#### **United States Government**

#### Department of Energy

### memorandum

DATE: November 15, 1984

REPLY TO PE-241

ATTN OF:

SUBJECT: Declassification of Documents Requested by Representative Ottinger

TO: J. E. Lytle, Director
Office of Classification

Representative Richard L. Ottinger, Chairman of the Sub-Committee on Energy Conservation and Power, has requested a number of AEC archival documents dealing with radiation exposures during the 1945-1962 period (attached). Many of these are classified. I have delivered the file folders containing the classified documents to Mr. Cucchiara along with the completed form DOE F 5635.3.

Please declassify those that meet your criteria so that I may send them to Mr. Ottinger. Identify those which must remain classified and I will transmit them separately according to accepted procedures.

Donald M. Ross, Director

Occupational Safety & Health Division

Office of Operational Safety

Attachment

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GAMMA RAY AND BETA SPECTRA
AT SELECTED TIMES AFTER FAST FISSION
OF U238 AND U235 AND
THERMAL FISSION OF U235

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PREPARED BY

S. P. FINN
G. L. SIMMONS
L. V. SPENCER

PREPARED FOR

NATIONAL BUREAU OF STANDARDS PURCHASE ORDER 808946 While 200

FEBRUARY 23, 1979

100857

### DRAFT

Subject: Nuclear Test Personnel Review (NTPR)

Jan 3/1/83

#### Background of NTPR Program.

Between 1945 and 1962 the Atomic Energy Commission (AEC) carried out some 235 atmospheric nuclear tests, principally in Nevada and the Pacific Ocean. An estimated 220,000 Department of Defense (DoD) personnel, military and civilian, were involved in this testing and many received low-level ionizing radiation exposures in the performance of various activities. Because the exposures generally were well within established radiation exposure limits, there was no reason to expect any increased health risk.

The first indication that former test participants might be experiencing adverse health effects possibly related to radiation exposure at the tests occurred in 1977. The Center for Disease Control (CDC), as a result of its investigation of a leukemia case involving an individual who had participated in Shot SMOKY at the Nevada Test Site in 1957, became interested in the health status of all personnel who had been present at that shot. By late 1977, a DoD ad hoc committee, working together with CDC, had reconstructed a list of approximately 3200 DoD personnel present on the day of the SMOKY test and determined that some eight leukemia cases had occurred among the group. CDC calculations indicated the expected incidence of leukemia would be three to four cases. CDC under-

FACT SHEET

15 3/9/80

REDWING was a 17-detonation nuclear weapon test series (see table) held at the Atomic Energy Commission's (AEC) Pacific Proving Ground (PPG) in spring and summer 1956. The PPG consisted principally of Enewetak\* and Bikini atolls in the northwestern Marshall Islands in the Central Pacific Ocean.

#### REDWING test events, 1956a

Assigned´ Name	Location	Date (local time)
LACROSSE CHEROKEE ZUNI YUMA ERIE SEMINOLE FLATHEAD BLACKFOOT KICKAPOO OSAGE INCA DAKOTA MOHAWK APACHE NAVAJO TEWA HURON	Enewetak; surface on Runit Island Bikini; airdrop near Nam Island Bikini; surface on Eneman Island Enewetak; tower on Acmon Island Enewetak; tower on Runit Island Enewetak; surface on Boken Island Bikini; barge of Iroij Island Enewetak; tower on Runit Island Enewetak; tower on Acmon Island Enewetak; tower on Lujor Island Enewetak; tower on Lujor Island Bikini; barge off Iroij Island Enewetak; tower on Eleleron Island Enewetak; tower on Eleleron Island Enewetak; barge off Dridrilbwij Island Bikini; barge off Iroij Island Bikini; barge off Iroij Island Bikini; barge off Dridrilbwij Island Bikini; barge off Dridrilbwij Island	11 July 21 July

#### Note:

aYields not announced except: LACROSSE (40 KT), CHEROKEE ("several MT"), ZUNI (3.5 MT), SEMINOLE (13.7 KT), TEWA (5 MT). One kiloton equals the approximate energy release of the explosion of one thousand tons of TNT; one megaton equals the approximate energy release of the explosion of one million tons of TNT.

<sup>\*</sup> The spelling of Marshall Island place names has changed in recent years in order to more accurately render the sounds of the Marshall Island names using English spelling.

#### FACT SHEET

100E/0/83

IVY was an atmospheric nuclear weapons test series held in the Atomic nergy Commission's (AEC) Pacific Proving Ground at Enewetak Atoll in the Marshall Islands during autumn 1952. The series consisted of the two detonations listed below.

Assigned Name	Local Date	Location	Yielda	
MIKE	1 Nov	Eluklab Island; surface	10.4 MT	
KING	16 Nov	Airburst (1,480 feet [440 meters]) over reef off Runit Island	500 KT	

<sup>&</sup>lt;sup>a</sup>One kiloton equals the approximate energy release of the explosion of one thousand tons of TNT; one megaton equals the approximate energy release of the explosion of one million tons of TNT.

#### HISTORICAL BACKGROUND

President Truman made the decision to pursue the development of thermonuclear weapons in 1950, and the IVY series was a key step in this development. MIKE was an experimental device and produced the first thermonuclear detonation, in which a substantial portion of its energy was generated by the fusion, or joining, of hydrogen atoms. KING was a stockpile weapon, modified to produce a large yield. It was dropped from a B-36 bomber. The energy from KING was generated by the fission, or splitting, of plutonium atoms. These were the largest nuclear explosions to that time.

#### JOINT TASK FORCE 132

Joint Task force 132 (JTF 132) was the organization that conducted the IVY test series. Elements of the four services, the AEC and other Federal government agencies, and civilians from government laboratory organizations and contractors while up this organization. Commander JTF 132 reported to the Joint Chiefs of Staff, but was also designated the AEC's agent in conducting the

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SIGNA Chimacas -

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Project 18.1

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Lt. Warren L. Smith. USNR
T/Sgt. James Yandle. USAF
T/Sgt. Berry Caldwell. USAF
Ralph Richardson

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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

NAVAL RESEARCH LABORATORY

Washington. D.C.

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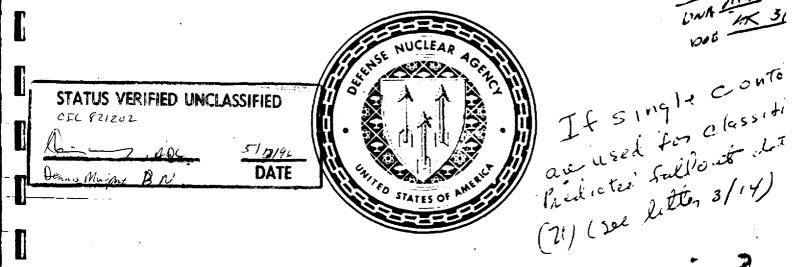
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United States Atmospheric Nuclear Weapons Tests
Nuclear Test Personnel Review



Prepared by the Defense Nuclear Agency as Executive Agency for the Department of Defense

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## HARDTACK

April - October 1958

Project 4.3

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EFFECT of LIGHT from VERY-LOW-YIELD NUCLEAR DETONATIONS on VISION (DAZZLE) of COMBAT PERSONNEL (U)

Issuance Date: April 28, 1960

HEADQUARTERS FIELD COMMAND DEFENSE ATOMIC SUPPORT AGENCY SANDIA BASE, ALBUQUERQUE, NEW MEXICO

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April - October 1958

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Of the DEFENSE ATOMIC SUPPORT AGENCY

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Issuance date: August 24, 1960

HEADOUARTERS FIELD COMMAND
DEFENSE ATOMIC SUPPORT AGENCY
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THE REYNOLDS ELECTRICAL AND ENGINEERING COMPANY
RADIOLOGICAL SAFETY AND TECHNICAL SERVICES DEPARTMENT
RADIOLOGICAL SAFETY DIVISION

NEVADA TEST SITE

WT-1661

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PROOF TEST OF AN/TVS-1 (XE-3) FLASH-RANGING EQUIPMENT

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DEFENSE ATOMIC SUPPORT AGENCY
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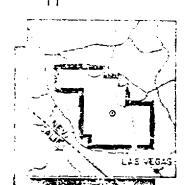
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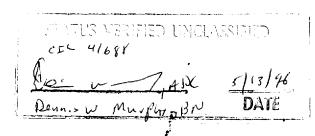
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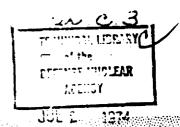




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April - October 1958

Project 26.7

STRUCTURAL RESPONSE AND PERMANENT DISPLACEMENT MEASUREMENTS

Issuance Date: October 28, 1960

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POSTSHOT DISTURBANCES AND SURFACE MOTIONS-

**OPERATION HARDTACK-II** 

By A. Kavadias Date 7-21-76.

Prepared for:

LAWRENCE RADIATION LABORATORY LIVERMORE, CALIFORNIA

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Project 6.15

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Issuance Date: October 28, 1960

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EFFECTS OF VERY-LOW-YIELD BURSTS ON BIOLOGICAL SPECIMENS (SWINE AND MICE) (U)

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Issuance Date: September 15, 1961

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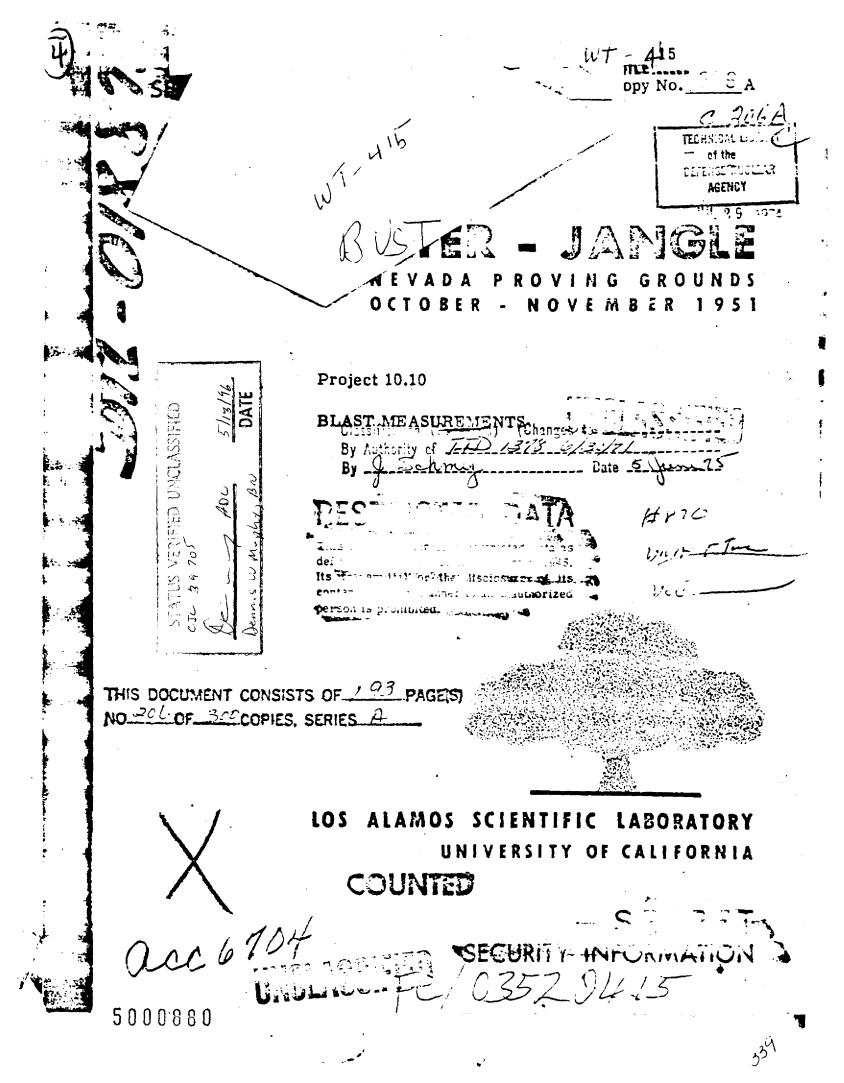
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Director
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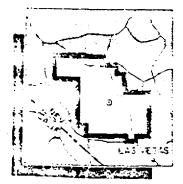
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NEVADA TEST SITE

5 MARCH 1962

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Roland H. Carlson and Wayne A. Roberts

THE BOEING COMPANY

ISSUED 25 JULY 1962

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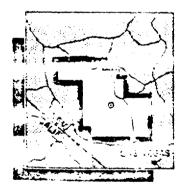
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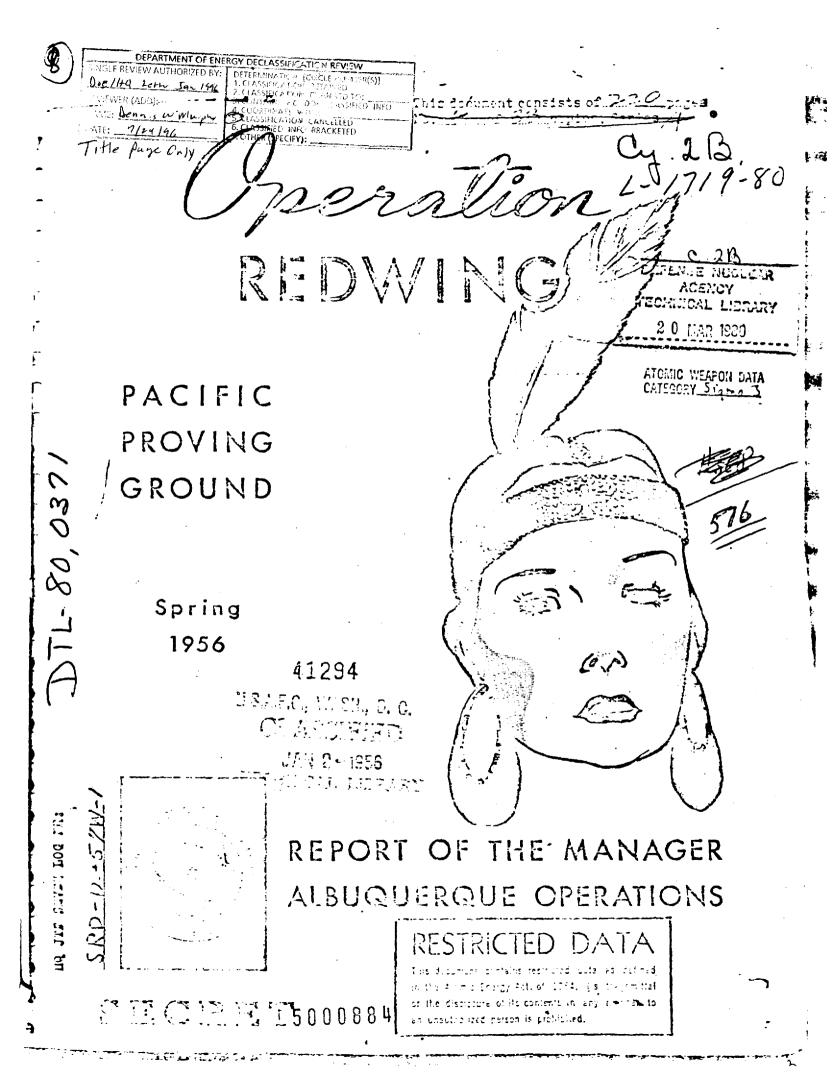
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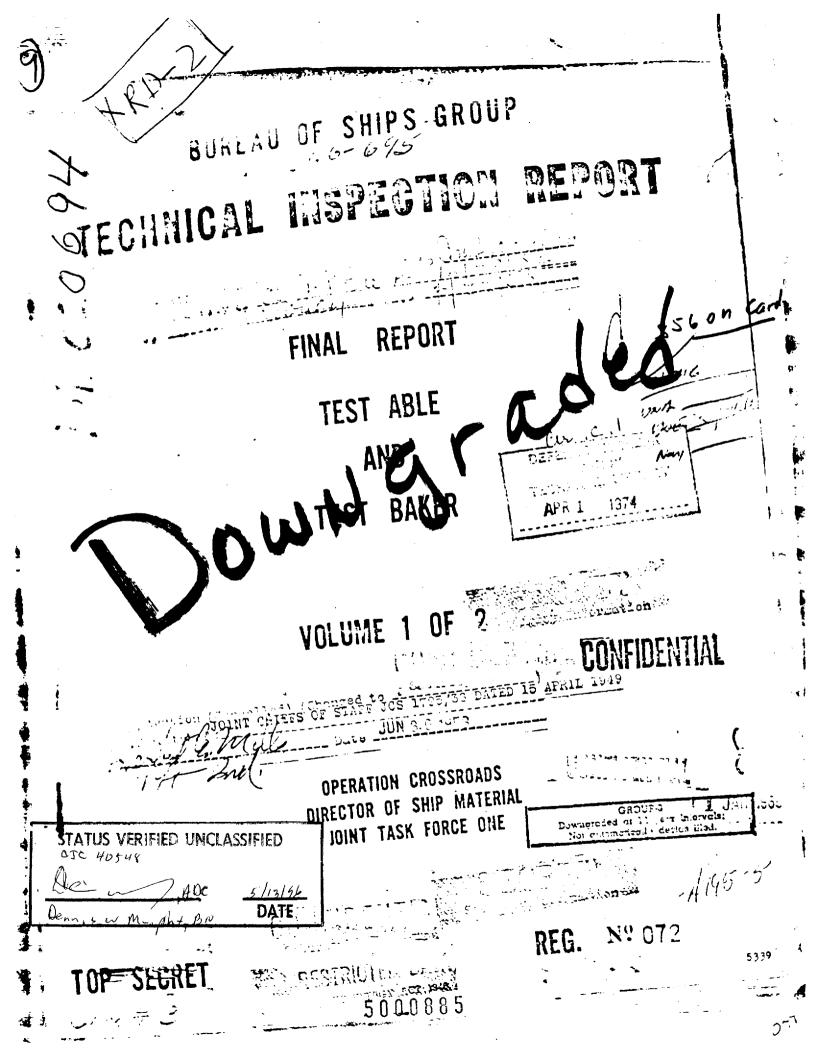
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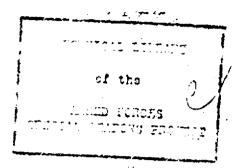




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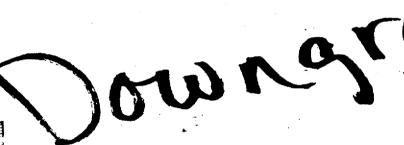
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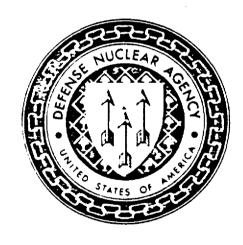
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#### FINAL DRAFT

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United States Atmospheric Nuclear Weapons Tests Nuclear Test Personnel Review



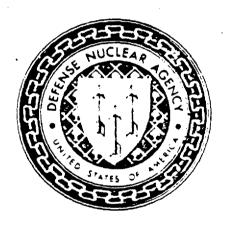
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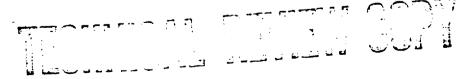
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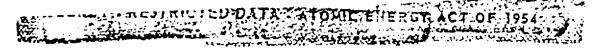
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November 1955

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Ariel G. Schrodt
Edward C. Knoblock
Alvin G. Burstein
Richard D. McIver
James E. Roberts

Department of Biophysics

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SPECIAL METORS PROJECT
21 FEB 1956

Project: 6-59-08-014, Biological and Medical Aspects of Ionizing Radiation

Subtask No. 16: World-wide Contamination (Interim Report)

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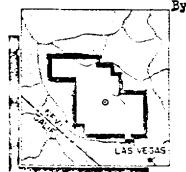
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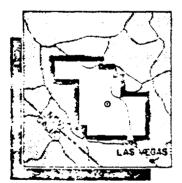
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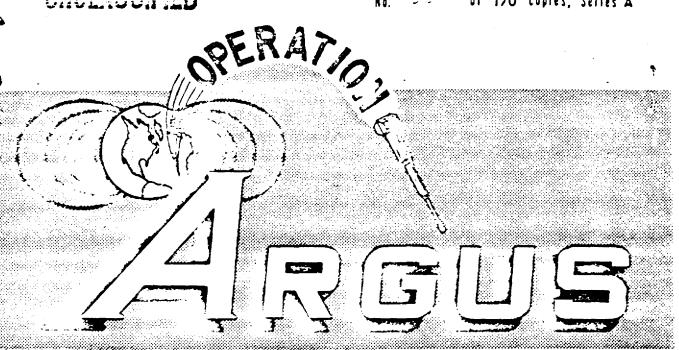
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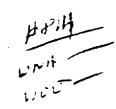
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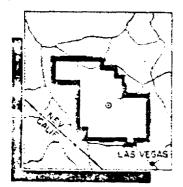
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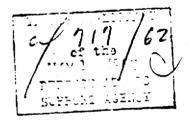
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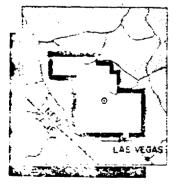
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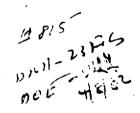
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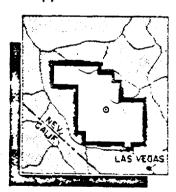
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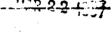
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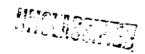
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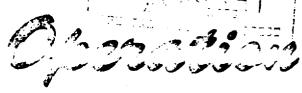
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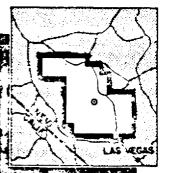
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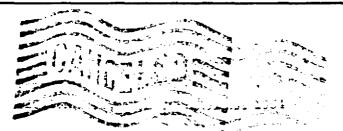
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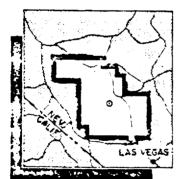
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## The First Five Tests of the BUSTER-JANGLE Series 22 October – 5 November 1951



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United States Atmospheric Nuclear Weapons Tests
Nuclear Test Personnel Review



## OPERATION DOMINIC II

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#### 4. ABSTRACT (Commisse on reverse side if necessary and identify by block musber)

This report describes the activities of an estimated 3,000 DOD personnel, both military and civilian, in Operation DONINIC II, the eighth peacetime series of nuclear weapons tests, conducted in Nevada from 7 July through 17 July 1962. Activities engaging DOD personnel included the Exercise IVY FLATS troop maneuver, joint DASA and AEC scientific experiments to evaluate the effects of the nuclear devices, and air support.

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Radiation standards

Atmospheric nuclear weapons Radiation

Radiation health concepts

Radiation protection

20. ABSTRACT (Continue on reverse side If responsey and identity by black number

This report provides supplementary information to the series and shot volumes. The information includes a glossary; list of acronyms; explanations of radiation health concepts, radiation measurement, radiation detection, radiation protection, and radiation standards; and a list of data and document sources.

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Los Alamos Scientific Laboratory
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Alamogordo Bombing Range Manhattan Engineer District Manhattan Project Personnel Dosimetry Radiation Exposure Nuclear Weapons Testing

#### 29. ABSTRACT (Combine on reverse olds if increasing and identify by block number)

This report describes the activities of an estimated 1,000 personnel, both military and civilian, in Project TRINITY, which culminated in detonation of the first nuclear device, in New Mexico in 1945. Scientific and diagnostic experiments to evaluate the effects of the nuclear device were the primary activities engaging military personnel.

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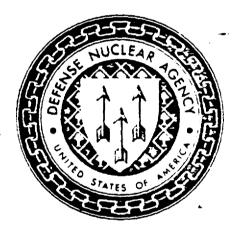
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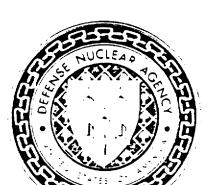
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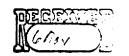
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WIND VELOCITIES - UNDERWATER ATOMIC BURST

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AFSWP-155

Staff Study by Maj. T. A. Gibson, Jr., USA, 14 March 1952

In the event of an underwater atomic explosion in a harbor, it is of interest to have estimates of the extent and magnitude of the residual radiation field as a function of surface wind velocity. It is possible to make such estimates by using the information available from the Bikini-Baker underwater explosion.

Figure 8.101 of "The Effects of Atomic Weapons" (1) will be assumed to be correct. (Assumption No. 1) This gives the dose rate at 1 hour after the explosion as observed on ships. Had the contamination fallen on land, the rates would be increased by about a factor of four due to the absence of run off and the presence of a greater contaminated area. That is, after a short time, a ship is a limited contaminated area surrounded by an essentially uncontaminated area. The final results of this paper should be multiplied by 4 to be made applicable to land adjacent to an underwater burst.

Roger Revelle, in his "Characteristics of the Base Surge," (2) gives the observed movement of the Bikini-Baker surge. He also gives predicted surge movement for other surface winds. These will be assumed to be correct. (Assumption No. 2)

The pattern of the Bikini residual contamination was observed to lie in an area almost identical with the area covered by the base surge. It will be assumed that all of the residual contamination comes from the base surge. (Assumption No. 3)

The fourth and final assumption will be that the time rate of deposition of contaminant can be expressed as:

 $\frac{dD}{dt} = \frac{K}{t^2}$  where: K is a constant to be determined

Integrating and letting,  $t_0 = time$  of explosion

t, = time surge reaches an area

to = time surge leaves an area

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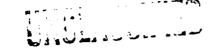
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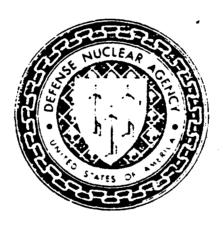
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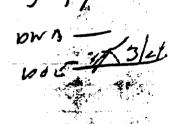
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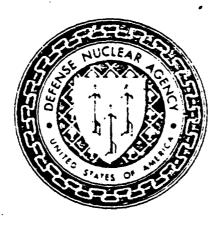
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# A Test of the UPSHOT-KNOTHOLE Series 18 APRIL 1953



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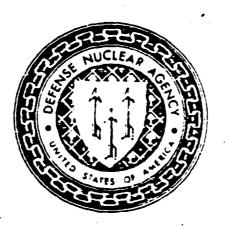
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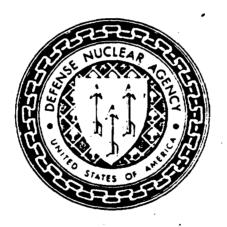
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United States Atmospheric Nuclear Weapons Tests
Nuclear Test Personnel Review

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United States Atmospheric Nuclear Weapons Tests

Nuclear Test Personnel Review

# PROJECTS GNOME AND SEDAN The PLOWSHARE Program



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Nuclear Test Personnel Review

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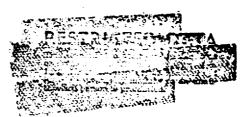
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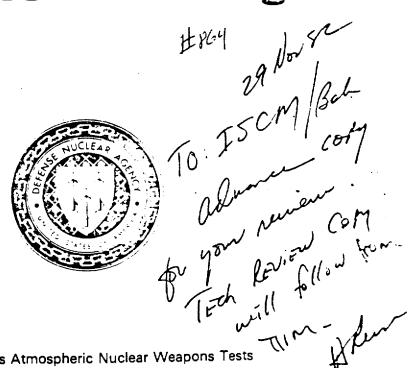


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# PROJECTS GNOME AND SEDAN The PLOWSHARE Program



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GNOME SEDAN

Carlsbad Test Site

Underground nuclear tests

VELA UNIFORM Nonmilitary applications

This report describes the activities of DOD personnel and other participants in Projects GNOME and SEDAN, the first two nuclear tests of the PLOWSHARE program. The PLOWSHARE nuclear tests were conducted from 1961 to 1973 at the NTS and other locations. Activities engaging DOD personnel at GNOME and SEDAN included scientific experiments to improve U.S. capabilities in detecting underground nuclear explosions and to determine peacetime uses of nuclear explosives.

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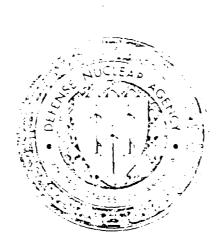
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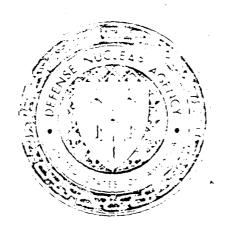


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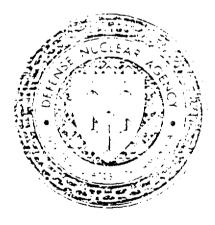
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