

11. Report of the Panel on the Cutoff of the Production of Fissionable Materials for Weapons

Washington, April 1, 1961.

INTRODUCTION AND CONCLUSIONS

The "Panel on Cutoff" submits this report on the problems involved in an international agreement for the cutoff of production of fissionable materials for weapons. The cutoff was studied as a single isolated disarmament measure. If it were to be linked with other measures (e.g., stockpile reduction) it should be re-examined in the new context.

Before presenting our findings, we must emphasize that we were not asked and we make no recommendation as to the advisability of negotiating a cutoff agreement. Such a decision would, of course, require the consideration of matters not included in this study.

We present the following conclusions:

1. A cutoff would have a profound effect on both US and USSR plans for the use of nuclear weapons. Presently planned uses will quickly exceed the prospective stockpile existing as of the cutoff date studied (July 1, 1963).

2. A cutoff of future tritium production would have a particularly serious effect on the weapons stockpiles since, if unreplenished, fifty percent of the tritium in the stockpile would decay in twelve years time. This would result either in the progressive reduction of important weapon systems or in the redesign of the systems with degraded performance. A reduction in tritium would probably be more serious to the US than to the USSR in view of existing US and USSR weapon systems. For the purpose of this report, it has been assumed that a cutoff agreement would allow production of tritium to the extent necessary to maintain the tritium stockpile existing at the time of the cutoff. The proposed inspection system includes provisions for monitoring such production.

3. The larger US stockpile of weapons materials (possibly several times that of the USSR) suggests a US advantage in a stockpile freeze. However, it is impossible to draw any final conclusions as to the net effect of cutoff until the appropriate net military evaluations are completed. We note with deep concern that an appropriate study of the net

military effect of such a proposal is not available, and urge that this deficiency be rectified as a matter of high priority.

4. Without attempting to judge the net military significance of a cutoff, it does appear that the US can maintain a very substantial second-strike retaliatory capability by allocating 25 to 50 percent of the 1963 stockpile to strategic systems. We do not know what levels of Soviet fatalities are required to deter the USSR from initiating an attack nor are we suggesting, by the use of certain examples, that a deterrent strategy based on population kill is a proper strategy for the United States. We note, however, that estimates, based on the assumption, among others, that the USSR will not develop an effective AICBM, indicate that these US systems will cause from 20 percent to 40 percent fatalities in the Soviet Union even after a large surprise Soviet attack with no warning. We note also that whereas cutoff of fissionable material production in 1963 would limit the ability of the USSR to expand its strategic forces, the population kill capability of the US systems is relatively insensitive to a Soviet missile expansion beyond the credited 1963 level. The cutoff would also limit the ability of the US and the USSR to undertake massive AICBM or ASW programs. The amounts of material that the USSR could divert by evasion of the proposed control system would have very little effect on the US-USSR strategic balance.

5. An inspection system to cover the USSR would cost about \$10 million a year and would involve about 450 technical personnel, 350 of whom would have to be in the USSR. In addition to monitoring declared production facilities, this system would require a limited number of peremptory inspections. A high degree of access, not only to declared plants, but also to sites suspected of clandestine activity, is indispensable if the system is to be effective.

This recommended inspection system, when supported by a strong US intelligence effort, should provide a high level of confidence that Soviet evasion could not exceed about 2 percent per year of their 1963 stockpile, which is considered to constitute a relatively small military risk. Adding inspection system requirements for the US and UK would about triple the above cost and personnel figures.

6. Production by other countries, including the Chinese Peoples Republic, is estimated to be relatively small during the next decade and would not constitute a direct danger to either the US or the USSR if their remaining stockpiles are not reduced.

7. The economic consequences of a cutoff of fissionable materials production in itself, while significant, would not be so damaging as to be a serious negative factor in the overall determination of the advisability of a cutoff agreement.

[Here follows the body of the 19-page Report.]

Source: Washington National Records Center, RG 330, OSD Files: FRC 65 A 3464, Atomic 400.112 23 Mar 61. Top Secret; Restricted Data. A table of contents is not printed. This Panel, appointed by the USDA, was known as the Perkins Panel after Chairman Dr. James Perkins. Other members were Manson Benedict, Marion Boyer, Spurgeon Keeny, General Herbert Loper, Donald Musser, George Quinn, Isidor Rabi, Louis Roddis, Herbert Scoville, Walter Singlevich, and William Webster.