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# NATIONAL SCIENTIFIC INTELLIGENCE ESTIMATE

## SUMMARY OF THE STATUS OF THE SOVIET ATOMIC ENERGY PROGRAM

APPROVED FOR RELEASE  
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8 January 1953

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
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The following member organizations of the Intelligence Advisory Committee participated with the Central Intelligence Agency in the preparation of this estimate: the intelligence organizations of the Departments of State, the Army, the Navy, the Air Force, and the Atomic Energy Commission.

All members of the Intelligence Advisory Committee concurred in this estimate on 8 January 1952.

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NATIONAL SCIENTIFIC INTELLIGENCE ESTIMATE

JOINT ATOMIC ENERGY INTELLIGENCE COMMITTEE

SUMMARY OF THE STATUS OF THE  
SOVIET ATOMIC ENERGY PROGRAM

NSIE-1A

8 January 1953

This is a summary of National Scientific Intelligence Estimate, NSIE-1, dated 8 January 1953, prepared and agreed upon by the Joint Atomic Energy Intelligence Committee which is composed of representatives of the Departments of State, Army, Navy, and Air Force, the Atomic Energy Commission, and the Central Intelligence Agency.

A group of expert consultants working with the Joint Atomic Energy Intelligence Committee concurred in the conclusions given in this estimate. The estimate was approved by the Intelligence Advisory Committee as of 8 January 1953.

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SUMMARY OF  
THE STATUS OF THE SOVIET ATOMIC ENERGY PROGRAM

THE PROBLEM

To estimate the status and capabilities of the Soviet Atomic Energy Program on the basis of information available from all sources.

SUMMARY

1. The Soviet Union in the Fall of 1945 began a high priority effort to produce atomic weapons under the supervision of the "First Chief Directorate attached to the Council of Ministers", which was set up for this purpose.
2. The contribution of espionage activities to the Soviet Program was substantial, but an even greater contribution has come from the research and development carried on by the Soviets.
3. Initial Soviet efforts were directed toward the production of plutonium, culminating in the test explosion of a plutonium bomb in August 1949.
4. By mid-1952, the Soviets had established a substantial plutonium production capacity. Although a number of sites have been identified, important details such as site layout; the type, size and number of reactors in operation; and whether graphite, heavy water or other moderator materials were in use at a particular time remain undetermined. The difficulties attendant upon such identification and determination will continue to increase. A substantial capacity (50 - 60 tons per year) does exist for the production of heavy water. The Soviets have a large synthetic graphite industry and probably have the capability to produce reactor-grade graphite.
5. The Soviets have achieved the production of weapon-grade uranium-235, as evidenced by the explosion of a weapon containing it in October 1951. However, the absence of sufficient evidence on which to base conclusions on installed or planned isotope separation capacity results, at the present time, in one of the most important gaps in intelligence on the Soviet Atomic Energy Program.
6. The development of new sites indicates that the Soviet Atomic Energy Program is continuing to expand. A major increase in plutonium production has probably become effective during the latter part of 1952.

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7. Uranium reserves within the USSR appear to be sufficient to support a large program, but the rate of exploitation will depend on the balance between atomic energy and other Soviet activities. The present rate of exploitation within the USSR and its Satellites will support the program outlined for the period of this estimate. To mid-1952, the Satellites -- principally East Germany -- have furnished about 60% of the uranium available to the Soviets. ✓

8. The main emphasis of Soviet atomic energy research will continue to be on military applications -- primarily weapons.

9. It is believed that the Soviets have not conducted thermo-nuclear tests, and consequently are not stockpiling this type of weapon. Research which may be relevant has been noted but there is no evidence of development activity at the present time. There is no direct evidence on which to base an estimate of the lead the US may have in this field, nevertheless, there is a growing Soviet capability for quantity production of thermonuclear materials, and therefore more advanced research and development, and even field testing by mid-1954, is possible. ✓

10. The Soviets have by mid-1952 reached a point in weapon technology when the specific models of fission weapons stockpiled can be dictated by military requirements rather than technological limitations. Weapons yielding 200 to 500 kilotons are probably within their capability. ✓

11. For the purpose of calculating the Soviet stockpiles, reasonable weapon types yielding 30 - 100 KT are assumed. The cumulative Soviet stockpile of atomic weapons is accordingly estimated to be as follows:

<u>DATE</u>	<u>NUMBER OF BOMBS</u> <u>(30 - 100 KT)</u>
Mid-1952	60
Mid-1953	120 ✓
Mid-1954	200
Mid-1955	300 ✓

12. The Soviet weapon stockpile for mid-1952 may be as low as one-third less or as high as one-third more than the figure stated. In view of the uncertainty in the production of fissionable materials, particularly uranium-235, the stockpile for the future dates may be as low as one-third less than or as high as twice the figure given. ✓

13. In the event the Soviets choose to stockpile weapons of smaller or larger yield, their stockpile would be altered accordingly.

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