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AEC 125/3

COPY NO. 15

April 14, 1949

ATOMIC ENERGY COMMISSION

PROVISION OF FACILITIES AT ENIWETOK  
PROVING GROUND

Note by the Secretary

The attached report by the Director of Military Application is circulated by request of the Acting General Manager for Commission consideration at an early meeting.

ROY B. SNAPP

Secretary

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FOLDER 682 Eniwetok Atoll (12-1-47)

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ATOMIC ENERGY COMMISSION

PROVISION OF FACILITIES AT ENIWETOK  
PROVING GROUNDS

Report by the Director of Military Application

THE PROBLEM

1. To present for Commission consideration plans for the provision of facilities at the Eniwetok Proving Grounds.

BACKGROUND

2. Early in 1951 is the tentative target date for the full scale test of three new weapons now in the research and development phases at Los Alamos. Plans for the 1951 test envision a three shot program at Eniwetok, using the same three shot islands as used during Operation SANDSTONE, 300 foot towers in lieu of 200 foot towers previously employed, a military task force participating and a military service test program integrated on a non-interference basis with the Laboratory's instrumentation program.

*Partly submitted to the Commission*

3. Preliminary planning of facilities at Eniwetok has been underway since early last fall. The firm of Holmes and Narver, Los Angeles, operating initially under a letter contract from the Manager, Santa Fe Operations, is providing architect, engineer, construction, and management services for this program. This work by Holmes and Narver is being done on a cost-plus-fixed-fee basis.

4. As a result of a field survey of Eniwetok by representatives of Holmes and Narver and the Los Alamos Laboratory, a complete engineering report has been prepared and an initial

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preparatory program undertaken at Eniwetok.\* This program is designed to prevent deterioration of usable facilities, to clean up operating areas, to survey the atoll and to fill the blast craters.

5. In order to plan subsequent phases, to complete contract negotiations and to proceed with engineering, procurement, and construction, taking advantage of the time available to realize maximum economies, an early decision is required as to whether facilities should be provided to last for the 1951 series only or for both the 1951 tests and one subsequent series of tests several years later.

#### DISCUSSION

6. The following estimates have been prepared by Los Alamos Laboratory in conjunction with Holmes and Narver.

- |                                                                                                                             |              |
|-----------------------------------------------------------------------------------------------------------------------------|--------------|
| a. Provision of facilities for one test only                                                                                | \$12,000,000 |
| b. Provision of facilities to last for two tests, including maintenance between tests and preparation for the second series | \$16,000,000 |
| c. Cost of facilities for two series of un-coordinated tests                                                                | \$21,000,000 |

7. The estimates are necessarily preliminary in nature, but are believed to give a reasonably reliable indication of the difference in order of magnitude of expense between a, b, and c.

8. The Los Alamos Laboratory, the Santa Fe Operations Office and the Division of Military Application consider that facilities should be provided assuming two series of tests. Although it seems reasonable that tests will be required as long as we engage in weapon research and development, the nature of tests beyond

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\*Report on file in the Division of Military Application.

[REDACTED]

the next six years is so unpredictable that it may not be wise to provide permanent facilities at Eniwetok. It does, however, appear reasonable that one other series of tests two or three years after 1951 will be required and that Eniwetok will be the logical site.

9. In addition to a saving of the order of \$5,000,000, other benefits will result. Planning for two tests will permit construction of more adequate housing which will result in higher morale, less turnover in labor forces and increased efficiency.

10. Any program at Eniwetok will require construction of an appreciable number of facilities. Except for a few facilities in use by the small military garrison and some warehousing, the majority of the housing and administration buildings used during Operation SANDSTONE are not usable. These buildings, war-built, were already in an advanced state of disintegration last year. The existing submarine cable net, blast and gamma shelters and two photo towers will be usable with maintenance and some alteration.

11. Detailed planning is based on certain operational lessons learned during SANDSTONE. A larger portion of the technical group will be shore-based, communications and transportation facilities within the atoll will be increased over those provided during SANDSTONE and a more reliable power supply will be provided. Although the initial cost of these improved services may be sizeable, the gains in improved efficiency and reduction in the over-all time of test operations will achieve large economies when the effect of the reduced time on the cost of operating a large task force is considered.

#### STAFF JUDGMENTS

12. The Directors of Production and Research and the Controller concur. The Office of the General Counsel has advised there is no legal objection to the action recommended.

SECRET

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CONCLUSIONS

13. It is concluded that in the interest of economy and efficiency, provision of facilities at Eniwetok should be based on the assumption there will be at least one other series of tests at Eniwetok subsequent to the 1951 planned series.

RECOMMENDATION

14. That the Atomic Energy Commission:

a. Authorize the provision of facilities at Eniwetok based on the assumption that there will be a series of tests at Eniwetok subsequent to the planned 1951 series.

b. Note that the Division of Military Application will notify the Military Liaison Committee of a above.

c. Note that the plans for developing Eniwetok will be described in the quarterly progress report to the Joint Committee on Atomic Energy.

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AEC 9/14

March 29, 1949

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ATOMIC ENERGY COMMISSION

RESUME OF RADIOLOGICAL SURVEY OF ENIWETOK ATOLL

Note by the Secretary

1. The attached memorandum by the Director of Military Application concerning the radiological safety of Eniwetok Atoll is circulated for the information of the Commission.

2. At Meeting 251 on March 9, the Commission was given a preliminary oral report on the results of the radiological survey.

ROY B. SNAPP

Secretary

REPOSITORY NARA/College Park  
COLLECTION R6 326 46-51 Secretary  
BOX No. 90 (NNS-326-93-007)  
FOLDER 682 Eniwetok Atoll (12-1-47)

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REVIEWED BY Carl Wilson DATE 3/22/84

H.R. Schmidt 7/1/85

By: W. Tensch 4/14/86

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ATOMIC ENERGY COMMISSION

RESUME OF RADIOLOGICAL SURVEY OF ENIWETOK ATOLL

Memorandum by Director of Military Application

1. A survey party, consisting of Colonel James P. Cooney, Dr. Karl Z. Morgan, Dr. Carl C. Gamertsfelder and Dr. Harry W. Whipple, visited the Atomic Energy Commission Proving Ground, Eniwetok Atoll, during the period of February 14 through February 21, 1949, for the purpose of conducting a radiological survey of the islands which were used for the 1948 bomb tests.

2. Radiological surveys were made on Runit, Aomon, Biijiri, Rojoa and Engebi Islands.

3. The results of this survey are summarized as follows:

a. The external radiological hazard on all test islands is minimal and can be easily handled.

b. Practically all of the iron scattered about the islands is radioactive due to neutron capture and/or contamination with fission products. This iron will be collected and dumped on the reef on the oceanside of the Atoll.

c. At present, the soil on all of the islands is well stabilized and, therefore, the internal radiation hazard is minimal. However, when the top crust of the soil is disturbed, there is a definite internal hazard due to dust formation. If a detonation from a tower such as occurred at Eniwetok occurred in an area such as New York City the residual radiation hazard would not present a similar problem due to the fact that the ball of fire would probably come in contact with concrete rather than unprotected soil. Therefore, considerably less fission products would be trapped. However, if this were a direct ground burst, it would completely destroy the concrete by blast and then the problem would be similar. We are attempting to make this island absolutely safe for workers. We plan that it will be as safe for them to work there as it would in any atomic energy plant. If necessary a company of troops could camp on Eniwetok now and be subjected to a very negligible radiation hazard. However, it would be unwise to have children living in such an area and playing in the dust. The radioactive iron is a hazard only if handled with bare hands for a long period of time. It is being moved not primarily with the idea of the hazard it presents to people working in this area, but it would interfere with technical measurements which must be made during the future test.

[REDACTED]

[REDACTED]

4. The solution to this problem may be resolved by:

a. Removing the top soil, roughly 500 yards from the crater, and placing it into the crater area and then stabilizing this material with uncontaminated soil. If this operation must be performed, it will be necessary for the personnel to wear respirators while working. Wearing such equipment in the tropics is extremely undesirable, and the efficiency of the operating group will be very low. Wetting down the soil for this type of operation was attempted and proved unsatisfactory.

b. The ideal solution, if it can be accomplished, would be to stabilize the soil by covering it over with coral carried in from the lagoon. Sufficient coral to stabilize the soil is all that is necessary. It should require only from six to nine inches of well-packed coral to accomplish this mission. The roads must also be stabilized, as well as the camp site for the workers on Engebi. The Holmes and Narver Construction Company, in conjunction with the Los Alamos Scientific Laboratory, at present is making a study of the feasibility of accomplishing this solution.

5. Stabilization of the soil at Rojoa, where a construction camp will be located, will not be required. A monitor from the Los Alamos Scientific Laboratory is now in Eniwetok to supervise the radiological hazards. The monitor will be present at all times during the construction phases of this project.

6. The construction workers were given appropriate instructions to govern their operations on the islands.