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Declassification of Implosion

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973

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1. I note that the conference in your office today records a minority in favor of declassifying implosion. To me this includes equations of state of materials at several times normal density, HE properties, and the detonator and X unit problems.

2. To those who joined the project after November, 1943, or to old timers who were not directly concerned in the discussions and decisions of the May-October 1943 "Neddermeyer" period, it may seem that implosion is such an obvious method of assembly that it would naturally occur to any group of intelligent individuals faced with the problem of designing a bomb. This might be the case, but it certainly was not so at Los Alamos during the May-October 1943 period. It would be impossible to settle now, but I would be willing to bet that except for the stubborn refusal of Neddermeyer to give up working on implosion, and the brilliant thinking and arguments of von Neumann, implosion would have been put on the shelf here by Christmas of 1943 (perhaps to be taken off later when "240" appeared). It is, of course, impossible to establish the probability of an uninformed group discovering the principle of implosion and following up this method in spite of the discouragements which we encountered. My point is that the Christy implosion gadget is novel in several vital ways. It was successfully developed here only by a combination of really brilliant people, good luck at every turn, and the realization during a crisis (June, 1944) that implosion was the only feasible way to assemble plutonium.

3. I rate the chances as very good that if we collectively kept our mouths shut about bulbous bombs, shaped charges, high explosive assembly, lenses, equations of state of materials at several times normal density, and implosion itself; and perhaps released a little more than Smyth said about the gun, a competitor seeking to assemble U-235 would not ever arrive at implosion assembly. If he ran into our difficulty in the case of plutonium, my guess is that he would be sufficiently stumped to lose a great deal of time while investigating the problem and attempting to obtain our solution by espionage or an international horse trade.

4. American physics will for many years include many able, imaginative people who know what densities can be achieved by the implosion process. If physics can be advanced by the use of implosion to achieve these densities for a few fleeting microseconds, we might trust that this possibility will be realized, and the experiment and the implosion theory perhaps declassified at that time.

5. My present feeling is that implosion is an art and a science naturally focused on the production of an atomic bomb, of no obvious use for any other purpose, and that it should be classified on this basis.

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FINAL DETERMINATION
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L. M. Redmen
FEB 4, 1981

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