coalesced particulate matter.

Proposals have been made to HEW for modest funding for work in atmospheric models and certain instrumentation and related techniques, but no grant has been made. LRL is now attempting to obtain financing through a coordinated University of California project. The Committee feels that Livermore can contribute along the general lines outlined above and is hopeful that reasonable funding can be arranged.

12. Gas Centrifuge Program

The Committee noted with interest that consideration was being given to the construction of a gaseous diffusion plant in Europe on some sort of joint arrangement. It appears increasingly probable that the next major new addition

to our own separative capacity might be a gas centrifuge plant. The possibility is brought nearer by present and prospective increases in electric power rates which further weigh the economic comparison against added gaseous diffusion capacity. We also note that a staff study is being undertaken to consider additional participation by industry in gas centrifuge development.

We feel that such participation is a matter of urgency and should be only on a classified basis. This step is particularly important in view of changing conditions and the need to establish both costs of machines on a repetitive basis and a firm feel for maintenance figures before making a decision to undertake such a major and expensive addition to our capacity. However, we continue to feel it is important that added industrial participation be accomplished in such manner that the outstanding technical program now underway is not disrupted or delayed.

The Committee will be very glad to be of any further assistance in regard to accomplishing industrial participation, and will review the entire situation again at the next meeting.

13. Awards Policy

The Committee reviewed your letter of June 26, 1970 outlining proposed policy on various AEC awards. We are pleased to note general agreement with our earlier recommendations, but are not in accord with the revision in the Lawrence award regulations that eliminates the 45-year age limit.

Our principal reasons for this view are:

a. In effect, this means that the awards will go essentially to individuals in the upper age bracket, thus completely changing the basic concept of this award. We feel the encouragement and recognition of younger scientists and engineers is as important now as ever and that there will continue to be worthy candidates for many years.

b. While it is true that some very able people cannot be considered for the Lawrence award due to age, at least some of these can receive Fermi award consideration during the next few years. As you know, we are now reasonably "current" in our candidates for this award. Also, some of these people might well received recognition through award of the AEC Citation.

c. The Lawrence award with the present age limit is clearly distinct from the Fermi award. With the elimination of the age limit it will tend to be regarded merely as an inferior Fermi award.

d. Some severe administrative problems would arise. We would no longer be able to use advisory panels of senior people in various fields since some or all of them would be eligible for award consideration. Furthermore, an arbitrary internal policy

of recommending two or three individuals under the age of 45 would be unfair to those who submit nominations, since they would not know of this restriction.

We urge the Commission to reconsider this matter and to leave the Lawrence award regulations unchanged. If we have any dearth of good candidates in the future, the age limitation can be re-examined at that time.

The GAC sent announcement of the 1971 Lawrence award nominations (including the 45-year age limit) to the technical press several days before receipt of your June 26 letter. In line with discussion of this matter with Commissioner Larson we do not plan to make any change in this announcement or other plans for the 1971 Lawrence award unless you advise otherwise. Under this procedure any changes in regulations for this award would apply to the 1972 situation.

14. NERVA Program

A brief report was received from the Reactor Subcommittee of a NERVA rocket program at Pittsburgh on June 23 with Westinghouse and Aerojet-General. This will be supplemented by a visit to the Nuclear Rocket Development Station at Las Vegas on July 24. Following this, the Subcommittee will submit a report to the GAC for consideration and action at the next regular meeting.

15. Weapons Subcommittee Plans

The Weapons Subcommittee will visit the Livermore Laboratory of the Sandia Corporation on July 23 to hear a review of its general program. The report of the Subcommittee will be transmitted to the full Committee for consideration in November.

The Subcommittee also proposes to visit the Sandia Laboratory at Albuquerque on February 18, 1971.

16. NEXT G.A.C. Meeting Plans

The next meeting of the Committee will be held in Washington, D. C. on November 9, 10 and 11. As usual, the first day is scheduled to be spent at the Germantown Building. Suggested agenda items are as follows:

a. Session with the Director of Regulation to review his general program;

b. Session with the Assistant General Manager for Development & Production on the status of the gas centrifuge program and the cascade improvement program;

c. Discussion with the head of the new environmental effects office to review his plans;

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d. Session with the Assistant General Manager for Reactors;

e. Session on materials safeguards programs with the Director, Office of Safeguards and Materials Management, and the Assistant General Manager for International Activities.

17. 115th G.A.C. Meeting Plans

The next following meeting of the Committee is planned for the Los Alamos Scientific Laboratory on February 15, 16 and 17, 1971.

Sincerely,

/s/ Howard

Howard G. Vesper
Chairman

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GENERAL ADVISORY COMMITTEE
TO THE
U.S. ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Declassified per SIA02000316000

February 25, 1971

Dr. Glenn T. Seaborg, Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Dear Glenn:

The General Advisory Committee held its 115th meeting at the Los Alamos Scientific Laboratory on February 23, 24 and 25. The members of the Committee are Rolf Eliassen (absent Feb. 25), Herbert Friedman (absent Feb. 23), Edwin L. Goldwasser, Jane H. Hall, Norman F. Ramsey (absent Feb. 24), Lombard Squires, William Webster (absent), and Howard G. Vesper, Chairman. We are hopeful that the vacancy on the Committee will be filled shortly. The Scientific Officer, Melvin A. Harrison, also attended for the entire period.

Our recommendations, actions and comments regarding the meeting are summarized below.

1. Weapons Subcommittee Visit

The Weapons Subcommittee visited the Sandia Laboratories in Albuquerque on Monday, February 22. An account of this visit was adopted by the full Committee and is appended.

2. Status of Sherwood Subcommittee Review

The Sherwood Subcommittee (GAC-as-a-whole) has held two meetings. The first in Washington on December 16, to hear a summary of the entire CTR program which had been given on the previous day to the President's Science Advisory Committee. The second meeting was held on January 20 jointly with the Standing Committee on the CTR program at ORNL to review the ORNL program and to discuss the CTR program with the Standing Committee. Further meetings are scheduled for LASL on Feb. 26, for LRL-Livermore on March 15 and 16, for Princeton on April 15, for Madison on June 23, and for Cambridge on June 28 and 29, 1971.

The Subcommittee is planning to submit an interim report on the application of lasers to the CTR program following the LRL meeting, and its final report following the Cambridge meeting late in June.

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RESTRICTED DATA
This [redacted] contains restricted data as defined in the Atomic Energy Act. Transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

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3. Review of LASL Program

Presentations were made to the Committee by some 20 senior members of the LASL staff covering important items in the laboratory program. Summaries of these discussions follow.

A. Phase 3 Weapons and Small Weapons

R. G. Shreffler reviewed the Los Alamos weapons development program with particular emphasis on the W66, W73, and W74 which are now in Phase 3. These projects appear to be going well[DELETED

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] The W74 for a projectile for the 155 mm howitzer appears to have many practical advantages over the W48 which is now in the field. Several weapons which might enter the Phase 3 category in the next couple of years were discussed; the one that now appears most likely to advance to Phase 3 is an improved warhead for the 8" artillery projectile.

C. C. Cremer reviewed the research and development pertaining to

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B. Review of other Los Alamos Weapons Work

Robert Thorn, Division Leader of the Theoretical Design Division, listed the areas of current concern in weapon design problems. He stressed the fact that the continuing improvements in the design of

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C. LAMPF

The Committee was given an exceedingly interesting and encouraging report of progress on the Los Alamos Meson Physics Facility. We were gratified to learn that the President's 1972 budget request includes the final installment of construction funds to complete the project. A great deal of ingenuity has been demonstrated by the staff in the course of construction of the linac.

In accelerator design the invention of post couplers to couple the excitations between adjacent drift tubes of an Alvarez-type linac is an outstanding contribution, and the development of side-coupled empty cells for use in the traveling wave portion of the linac has made possible an unprecedented efficiency in the conversion of rf power to beam power. As one result of the successful development of this concept in a prototype electron accelerator, industry in less than one year has adapted the design to production models of high energy X-ray machines. Dozens of these compact machines have been built commercially and are already in use in hospitals.

The Committee was impressed by the versatility of this new accelerator. Neutron and proton bombardments will be possible in addition to the meson irradiations from which the project has derived its name. To provide greater efficiency in the use of accelerated protons, bombardments of several targets in series can be carried out. Experimental utilization will be further enhanced by the development of techniques through which H^+ and H^- ions can simultaneously be accelerated using both halves of the accelerating wave form. Furthermore, using a special ion source, polarized protons also can be simultaneously accelerated.

The initial plans for spectrometers and other major items of experimental equipment seem to have been imaginatively conceived and are in the process of implementation. We were pleased to learn of the wide interest that is being displayed in the future research program of LAMPF. More than 500 potential users from about 150 different universities and laboratories are actively participating in the planning stage of that program.

In addition to the facilities which will be provided within the initial scope of the project, new ideas have been formulated for future growth of the program, and beam stubs are being provided within the present scope of construction which will permit the addition of certain new facilities without the need for any extended shut-down. One such stub is designed for later development to provide short neutron bursts for the study of weapons problems. Among the various possibilities for future developments, we were particularly interested in the potential of the accelerator for research in nuclear chemistry and in its possible use for cancer therapy. The latter application is, perhaps, the most promising and exciting. We were gratified to learn that required incremental funding may be forthcoming from the National Institutes of Health. The initial needs for this π^- therapy program are modest. The Committee favors the earliest possible implementation of this plan and believes that it should receive enthusiastic support.

D. Laser Program

The laser program described by K. Boyer is broad gauged in its approach to both advanced laser technologies and to applications. Significant progress has been made and further progress is anticipated in improving the performance of mode locked Nd glass lasers, pulsed CO_2 lasers and chemical lasers employing HF systems. Glass lasers may be expected to deliver power fluxes of 10^{17} - 10^{18} w/cm^2 in pulses as short as 10 picoseconds. For the CO_2 laser 10^5 joules per 0.3 nanosecond pulse is anticipated.

Among the applications under development are: laser ignited fusion reactions; high intensity X-ray sources suitable for vulnerability studies; and pulsed neutron sources for flash photography. The expertise of LASL is particularly evident in the approach to problems of coupling laser output into various pellet configurations.

E. Intense Neutron Sources

L. D. P. King described progress toward development of the kinetic intense neutron generator (KING). This novel concept employs a moving liquid fuel, uranyl sulphate, in a cylindrical configuration. Ultimate design goals are the production of a flux of 10^{17} thermal neutrons/cm^2 sec at 500 Mw with a fuel flow rate of about 60 ft/sec. The Committee encourages further efforts to develop this generator.

F. Stable Isotope Program

E. S. Robinson described current capabilities for producing the isotopes ^{13}C, ^{16}O, ^{17}O, ^{18}O, ^{14}N and ^{15}N by cryogenic distillation. There appear to be considerable advantages from the use of such stable isotopes in SNAP reactors, heart pumps, heart pacers, heavy ion accelerators and a broad spectrum of tracer applications. The cost of ^{13}C has been reduced to $32/gm from about $3000/gm and larger scale production could further reduce costs. Substitution of ^{13}C for ^{14}C as a tracer could open much wider scope for applications where radioactivity is undesirable. Techniques for detection, such as mass spectrometry and NMR, are more elaborate and expensive than simple counting, but still within the economic resources of most potential users. A number of potential industrial applications of ^{13}C were also pointed out. The GAC encourages LASL to push its work toward defining applications.

G. High Altitude Phenomenology

D. M. Kerr reviewed the observations and analyses of airglow and ionospheric effects associated with high altitude nuclear explosions. An improved understanding of weapons effects has been gained in recent years as a result of fundamental information derived from experimental releases of barium clouds to trace the strength and configuration of electric and magnetic fields in E and F regions. Numerical modeling has indicated the extent and duration of blackouts at radar frequencies as well as distortions produced by field aligned striations in ionization. LASL plasma injection experiments from rockets contribute to the verification of computer modeling results.

The phenomenology uncovered by these modeling and tracer experiments is important to the present development of ABM systems and a continuing vigorous effort should be supported.

H. High Explosives Systems Development

The Committee toured the S-Site assembly building where a most informative exhibit of the HE systems for a number of small primaries had been arranged. The Committee was impressed with the many successful developments which have resulted in the availability of HE systems of improved efficiencies and small sizes. These improved systems have in turn been skillfully integrated with the nuclear systems resulting in the small primaries needed in modern weapons systems.

I. Biomedical Program

The Committee was given an interesting review of work in progress in the Laboratory's biomedical research program. The associated activities span a wide range including the study of effects of radiation on primates, the application of C^{13} tagging techniques to clinical diagnoses, and research on the effects of hot particles of plutonium on lung tissue. Of particular interest is the work that has been started on a

molecular radio-biology program. This is a program of fundamental research on the effects of radiation on the transfer of genetic information in biological systems using specially synthesized polypeptides of known molecular configuration. This work has promise of providing further understanding of the reproduction of normal cells, the production of cancer cells and the possible initiation of that process by the effects of radiation. The Committee believes that this kind of work should be encouraged.

J. Safeguards

The Laboratory has developed a highly successful set of measuring instruments to determine accurately and nondestructively the amount and enrichment level of fissile material in a variety of containers such as scrap barrels, unirradiated reactor fuel elements and even process vessels and piping. These instruments include compact and portable sources and detectors for neutrons, gamma radiation and x-rays, and have been combined in a unique mobile non-destructive assay laboratory (Monal). It should now be possible for nuclear power reactors and fuel element fabricating and reprocessing facilities to establish accurately the amounts of fissile material in process residues and scrap accumulations and thus greatly improve inventory control by reducing material un-accounted for (MUF). The application of these nondestructive assay methods will also greatly improve safeguards against clandestine diversion of nuclear materials in both the civilian and military sectors.

The Committee is highly impressed with the great potential of these developments and with the speed and resolution with which they are being carried out by the Laboratory.

K. NERVA Program and Advanced Propulsion Concepts

Los Alamos has been responsible for the development of fuel elements for the NERVA reactors. Fuel element life of about an hour has been demonstrated in full scale engine tests and new designs currently under development should extend life to the goal figure of 10 hours with multiple restarts. The improved elements are fabricated from solid solution of uranium/zirconium carbides in graphite and coated with an impervious layer of zirconium carbide. To achieve the goal of reactor endurance of 10 hours, it will also be necessary to replace (the present) pyrolytic graphite insulation with insulation based on porous zirconium carbide.

Since it is unlikely that full scale engine tests or tests involving the Peewee reactor will be undertaken in the near future, the laboratory proposes to build a small test reactor called a nuclear furnace to carry out the endurance testing for the improved fuel elements and insulation materials. The nuclear furnace will contain 50 full length test positions and will thus be about 3% of the size of the NERVA reactor.

The Committee believes strongly that the fuel development and testing program should be given the highest priority in the curtailed NERVA program and be continued both at the Laboratory and at the Test Site.

L. Project Rulison

The details of this event were reviewed. Although final determinations are not yet available, the stimulated gas flow has been higher than expected, along with more water than anticipated. The tritium level is about 1/4 that of the Gas Buggy test, due partly to a "cleaner" device and partly to greater gas volume. LASL expects the tritium level to decline in time to 1/5 to 1/10 the present figure, which should reduce it to safe level without dilution. It is interesting that several utilities operating in the Four Corners area are willing to take the gas at present tritium levels. Further gas stimulation tests are possible.

M. Executive Session with LASL Director

Dr. Agnew reviewed certain administrative and policy changes made or planned. The Committee noted with interest his plan to up-grade the quality of the "theoretical" group and endorses this proposal. We agree with Dr. Agnew's plan to have a few visiting "Fellows" of outstanding ability spend a year or so at LASL.

We also noted with interest steps taken to accomplish better budget control. Establishment of a new "Office of Special Projects" should be useful in making sure the special expertise in many fields at LASL is made available to other government agencies where needed.

It is apparent that Dr. Agnew is providing strong leadership to the Laboratory.

4. Lawrence Award for 1971

The GAC recommendations on this subject are covered in a separate letter addressed to the AEC Chairman.

5. Election of Chairman

The annual election of chairman was held at this meeting, with Mr. Vesper reelected to the post.

6. Next GAC Meeting Plans

The dates of May 17, 18 and 19 for the next meeting in Washington, D. C. were confirmed. Agenda items to date are as follows:

[redacted]

A. session with Assistant General Manager for R&D;
B. session with Assistant General Manager for Military Application;
C. session with Director of Intelligence Division;
D. session with Director of Office of Environmental Affairs.

7. 117th GAC Meeting Plans

The next following meeting of the General Advisory Committee is tentatively scheduled to be held at the Argonne National Laboratory and the National Accelerator Laboratory on August 17, 18 and 19.

Sincerely,

/s/ Howard

Howard G. Vesper
Chairman

Attachment
Weapons report

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