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MEMORANDUM

May 16, 1957

TO: DFI - Mr. Terrill
DFM - Mr. Yost
DFN - Mr. Ogburn
~~DFP - Mr. Yager~~
DRA - Mr. Cunningham

FROM: OIR - George Jaeger

SUBJECT: Draft Background Paper on Nuclear Testing and the "Fourth Country" Problem

You may be interested in the attached draft from the disarmament staff, which was made available to us on an unofficial basis for internal use only.

1/4 bit. - 50 mill

*Japan
Aust.
Comm. China*

cc: OIR - Mr. Allan Evans
OIR - Mr. John Evans

Dept. of State, RPS/IPS, Margaret P. Grafeld, Dir.
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The President's Special Committee
on
Disarmament Problems

The White House, Disarmament Staff
Executive Secretariat

Revision 1 to
DPC NOTE NO. 138
May 8, 1957

DRAFT BACKGROUND PAPER
ON
NUCLEAR TESTING AND THE "FOURTH COUNTRY" PROBLEM

Attached is the second draft of the background paper on the significance of nuclear testing in its effect on the weapons programs of additional countries on both sides of the Iron Curtain, the weight of this factor on U.S. national security, and the effect in other respects on the U.S. security position.

Elizabeth M. Faulstich
Acting Executive Secretary

Attachment

Dept. of State, RPS/IPS, Margaret P. Grafeld, Dir.
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John A. Salsbery

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PROBLEM: To determine the significance of nuclear testing in its effect on the weapons programs of additional countries on both sides of the Iron Curtain, the weight of this factor on U.S. national security, and the effect in other respects on the U.S. security position.

DISCUSSION:

1. The importance of the "Fourth Country" problem has long been one of high priority in U.S. disarmament planning, and apparently is now considered by the USSR as a problem requiring serious consideration in disarmament negotiations.
2. The spread of nuclear weapons to nations other than the USSR, UK and US is considered to be only a matter of time, if no form of disarmament agreement is reached and implemented by the nations now possessing nuclear weapons. The USSR, besides desiring to prevent the spread of such weapons to NATO countries, probably wishes to prevent the satellites and Communist China from developing nuclear weapons programs.
3. The US and USSR have approached the "Fourth Country" problem from different directions. The US proposes cessation of future production of fissionable material except for peaceful purposes, and transfers from past production stockpiles to international control, for national or international uses for peaceful purposes. The US suggests 1 March 1958 as a date to install an agreed inspection system or as soon thereafter as possible upon ratification of the necessary agreement. The cut-off date for future production of fissionable material for weapons purposes would then take effect one month after the inspection system was in place and operating satisfactorily. Under this proposal the US feels there would be little or no incentive for additional countries to enter

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into a costly nuclear weapons program. The USSR, on the other hand, proposes an unconditional ban of nuclear and thermonuclear weapons and prohibition of use, and as a separate proposal, cessation of nuclear testing. In past negotiations the Soviets did not relate the "Fourth Countries" to banning the bomb. However, in their cessation of tests proposal they claim that with a ban on tests no other country could develop a nuclear weapons program.

4. Testing of nuclear weapons is a necessary requirement of a weapons development program, but in certain weapons testing may not be necessary. The distinction lies between testing of the simpler forms of atomic fission weapons on one hand, and the necessity for testing hydrogen and advanced types of fission weapons on the other. A country having technical know-how, motivation and necessary fissionable material could produce and stockpile, without testing, limited numbers of low-yield inefficient atomic weapons. The inefficient use of fissionable materials would result in a considerable cost to a potential weapon stockpile. For the development of hydrogen weapons and atomic weapons of advanced design testing is a necessity.

5. Given scientific capability, nuclear knowledge and fissionable material "Fourth Countries" could clandestinely develop an inefficient low yield fission weapon.

6. A "Fourth Country" could produce and stockpile weapons, providing design and weapon specifications were passed to it by another country

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currently conducting an active nuclear weapons program. Production by the "Fourth Country" of both atomic and hydrogen weapons would probably be governed by the supply of weapons-grade critical material available and the level of their scientific and technical capacity.

7. To become a "Fourth Country" a nation should possess adequate quantities of fissionable materials under its own control, competent scientific and technical personnel, an advanced industrial establishment, substantial financial resources, in order to develop a nuclear weapons program and stockpile of sufficient size to be militarily effective.

Along with this capability motivation is a prime requirement. Among other countries which have the combination of capability and motivation are France, West Germany, Japan, Communist China. In absence of a test agreement it is estimated France could test a low yield weapon in early 1958. Other countries possibly in 5 to 10 years.

8. Limitations of nuclear testing in any one of a variety of ways alone without cessation of nuclear production for weapons purposes and reduction of stockpiles might have a retarding effect on the development of nuclear weapons programs of potential fourth countries. However, as long as the US-UK-USSR are testing, even under restrictions, and developing stockpiles, there remains a motivation in those countries which have the capability of developing weapons programs. Assuming the US supplied the free world and USSR supplied members of the Soviet bloc, with nuclear weapons it appears the US security position might be further endangered by the spread of weapons either on one or both sides. Tensions would probably increase with the spread of nuclear capability.

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9. Cessation of nuclear testing under an agreed proposal, coupled with a satisfactory system of inspection and control might deter other countries from developing a nuclear capability. A moral ban would require major powers to maintain adequate detection systems to guard against violations. However, in the latter case, the burden of proof rests upon the detecting power, if and when clandestine tests are detected. In either case fourth countries would hesitate to conduct nuclear tests in opposition to agreements being carried out by the nuclear powers, and against world opinion. However, this would not prevent the clandestine production of a stockpile of insufficient, low-yield weapons. As long as the production of fissionable material continues without restrictions for peaceful uses only, the possibility of clandestine production of nuclear weapons is ever present. Regardless of the above, it appears that cessation of tests under a system of inspection and control offers a contribution towards an increase in the US security position, primarily because of the hesitancy of potential fourth countries to develop weapons programs clandestinely.

10. Potential "Fourth Countries" could be dissuaded from embarking on a nuclear weapons program if:

- (a) An effective disarmament agreement in the conventional and nuclear field including cessation of production and reduction of stockpiles were entered into and implemented by the US-UK-USSR-France and Communist China, which consequently would draw other nations to it.
- (b) They were provided with weapons under conditions permitting emergency use.

- (e) They were assured of security by the US for the free world and by the USSR for the Soviet bloc.
- (d) They were convinced that the UN could become a world force to guarantee security.
- (e) They were convinced that abstention is a requirement for bilateral or multilateral agreements on atomic power development.
- (f) They possessed an idealism and/or pacifism or lack of strong military tradition.
- (g) They feared the health and genetic effects of nuclear tests and possible future nuclear wars.