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MEMORANDUM FOR DR. HENRY A. KISSINGER
THE WHITE HOUSE

Subject: NSSM 25: Cape Keraudren Nuclear
Excavation Project and the Treaty
Banning Nuclear Weapon Tests in the
Atmosphere, in Outer Space and
Under Water

As Chairman of the Ad Hoc NSC Study Group, I submit
the enclosed report in response to National Security
Study Memorandum 25 of February 20, 1969.

I should emphasize that there exists among the
agencies and offices involved significant differences
in viewpoint regarding the restrictions of the Treaty
and acceptable courses of action for carrying out
peaceful nuclear cratering explosions under the Treaty.
Accordingly, many statements in this report do not have
the specific concurrence of all agencies and offices
involved in its preparation. The report endeavors to
present the differing views without prejudice.

The Cape Keraudren project is but one segment of
a larger problem of the need for a more clearly defined
relationship between the peaceful nuclear explosions
program and the Limited Test Ban Treaty. The fundamen-
tal differences that exist within the Executive Branch
will arise again, as they have in the past, in essen-
tially the same form when the next Atomic Energy
Commission nuclear excavation experiment is considered.

Herman Pollack

Herman Pollack, Director
International Scientific and
Technological Affairs

Enclosure:
Subject Report.

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Excluded from automatic downgrading
and declassification.

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21

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Cape Keraudren Nuclear Excavation Project
and the Treaty Banning Nuclear Weapon Tests
in the Atmosphere, in Outer Space and Under Water

I. Problem:

To review the relationship of the Cape Keraudren nuclear excavation project to the Limited Test Ban Treaty and the various options by which we might proceed with the project. (Review requested by NSSM 25, February 20, 1969.)

II. Background:

A. Description and History of the Harbor Project

The Commonwealth of Australia on January 22, 1969, asked the US Government to authorize USAEC participation in a study of the economic and technical feasibility, including safety, of using nuclear explosions to create a harbor on the northwest coast of Australia, stated by the Sentinel Mining Company to be required by mid-1971. The US Government responded affirmatively on February 3, 1969. Both Governments have stated that subsequent steps will be subject to later decision.

The concept for the project calls for the simultaneous detonation of five 200-kiloton thermonuclear explosives. The explosions would occur 800 feet beneath the ocean floor and would create a channel about 6,000 feet long, 1,500 feet wide and 350 feet deep, with 200-foot high side lips. (See Appendix A - The Australian Harbor Project.)

B. Relevant Limited Test Ban Treaty History

The Treaty's primary purpose is to inhibit the arms race by banning any nuclear weapon test explosion, or any other nuclear explosion in the atmosphere, in outer space or under water. In addition, an important purpose of the Treaty, as expressed in its preamble, is "to put an end to the contamination of man's environment by radioactive substances."

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The Treaty also prohibits carrying out underground "any nuclear weapon test explosion, or any other explosion. . .if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted."

The Treaty was extended to include "any other nuclear explosions" because of the difficulty of differentiating between weapons test explosions and peaceful explosions without additional controls, e.g., on-site inspection.^{1/}

Thus, explosions for peaceful purposes are subject to the same restrictions as nuclear weapon tests; i.e., they are permissible only if carried out underground and if they do not cause radioactive debris to be present beyond territorial limits. This criterion is imprecise and has given rise to questions of interpretation.

Since the Treaty was signed, both the US and the USSR have made representations to the other concerning their conduct under the Treaty. (See Appendix B - US and USSR Conduct Since the Treaty.)

III. Discussion:

It is assumed that, should the US and Australia decide to proceed with the execution of the Keraudren project, they

^{1/} The State Department Legal Adviser points out that this formulation is incomplete if intended to be used to lay the basis for interpreting the Treaty to permit peaceful explosions if on-site inspection is provided. The Treaty's preamble as well as statements of President Kennedy and other Executive Branch spokesmen made clear that the concern about radioactive contamination from testing was just as important an impetus to the Treaty as arms control considerations. (In fact, the testimony of Administration spokesmen in support of the Treaty pointed out again and again that it would not significantly inhibit US nuclear arms development.) These considerations cannot be left out of any accurate estimate of the scope available for interpretation of the Treaty.

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3

would do so in a manner consistent with their obligations under the Limited Test Ban Treaty (in its present form or as amended).

The Treaty is regarded throughout the world as the single most important agreement, to date, in limiting the nuclear arms race. The Parties to the Treaty can be expected to study any proposals for changes in the Treaty or for interpretations with utmost seriousness.

We would, accordingly, wish to be especially careful to avoid any situation in which reasonable charges or widespread suspicions might arise that the US seeks to circumvent the Treaty. Such a situation would be contrary to our interests, not only because it would cast doubt on the integrity of US commitments, but because it would seriously prejudice our ability to elicit cooperation from key countries whose help we want in important activities (e.g., making the NPT work) in the IAEA, the UN and the ENDC.

On the other hand, both the Executive and Legislative Branches have indicated their desire to further the progress in the important field of nuclear excavation if such progress can be reconciled in a responsible way with our obligations under the Treaty. Relevant to the ongoing program, but not directly pertinent to the Cape Keradren project, are the interests of many key developing countries in the economic significance of Plowshare technology, the potential benefits of which are assured to them under Article V of the NPT.

Until the Feasibility Study is completed, it will not be possible to determine the precise dimensions of the problem which execution of the project would pose with respect to our obligations under the Treaty.

The joint Feasibility Study will, among other things, include estimates of the amounts and kinds of radioactive debris, including induced activity, that may be expected to escape into the water and the atmosphere, and how much of it is likely to pass beyond the territorial limits of Australia, and in what form.

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4

Until we have the results of the Feasibility Study no international commitment on any course of action with respect to the Treaty should be taken. In the meantime, we can obtain a better understanding of international attitudes -- for example in our planned technical talks with the Soviet Union on Plowshare as well as on the role of the IAEA as the appropriate international body to make the benefits of Plowshare available to third countries pursuant to Article V of the NPT.

IV. Courses of Action Considered:

The courses of action set forth below should be considered in light of the fact that, if we decide to proceed with the project, we will be called upon at some time to justify publicly the project as being consistent with our obligations under the Treaty.

A. Amendment

If, on the basis of the Feasibility Study estimates, it is concluded that the project cannot be carried out without an unacceptable risk of violation or reasonable charges of violation of the Treaty, an amendment could be sought.

The Treaty permits amendment by a majority of the Parties (which now total 97), including the concurrence of the US, the USSR and the UK.

Two types of amendment could be considered. First, a general amendment permitting, under specified conditions and procedures, Plowshare projects that would otherwise be prohibited by the Treaty. Second, an amendment limited just to authorizing the Cape Keraudren explosions.

It is doubtful that either of these types of amendment could be accomplished in time to meet the deadline (mid-1970) contemplated for the detonation of the nuclear explosives. This deadline is consistent with the understanding by the Australian Government of the need by the Sentinel Mining Company to have an operating harbor by mid-1971. However,

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SECRET

5

considerations may arise which may slip this completion date. Although the political complexities of negotiating and bringing into force an amendment are considerable and should not be underestimated, we should examine the deadline carefully from all aspects when the Feasibility Study is completed before determining that the amendment route is incompatible with the project schedule. Pros and cons of seeking each kind of amendment are set forth in Annex I.

B. Interpretation

Another possible approach could be based on an interpretation of the Treaty, as for example when radioactive debris would be considered to be present outside of a country's territory. In his testimony before the Senate Foreign Relations Committee during the 1963 hearings on the Treaty, Dr. Seaborg said:

"The intent of the test ban treaty is to prohibit tests in the atmosphere, outer space or underwater, but to permit underground nuclear explosions.

"It is recognized that there may be venting to the atmosphere from some of these underground explosions, and a limitation has been set upon the delivery of radioactive debris outside the territorial limits of the state under whose jurisdiction or control such explosion is conducted.

"In those cases where venting does take place, no problems are presented if the effects are noticed solely within the United States. The treaty would prohibit a test which resulted in a quantity of radioactive debris delivered outside of the country's territorial limits in amounts sufficient to establish that such contamination resulted from a recent test within that country."

This concept has a limited subjective quality since the technical ability of various nations to detect radioactivity varies widely and depends upon the extremes to

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6

which detection techniques are employed, where collections are attempted, and environmental factors. In addition, the sensitivity of detection has markedly increased in the last six years. For example, under the most favorable conditions and utilizing the most sensitive means, almost any amount of radioactivity, however miniscule, can be detected. Nevertheless, in view of the record any change from the interpretation stated during the Treaty hearings may be difficult to justify both to the Congress and to other countries.

It probably would be conceded that the Treaty would not be violated if some minimal amount of radioactive debris passed across the border of a country in which an underground nuclear explosion took place. This leaves room for an approach involving an interpretation of the Treaty, and there are several possibilities.

By way of illustration one could adopt an interpretation of the Treaty that would suggest that radioactivity is "not present", as that term is employed in health and safety guides, and therefore does not constitute "contamination". Another approach, which is not necessarily incompatible with the foregoing, would be to base the interpretation on the practices which have occurred under the Treaty to date. The pros and cons of these approaches to interpretation are summarized in Annex II.

Quite apart from the type of interpretation employed, one is confronted with the tactical question of the techniques that might be used to establish agreement or acquiescence in an interpretation. In the event the data developed by the Feasibility Study and the prevailing political climate suggest that the project could not be conducted without incurring serious allegations of a Treaty violation, broad international acceptance of an interpretation could be explicitly sought. This approach would have the difficulty of being very time consuming and there would be political complexities similar to the amendment process.

On the other hand, if the data and the political climate suggest that the political risks were not likely

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to be very acute, it might be feasible for the US to gain acceptance or acquiescence to an interpretation short of having to canvass all of the Treaty adherents. Selective consultation would stand the risk of challenge from those not consulted. There is a divergence of viewpoint as to the effectiveness of this technique.

These factors would suggest the necessity for preserving some flexibility until the results of the Feasibility Study are known.

C. Other Courses Considered

Consideration was also given to several other possible courses of action. There exists a wide range of viewpoints as to their acceptability. These other courses include:

1. International Resolution

We might seek to have the IAEA General Conference or the UN General Assembly pass a resolution authorizing States to conduct peaceful nuclear explosions under designated observation and control procedures and providing implicitly or explicitly that the Treaty does not apply to explosions conducted under the authority of the resolution.

2. Project Approval

Specific approval of this project might be sought from one of a wide spectrum of groups ranging from those most affected (i.e., neighboring States, the UK and the USSR), to the IAEA, UN or the Treaty signatories.

3. Tacit International Consent to Keraudren

The United States or Australia could inform the other Treaty signatories, the UN, the IAEA, or the countries neighboring Australia that we plan to proceed with the project, convincing as many as possible of the value and peaceful nature of the project without necessarily providing specific rationale of its consistency with the Treaty. We would, as necessary, invite the informed group to observe, to co-sponsor, or to participate.

UNCLASSIFIED

8

4. International Consent to Peaceful Nuclear Excavation.

Consent might be sought, particularly of the Original Parties, that underground nuclear explosions that can be established through inspection as being for a peaceful purpose and not weapons tests as well as not contaminating man's environment, may be conducted.

Secretary Rusk said in NPT Hearings before the Senate Foreign Relations Committee on July 10, 1968, in reply to a question concerning Plowshare under the Limited Test Ban Treaty:

". . . Now, it is also contemplated that in an excavation situation where there might be extra-territorial fallout there would be discussions in a suitable international body such as the IAEA in Vienna and conceivably the Security Council. And one can imagine that there would be consent and agreement that a particular type of explosion for peaceful purposes might occur, despite the limitations of the Test Ban Treaty, with the consent of everybody who would be ready to acknowledge that it is in fact a genuine Plowshare operation with a legitimate civilian purpose."

These possible courses of action would avoid the procedural delays of amendment, and, in that sense, have a greater chance of being accomplishable on a time scale compatible with the harbor project.

As a legal matter, none of these, in and of itself, would alter our obligation to conduct the Keraudren project in compliance with the Test Ban Treaty and, consequently, each would entail the political risks associated with suspicions that the US seeks to circumvent the Treaty. Those who consider these courses therefore unacceptable suggest that favorable resolutions, if obtainable, and development of a consensus on acceptable inspection and control procedures should not be regarded as an alternative to amendment or general acceptance interpretation, but might be helpful in building support either for an amendment or a favorable interpretation.

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