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SPECIAL NATIONAL INTELLIGENCE ESTIMATE  
13-4 64

# The Chances of an Imminent Communist Chinese Nuclear Explosion

Handled via

TALENT KEYHOLE



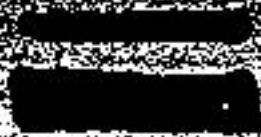
Controls Family

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Submitted by the  
DIRECTOR OF CENTRAL INTELLIGENCE

Concurred in by the  
UNITED STATES INTELLIGENCE BOARD

As indicated overleaf  
26 August 1964



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CENTRAL INTELLIGENCE AGENCY

26 August 1964

SUBJECT: SWIE 13-4-64: THE CHANCES OF AN IMMINENT COMMUNIST CHINESE NUCLEAR EXPLOSION

THE PROBLEM

To assess the likelihood that the advanced stage of construction at a probable nuclear test site in Western China indicates that the Chinese Communists will detonate their first nuclear device in the next few months.

CONCLUSION

On the basis of new overhead photography, we are now convinced that the previously suspect facility at Lop Nor in Western China is a nuclear test site which could be ready for use in about two months. On the other hand the weight of available evidence indicates that the Chinese will not have sufficient fissionable material for a test of a nuclear device in the next few months. Thus, the evidence does not permit a very confident estimate of the chances of a Chinese Communist nuclear detonation in the next few

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GROUP 1  
Excluded from automatic  
downgrading and  
declassification

[REDACTED]

months. Clearly the possibility of such a detonation before the end of this year cannot be ruled out -- the test may occur during this period. On balance, however, we believe that it will not occur until sometime after the end of 1964.

#### DISCUSSION

1. Overhead photography of 6-9 August shows that the previously suspect facility near Lop Nur in Sinkiang is almost certainly a nuclear testing site. Developments at the facility include a ground scar forming about 60 percent of a circle 19,600 feet in diameter around a 325-foot tower (first seen in April 1964 photography), and work on bunkers near the tower and instrumentation sites at appropriate locations is underway. [REDACTED]

[REDACTED] the outward appearance and apparent rate of construction indicate that the site could be ready for a test in two months or so. The characteristics of the site suggest that it is being prepared for both diagnostic and weapon effect experiments.

2. Analysis of all available evidence on fissionable material production in China indicates -- though it does not prove -- that the Chinese will not have sufficient material for a test of a nuclear device in the next few months. The only Chinese production reactor identified to date is

[REDACTED]

the small, air-cooled reactor at Pao-t'ou. As of September 1963, [REDACTED]

[REDACTED] Construction was continuing throughout the site, including some fairly substantial work around the building which houses the reactor. Photography of March 1964 indicated that major construction at the site -- including service roads, [REDACTED] and additional security provisions -- had apparently been completed. Thus we believe the reactor went into operation possibly in the latter part of 1963 but more probably in early 1964. We estimate that, even if no major obstacles were encountered, it would take at least 18 months, and more likely two years, after the starting up of the Pao-t'ou reactor before a nuclear device would be ready for testing. Thus, if the Pao-t'ou reactor started operation no earlier than late 1963 and if it is China's only operating production reactor, the earliest possible date for testing is mid-1965.

3. It is, of course, possible that the Chinese have another source of fissionable material. Such a facility might have been started with Soviet aid as a result of the 1957 Soviet-Chinese aid agreement, probably about the same time as the Lanzhou gaseous diffusion building. We would expect this reactor to be a fairly large water-cooled production reactor. There are areas, particularly parts of Szechwan, which are suitable for such a reactor and have not been photographed. Since it is doubtful that

[REDACTED]

a reactor of this type could have been finished before the withdrawal of Soviet technicians in 1963, its completion would have depended on a native Chinese effort, a difficult but not impossible task. Such a reactor might have started operations in 1962 or 1963, thus making available sufficient plutonium for a test by the end of this year.

4. On the other hand we have photographed much of the area around virtually all locations where A-E activity is indicated [REDACTED] [REDACTED] about half of all locations that might be geographically suitable for reactor sites. Apart from Pao-t'ou, no operating production reactor or isotope separation plant has been found. We believe it unlikely -- though clearly not impossible -- that such an operating facility exists.

5. It is also possible that the Chinese may have acquired fissionable material from a foreign source. [REDACTED]



[REDACTED]

[REDACTED] As for the Soviets, we do not believe that in the past they have transferred appreciable amounts of weapon-grade material to the Chinese. In the current state of their relations with the Chinese, they would almost certainly not furnish fissionable materials to them.

5. Obviously, it is incongruous to bring a test site to a state of readiness described in paragraph 1 without having a device nearly ready for testing. It would be technically undesirable to install much of the instrumentation more than a few weeks before the actual test. We cannot tell from available photography whether the installations have yet reached this point -- it seems unlikely that they have, mainly because some heavy construction is still going on. However, it is possible that the basic work will soon be completed, and that final preparations could be made this fall.

7. On the other hand, in such a complex undertaking as advanced weapons development -- especially when it is almost certain that there is heavy political pressure for at least some results -- it would not be surprising if there were uneven progress among various phases of the program. In a number of instances in the past, Peiping has been unable to prevent -- and has seemed willing to tolerate -- uneven development in various important programs. Indeed, in other parts of their advanced weapons program we have already observed this. Some facilities seem to be behind schedule -- notably the incomplete gaseous diffusion plant at Lancho; others are

[REDACTED]

larger and more elaborate than present Chinese capabilities warrant -- for example, the possible nuclear weapons complex near Koko Nor.

8. As for the test site itself, Lop Nor is extremely remote, with poor transportation and communication facilities, and we might expect to see the Chinese taking a long leadtime in preparing this installation. They have relatively few men with the necessary scientific competence and and they cannot be fully confident that unexpected difficulties will not appear. We believe the Chinese would do everything in their power to prevent a last minute hitch on the testing facility from delaying, even briefly, China's advent as a nuclear "power."

9. The evidence and argument reviewed above do not permit a very confident estimate of the chances of a Chinese Communist nuclear detonation in the next few months. Clearly the possibility of such a detonation before the end of this year cannot be ruled out -- the test may occur during this period. On balance, however, we believe that it will not occur until sometime after the end of 1964.\*

[REDACTED]