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PLAN FOR SETTING UP A SEPARATE THERMONUCLEAR DIVISION

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The Los Alamos Scientific Laboratory has as one of its primary responsibilities the development of fission weapons. Thermonuclear work has so far been dispersed in several divisions which have heavy commitments elsewhere. This situation is bound to produce conflicts of interests and retardation of the thermonuclear program. It is my opinion that this work will be seriously impaired unless the responsibilities for it are clearly defined and a new division is established whose effort is entirely concentrated on this subject.

This seems to me to be of particular importance in view of the necessity for a sound test program. I believe that the thermonuclear work requires the closest interaction between theoretical work, test experiments and technological developments and that concentration on theoretical work alone would not lead to a rapid and practical development. It is this aspect of the thermonuclear work in which the location at Los Alamos has its greatest advantage and it should be made use of. However, this can be done effectively only if it is carried out by people who give their undivided attention to the thermonuclear program, and if the planning and execution of this work and the responsibility for it is in the hands of a unified organization.

Among the tests which seem to be of importance at the present time are those concerned with boosted weapons. Another is connected with the possibility of a heterocatalytic explosion, that is, implosion of a bomb using the energy liberated from another, auxiliary bomb. A third concerns itself with tests on mixing during atomic explosions, which question is of particular importance in connection with the Alarm Clock.


In setting up a separate thermonuclear division it is evident that the danger of duplication of effort arises. In some cases this is unavoidable; in other cases such duplication is unnecessary. In general, it would be planned to take advantage of any facilities already in existence in the Laboratory under its present divisional set-up, wherever that seems both possible and logical. Priorities on thermonuclear work carried out in divisions other than the thermonuclear division would be placed directly under the jurisdiction of the Director's Office. Such jurisdiction might be aided by a committee such as the Family Committee. As a concrete proposal, the division of responsibilities between the thermonuclear division and the other divisions of the Laboratory might be as follows:

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The thermonuclear division would of necessity take over some of the functions of T Division. However, only two or three of its people who have been occupied almost exclusively with thermonuclear problems would be essential in the formation of the new division. It would seem highly desirable that some others join also insofar as it is possible without detriment to the fission program, and it should be taken for granted that there will be at all times the closest possible cooperation between the two divisions. Additional theoretical staff recruited from the outside will of course be required.

Cryogenic work is of importance only for the thermonuclear program, and it would seem logical to carry it out in the new division, thus leaving CMR free to concentrate on its specific functions. It is not recommended that the thermonuclear division take over from CMR any personnel except the men in the cryogenics group. It is, however, recommended that the recruiting of the thermonuclear division should include some chemists and metallurgists to take over some of those jobs which had been assigned to CMR Division in the past. Work of these men will require laboratory space.


The thermonuclear division should be in a position to design in detail objects to be tested, to place orders in the machine shop and outside the Laboratory, and to make preliminary and partial assemblies of test objects as well as final assemblies. This implies reproducing some of the facilities of W Division and the establishment of a new site. The help of W Division will continue to be needed in some specific ways such as the services of Pajarito site and the preparation of complete atomic bombs which are replicas of objects which had been prepared previously for other purposes. On occasion definite work in W Division will have to be assigned to this program.

No attempt will be made to reproduce any of the work now going on in GMX. Close liaison between the thermonuclear division and GMX will be imperative.

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No duplication of J Division effort is contemplated. Operations such as have been carried out at Tonopah show that this division possesses enough flexibility to carry out any well conceived test program.

No personnel from P Division should join the thermonuclear division and none of the usual long-term activities of P Division should be duplicated. We should continue to rely on P Division for as many of the relevant measurements as possible. If added measurements are needed, the thermonuclear division should have the responsibility and should take the initiative in getting such measurements performed outside the Laboratory by sub-contract. Fortunately, all, or at least most, of the relevant measurements can be carried out in an unclassified manner. Physics measurements on thermonuclear tests may be initiated, planned, and possibly even carried out by personnel of the thermonuclear division. Such activities would be analogous to those that are now carried out by P Division personnel on J Division problems.



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As a beginning, the new division might have approximately 100 members with scientists slightly in the majority, the rest being made up of draftsmen, computers and other technical assistants.

It seems to me undesirable to announce formally the formation of a thermonuclear division prior to the tests at Eniwetok. It is, however, most necessary to go ahead with recruiting immediately because by June promising fresh Ph.D.'s will have their jobs and older people will have made up their minds concerning their contributions to the preparedness effort. In fact, several large new projects are vigorously recruiting at the present time. It seems to be imperative therefore that a decision on the setting up of a thermonuclear division be made now and that authority be given to proceed with recruiting and other preliminaries.

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