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Headquarters
JOINT TASK FORCE THREE
Washington 25, D. C.

18 June 1951

SUBJECT: Officially Cleared Information on Operation GREENHOUSE

TO: Commander
Task Group 3.3
c/o CINCPAC
Fleet Post Office
San Francisco, California

It is highly essential to the security of the nation that the overall activities and the results of the operations of Joint Task Force THREE be preserved within their respective security classifications. By virtue of newspaper speculation which has resulted from the few facts given out by official Atomic Energy Commission - Department of Defense release, there may be misconceptions on the part of Joint Task Force THREE personnel as to what operational facts are actually declassified, and what may be openly discussed. It is imperative that all personnel of Joint Task Force THREE be apprised of the actual facts made public and warned that their discussions must be confined within the bounds of this information. The official releases are hereby forwarded for purposes of guidance and dissemination.

/s/ E. R. Quesada
/t/ E. R. QUESADA
Lieutenant General, United States Air Force
Commander

5 Incls:
1. Statement by LtGen Quesada
2. Statement by Dr. Graves
3. Statement by BrigGen Cooney
4. Statement by Gordon Dean
5. Statement by the Honorable Robert LeBaron

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FUTURE RELEASE COPY PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
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HOLD FOR RELEASE
UNTIL 7 PM (EDT)
WEDNESDAY, JUNE 13, 1951

STATEMENT BY
LIEUTENANT GENERAL E. R. QUESADA
COMMANDER OF JOINT TASK FORCE THREE

News Conference, Pentagon, Wednesday, June 13, 1951.

Information on atomic weapons tests which can be publicly released falls into two categories. The first is the non-technical information of a general nature dealing largely with the organization and administration of the test program. The second category of publicly releasable information is the technical information on the effects of the weapons.

As most of you know, there is very little which can be released in connection with the functioning of the weapons or the military and scientific results of the tests. If you have some questions later in this press conference, I should warn you now that we cannot go beyond the prepared statements in answering questions about the scientific or military aspects of the tests. We can discuss the effects in very general terms and we can talk about the supporting work of the Task Force.

Today, I can give you some information in the first category dealing with the overall work of Joint Task Force THREE. Dr. Graves will give you some information on the scientific phases of the 1951 test program at Eniwetok. Information in the second category, that is, the data useful for civil defense purposes, will be made available to the Federal Civil Defense Administration as fast as the mass of data can be collated and analyzed and then given security review. It may be months before some of this information can be put into shape useful for civil defense purposes.

The latest series of weapons tests at the AEC's Eniwetok Proving Ground was successful in every respect. The program was carried out by Joint Task Force Three and it was a truly joint operation in which the resources of the Department of Defense and the commission were completely integrated.

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ENCLOSURE (1)

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The objectives of the operation, to which the code word GREENHOUSE had been assigned, were to test new and improved weapon designs, to conduct experiments contributing to research on thermonuclear weapons, to expand our knowledge of the fundamentals of atomic blasts and to study the direct effects of atomic weapons.

To meet these objectives the following experimental programs were conducted:

Weapon performance and phenomonology
Biomedical research
Blast effects on structures
Atomic cloud physics
Radiac instrument evaluation
Physical tests and measurements
Blast effects on aircraft

The weapon performance program measured the efficiency and yield of each detonation. Within the first few microseconds (one millionth of a second), the nuclear reactions were examined in detail. The phenomena associated with atomic explosions -- blast, heat and ionizing radiation -- were also studied in detail. The objectives of this complex program were to prove new atomic bomb designs, to contribute to research on thermonuclear weapons and to develop a fuller basic knowledge of the effects of the very great energies released in a detonation. This basic knowledge is essential to a better understanding of specific effects such as were investigated by the other programs.

The biomedical program studied the effects of nuclear detonations on skin tissues, glands and circulatory systems. Mice, dogs and pigs were used in these experiments. All were bred and raised at Eniwetok in order that they might be acclimated to the environment, thus making possible essential controlled studies, some of which are complete, others are continuing. The mouse is useful since there is a wealth of laboratory background material on mice. Swine were used because their skin resembles that of man. The dog was used because its circulatory system resembles that of man. The objective of the biomedical program was primarily to provide a background for the development of treatments of atomic bomb casualties. Laboratory studies of the glands and tissues of exposed animals are continuing in the United States and thousands of exposed mice have been returned. The work is being carried on at Los Alamos, Oak Ridge, University of Rochester, Department of Agriculture, Armed Forces Institute of Pathology, Naval Medical Research Institute, University of California and California Institute of Technology.

The structures program included the testing of designs and types of construction, using various engineering principles and materials. The reactions of underground and surface shelters, industrial plants and dwellings were recorded. The objectives

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of this program were to establish a method of predicting blast damage and to gain information useful in developing designs to minimize blast damage to military and industrial facilities. Some nine hundred (900) measurements were made on twenty-seven (27) various structures. Tests of a variety of glass and window construction were conducted for the Civil Defense Administration. Although most of the structures program was developed and conducted by the three Armed Services, the information gained will be of significant value to civil defense and will be made available to the Civil Defense Administration as soon as it is assembled and analyzed.

The cloud physics program investigated the growth and rise of the atomic cloud and plotted the associated radiation fields. The objective of this program was a better understanding of the radiation of the cloud and its meteorological structure.

The radiac evaluation program field-tested various models of badges and dosimeters. The program also included experimentation in the field of new radiation detection devices. Various types of meters and recording devices were exposed. This program will contribute to the design of simple, reliable radiation detection instruments required by many agencies and activities.

The physical tests and measurements program included the exposure of Sherman tanks, protective clothing, the study of contamination and decontamination problems, the study of fall-out patterns and particle size of fission fragments and the development of filter materials to screen radioactive particles. The broad objectives of this program were to test military equipment and to better understand the nature of the problems posed by atomic detonations.

Drone T-33s (modified F-80s "Shooting Stars"), drone B-17s (Flying Fortresses), manned B-50 (Superfortresses) and a manned B-47 (6 engine Stratojet) were exposed to varying degrees of blast and heat. These aircraft were all carefully instrumented to record stresses and pressures. Manned aircraft remained at safe distance, while drone aircraft were vectored close to zero. Information gained from these airplanes was supplemented by exposure on the ground of instrumented aircraft components, wings, model airfoils and fuselages. The purpose of this program was to collect data useful in developing tactics of operations in the close vicinity of atomic blast as well as to assist in establishing design criteria for new combat aircraft.

To conduct these programs, and to provide support services and security, the Task Force was organized into four(4) functional Task Groups.

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Task Group 3.1, commanded by Dr. Alvin C. Graves of Los Alamos Scientific Laboratory, with Mr. Stanley W. Burriss as Chief ofStaff, was assigned the mission of conducting all experimental programs. This task group, at its peak strength, numbered 2,580 personnel.

Weapon performance measurements and fundamental effects studies were under the direction of Dr. Frederick Reines, Los Alamos Scientific Laboratory. Major contributions were made by a group from the Naval Ordnance Laboratory, under Dr. Gregory K. Hartman, augmented by a group under Dr. Curtiss W. Lampson from the Aberdeen Ballistics Research Laboratory; two groups from the Naval Research Laboratory, one under Dr. Wayne C. Hall, the other under Dr. Ernest Krause; a group from the University of California's Radiation Laboratory, under Dr. Herbert F. York, Jr., assisted by Dr. Hugh Bradner; a group from the National Bureau of Standards, under Dr. Lauriston Taylor and by the firm of Edgerton, Germeshausen and Grier, Inc., of Boston. Selected military officers and enlisted technicians gained valuable experience by assisting these groups.

The biomedical program was under the direction of Dr. George V. LeRoy of the Northwestern University Medical School.

The structures program was under the supervision of Mr. Sherwood B. Smith of the Armed Forces Special Weapons Project. Personnel of the three Services and of the Sandia Corporation, Albuquerque, New Mexico, instrumented the buildings and recorded the data.

The cloud physics program was under the direction of Dr. Peter H. Wyckoff of the Air Forces' Cambridge Research Laboratory.

The radiac evaluation program and physical tests and measurements program were under the direction of Commander Victor Delano, U.S. Navy, Personnel from various Service Laboratories joined in these programs.

The study of blast effects on aircraft was under the direction of Colonel Robert E. Jarmon, U.S. Air Force. Instrumenation was designed and installed by personnel of the Air Materiel Command.

Dr. Graves' task group also included a contractor force of the firm of Holmes and Narver, Los Angeles, which was responsible for engineering all facilites of the proving ground and the accomplishment of the major portion of essential construction.

Task Group 3.2, commanded by Brigadier General Arthur R. Walk, USA, with Colonel Samuel N. Lowry, USA, as Chief of Staff, had two distinct missions. During the build-up phase of the operation, this task group, consisting then of Corps of Engineer troops and supporting services, augmented civilian contractor forces by constructing Army and Air Force base facilities on the largest island of Eniwetok Atoll.

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During the operational phase, this task group numbered 1,400 personnel. Its principal tasks were to provide military security on the islands of the atoll and logistic support to Air Force units.

Task Group 3.3, commanded by Rear Admiral Richard H. Cruzen, USN, with Captain Harry R. Horney, USN, as Chief of Staff, had the mission of providing off-shore air patrols and surface defense. This task group also provided transportation for personnel and cargo within the atoll, harbor defense and floating fuel storage. This task group consisted of 2,370 Navy personnel.

Task Group 3.4, commanded by Major General Robert M. Lee, USAF, with Colonel William T. Hefley, USAF, as Chief of Staff, had as its mission the operation of experimental aircraft, which included the drones and aircraft for blast measurements mentioned earlier, as well as the B-17 filter collecting drones essential to the overall experimental program. Task Group 3.4 also provided weather observation and reconnaissance, search and rescue, liaison taxi service within the atoll and F-80 jet interceptors for air defense. Due to the complex nature of operating aircraft on split second timing in relation to the detonation, latest developments in radar were used for exacting air control. The peak strength of this task group was 2,400 personnel.

The personnel of Joint Task Force THREE, numbering just under 9,000 were drawn from the AEC, its contractors, military, industrial and educational laboratories and from the three Services.

Joint Task Force THREE was supported fully, despite the drains of the Korean War, by the Military Sea Transport Service and by the Service Force of the Pacific Fleet, who moved 250,000 measurement tons of cargo over the 4,500 miles between the west coast and Eniwetok. The Military Air Transport Service airlifted the passengers essential to our schedule and 3,500 tons of high priority cargo.

Needless to say, this has been a most interesting and enlightening experience. Even though it will take months before all the data is analyzed, we in the Task Force have arrived at certain conclusions which in our opinion are significant.

First. It has again been clearly demonstrated that the cooperation between scientific and military personnel, so essential in modern war, is effective. Success of this operation can be credited largely to the outstanding performance, enthusiasm, energy and adaptability of our civilian scientists and technicians. On the other hand, members of our military services demonstrated their adaptability to a complex scientific-military operation.

Second. The complete success of Operation GREENHOUSE proves that progress in weapons design and research has been made by Los

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Alamos. The detailed analysis and application of experimental data will make further progress possible.

Third. The extensive basic and applied studies of the effects of atomic weapons will be of significant assistance in planning effective civil defense and in developing military tactics, techniques and equipment.

Fourth. We have again operated in and around radioactivity. Our operations have indicated to us clearly that the mysterious ghost of lingering radiation should be dispelled. The immediate radiation, blast and heat kill and destroy. Fear of lingering residual radioactivity must not confuse or delay prompt disaster operations in the event we are attacked.

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