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(March 19, 1947)

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UNITED STATES
ATOMIC ENERGY COMMISSION

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MEETING HELD JUNE 27, 1950 ON SITE SELECTION CRITERIA

Present: UCRL: Alvarez, Brobeck, Latimer, Longacre, Street, Van Atta*

CRDC: Cope, Hildebrand, Kent, Powell

AEC: Ball, Dean, English, Fidler, Thomas

*Consultant

Reynolds said that if we are to proceed with the Mark II program on what has been termed the intermediate priority it will be necessary for a site to have been selected by January of 1951. Thomas said that Washington would develop strategic considerations for site selection as rapidly as possible and would like to receive from us by August 15 a report showing in some detail the time schedule for Mark II for three different priority levels, the first being that of a "crash" program, the second being one of moderate priority, and the third being one of considerable caution. This presentation should also contain a discussion of the delays that would be introduced into the program by the selection of a site remote from Berkeley. Thomas said that if Mark II were to be run at continuous operation (100% duty cycle) the power and water requirements might be very difficult to meet at Livermore, since the power requirements would be approximately 500 megawatts and to provide for necessary cooling water a 12-mile pipeline would have to be run in to the site. He said the study should include evaluation of health and safety factors. Although the Mark II will not involve a critical assembly, it will involve the production within the target of very high specific activities, and there is the possibility of a failure of the heat transfer bond on some elements of the target which would discharge a great deal of radioactive material into the vacuum system and into the cooling water stream. Alvarez strongly suggested that we avoid introducing any undue complications from the standpoint of health and safety requirements, since problems of this nature are the least serious of any major problems concerning the accelerator. Commissioner Dean suggested that the approach to take would be to outline first a list of those criteria which might make Livermore unsuitable for Mark II. Powell said that the health and safety aspects do not depend upon the site selected since no matter where the instrument is to be built it will of necessity have to be made as safe as possible. He added that because of the large power requirement for Mark II the location of the accelerator at any site will require the construction of a steam power plant since there is no location in the west where a load of 500 megawatts can be tolerated without the construction of additional generating capacity. He said that fuel oil costs on the west coast are at or below the figures for the rest of the nation. He said that as respects the water requirement for the accelerator we have a severe problem. He suggested the possibility of using Boulder Dam, Antioch, or Suisun Bay as a location because of the availability at these sites of large quantities of river or bay water for cooling. He added there is also an important consideration to be given to the problem of waste disposal which would be simplified by locating the accelerator near the coast so that sea disposal can be made of chemical and radioactive wastes. English said if the volume of chemical wastes presents a problem they can be concentrated by a large factor, using presently available techniques. He added that if Mark II is ultimately

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to be used for the production of materials other than tritium there will indeed be a very severe waste disposal problem.] Latimer suggested that in this latter eventuality it would be possible to locate plants in remote regions of the hills near the Livermore site. Commissioner Dean pointed out that the Commission realizes that the requirements for safeguards of such a project can, if not carefully scrutinized, be taken to extremes.

Thomas said that discussions had been begun with the military concerning strategic considerations. Reynolds pointed out that, if vulnerability of the water supply were of concern from a strategic standpoint, alternate pipelines could be run from Shoemaker, Hetch Hetchy, and from the Mendota canal at Tracy.

Powell suggested that Cal Development Company undertake responsibility for assembling the site selection criteria. He pointed out that their parent company has a group well qualified to undertake an analysis of the economic considerations. Reynolds and Fidler indicated their tentative agreement with the suggestion.

Latimer pointed out that an important item in evaluating site selection criteria is that of the efficiency of the scientific team at the Radiation Laboratory which must undertake its development and that this efficiency would be severely hampered by selecting a site away from the immediate area of the laboratory.

Russell H. Ball

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