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REVIEWED BY J. Diaz 1/11/89
Kahn 1/11/89

Los Alamos 326 U.S. ATOMIC ENERGY
J. DIVISION
Los Alamos, N.M.

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Folder 0-1 IVY

SCIENTIFIC EXPERIMENTAL PROGRAMS - OPERATION IVY

PROGRAM 1

Radiochemistry

346-14175

Director: Dr. Roderick W. Spence
P.O. Box 1663
Los Alamos, New Mexico
Phone: 2-4357

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Project	Description	Director	Participation in Test	Sponsoring Agency
1.1	Yield Measurements	Dr. Roderick W. Spence (Address shown under Director, Program 1)	Mike & King	AEC
1.2	Internal Nuclear Detector Measurements	Dr. George A. Cowan P.O. Box 1663 Los Alamos, N.M. Phone: 2-3481	Mike	AEC
1.3	Sample Collecting	Dr. Harold F. Plank P. O. Box 1663 Los Alamos, N.M. Phone: 2-3458	Mike & King	AEC

PROGRAM 2

Progress of the Nuclear Reaction

Director: Dr. Bob E. Matt
P. O. Box 1663
Los Alamos, New Mexico
Phone: 2-5272

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2.1a	Alpha of the Fission Phase	Dr. Ernst H. Krause Radiation Division Naval Research Laboratory Washington 25, D. C. Phone: Johnson 3-6600, Ext. 864	Mike	AEC
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Program 2 (cont.)

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
2.1b	King Alpha	Dr. Ernst H. Krause (Address shown under 2.1a)	King	AEC
2.2	Timing of the Fission Phase	Dr. Ernst H. Krause	Mike	AEC
2.3	Rise of Fusion Reaction	Dr. Ernst H. Krause	Mike	AEC
2.4	Propagation of Fusion Reaction	Dr. Ernst H. Krause	Mike	AEC
2.5	Measurement of Transit Time	Mr. C. B. McCampbell Code 5225-1 Sandia Corp., Sandia Base Albuquerque, N.M. Phone: 6-4411, Ext. 2-3215	King	AEC
2.6	Temperature Measurement by Neutron Energy Spectrum	Dr. Ernst H. Krause (Address shown under 2.1a)	Mike	AEC

Remarks: Due to a change in the technique of accomplishing Program 2 experiments a Tenex-type experiment to measure the temperature of the burn ~~XXXXXXXXXX~~ has been added as Project 2.6.

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PROGRAM 3

Scientific Photography

Director: Dr. Gaalen L. Felt
P. O. Box 1663
Los Alamos, N. M.
Phone: 2-5296

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3.1	Ball of Fire Yield	Mr. Herbert E. Grier Edgerton, Germeshausen & Grier, Inc. 160 Brookline Avenue Boston 15, Mass. Phone: Copley 7-3520	Mike & King	AEC
3.2	Cloud Phenomena	Mr. Herbert E. Grier	Mike & King	AEC
3.3	Hot-spot Observation	Mr. Berlyn Brinker P. O. Box 1663 Los Alamos, N. M. Phone: 2-3741 & Dr. Gaalen L. Felt (Address shown under Director, Program 3)	Mike	AEC

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Program 3 (cont.)

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
3.4	Bomb Case Motion	Mr. Berlyn Brixner (Address shown under 3.3)	Mike	AEC
3.5	Illumination as a Function of Time, With GR-slit Cameras	Mr. Herbert E. Grier (Address shown under 3.1)	Mike & King	AEC
3.6	Bhangmeters	Mr. Herbert E. Grier	Mike & King	AEC
3.7	Preliminary Photographic Crater Survey	Lt. Col. James L. Gaylord Lookout Mountain Laboratory 8935 Wonderland Avenue Los Angeles 46, California Phone: Hudson 2-1261	Mike	DOD (USAF)
3.8	Burst Position	Mr. Herbert E. Grier (Address shown under 3.1)	King	AEC

Co-Directors

Project

5.1

5.2

5.3

5.4a

PROGRAM 4

Neutron Measurements

Director: Dr. Clyde L. Cowan
P. O. Box 1663
Los Alamos, New Mexico
Phone: 2-2844

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4.1	Slow Neutron Observations	Dr. Clyde L. Cowan (Address shown under Director, Program 4)	Mike & King	AEC
4.2	High Energy Neutron Observations	Dr. Clyde L. Cowan	Mike & King	AEC
4.3	This project has been dropped because of the addition of Project 2.6.			
4.4	Neutron Intensity as a Function of Time	Dr. Clyde L. Cowan	Mike & King	AEC

5.4b

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PROGRAM 6

Blast Measurements

Co-Directors: Dr. Everett F. Cox
Weapons Effects Dept.
Sandia Corp., Sandia Base
Albuquerque, N.M.

&
Mr. Francis B. Porzel
P. O. Box 1663
Los Alamos, N.M.
Phone: 2-2709

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<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
6.1	Pressure Vs Time on the Ground	Mr. Harlan E. Lenander Proving Ground Dept. Code 5230 Sandia Corp., Sandia Base Albuquerque, N.M. Phone: 6-4411, Ext. 7133	Mike & King	AEC
6.2	Air Mass Motion Studies	Mr. Daniel F. Seacord P. O. Box 1663 Los Alamos, N.M. Phone: 2-2709	Mike & King	AEC
6.3	Shock Wind, Afterwind, and Sound Velocity	Mr. Harlan E. Lenander (Address shown under 6.1) & Major Jack E. Whitener P. O. Box 1663 Los Alamos, N. M. Phone: 2-2766	Mike & King	AEC
6.4a	Water Wave Motion - Shallow Water - Photographic	Mr. Herbert E. Grier (Address shown under 3.1)	Mike	AEC
6.4b	Sea Waves	Mr. Willard Bascom Scripps Institute of Oceanography LaJolla, California Phone: Glencove 5-4214	Mike	DOE (ONR)
6.5	Ground Motion - Seismic Measurements	Mr. Harlan E. Lenander (Address shown under 6.1)	Mike	AEC
6.6	This project has been dropped.			

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PROGRAM 5
Gamma Ray Measurements

Co-Directors: Dr. John S. Malik
&
Dr. Newell Hart Smith
P. O. Box 1663
Los Alamos, N.M.
Phone: 2-4106

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
5.1	Total Dose	Mr. Ellery Storm P. O. Box 1663 Los Alamos, N. M. Phone: 2-3744	Mike & King	AEC
5.2	Gamma Intensity as a Function of Time	Dr. John S. Malik (Address shown under Director, Program 5)	Mike & King	AEC
5.3	Fall-out Gamma Intensity	(Unknown - UCRL)	Mike	AEC
5.4a	Fall-out Distribution and Particle Size	LCDR W. B. Beidt, Jr. c/o Code 348 Bureau of Ships Department of Navy Washington 25, D. C. Phone: Liberty 5-6700, Ext. 6-2422	Mike	DOD (USN-BuSnips)
5.4b	Close-in Particulate Cloud and Fall-out Studies	Mr. E. H. Bouton c/o Mr. Elmer E. Engquist Chemical and Radiological Laboratories Army Chemical Center Maryland Phone: Edgewood, Md. 1000, Exts. 4107 & 7267	Mike & King	DOD (USA)

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Program 6 (cont.)

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
6.7a	Underwater Pressures in Deep Water	(Unknown)	Mike	DOD (USN)
6.7b	Underwater Pressures Along Reef	Mr. Harlan E. Lenander (Address shown under 6.1)	Mike	AEC
6.7c	Acoustic Pressure Waves in Water	Mr. James W. Smith ONR, Code 418 Navy Department 7-3/2515 Washington 25, D. C. Phone: Liberty 5-6700 Exts 6-4476 & 6-6967	Mike & King	DOD (USN)
Remarks: Erroneously omitted from previous listing J-12360)				
6.8	This project has been dropped on the basis of the experience gained during the Tumbler-Snapper Operation.			
6.9	Air Density Vs Time	Major Pedro R. Florcruz & Major C. G. Young, Jr. P.O. Box 1663 Los Alamos, N.M. Phone: 2-2709	Mike & King	AEC
6.10	Free Air Pressure as a Function of Time, Manned Aircraft	Lt. Col. Rodney Nudenberg Wright Air Development Center Wright-Patterson AFB Dayton, Ohio Phone: Kenmore 7111, Ext. 2-2226	Mike & King	DOD (USAF)
6.11	Free Air Pressure as a Function of Time, Utilizing Parachute Suspended Canisters	Major James O. Vann Geophysics Research Division A.F. Cambridge Research Center 230 Albany Street Cambridge 39, Mass. Phone: Lexington 9-2200 Ext 69 or 133	Mike & King	DOD (USAF)
6.12	This project has been dropped since no feasible method of accomplishment could be determined in the limited time available.			
6.13	Measurement of Free-air Pressures by Rocket Photography	(Unknown)	King	DOD (AFSWP)

* Project has been proposed but not yet approved.
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PROGRAM 7

Long Range Detection

Co-Directors: Mr. Walter Singlevich
&
Lt. Col. Paul R. Wignall
Headquarters, USAF
Office for Atomic Energy, DCS/O
Attn: AFOAT-1
Washington 25, D. C.
Phone: Liberty 5-6700
Exts. 6-1123 and 6-5400

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<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
7.1	Electromagnetic Effects From Nuclear Explosion	Mr. Marvin H. Oleson Headquarters, USAF Office for Atomic Energy, DCS/O Attn: AFOAT-1 Washington 25, D. C. Phone: Liberty 5-6700 Ext. 6-3946	Mike & King	DOD (USAF)
7.2	Airborne Low-Frequency Sound from Atomic Explosion	Mr. George B. Olmstead Headquarters, USAF Office for Atomic Energy, DCS/O Attn: AFOAT-1 Washington 25, D.C. Phone: Liberty 5-6700 Ext. 6-1110	Mike & King	DOD (USAF)
7.3	Calibration Analysis of Close-in A-Bomb Debris	Mr. Walter Singlevich (Address shown under Director, Program 7)	Mike & King	DOD (USAF)
7.4	Propagation of Seismic Waves	Mr. J. Allan Crocker Headquarters, USAF Office for Atomic Energy, DCS/O Attn: AFOAT-1 Washington 25, D. C. Phone: Liberty 5-6700 Ext. 6-1122	Mike & King	DOD (USAF)
7.5	Transportation of Airborne Debris	Mr. P. W. Allen Headquarters, USAF Office for Atomic Energy, DCS/O Attn: AFOAT-1 Washington 25, D.C. Phone: Liberty 5-6700 Ext. 6-2189	Mike & King	DOD (USAF)
7.6	Detection of Fireball Lights at Distances	Mr. Marvin H. Oleson (Address shown under 7.1)	Mike & King	DOD (USAF)

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PROGRAM 8

Thermal Radiation Measurements

Director: Dr. Leslie B. Seely
P. O. Box 1663
Los Alamos, N. Mex.
Phone: 2-2130

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
8.1	Integral Thermal Radiation	Dr. Harold S. Stewart Radiometry Section Optics Division Naval Research Laboratories Washington 25, D. C. Phone: Johnson 3-6600 Ext. 681	Mike & King	AEC
8.2	Thermal Intensity as a Function of Time	Dr. Harold S. Stewart (Address shown under 8.1)	Mike & King	AEC
8.3	Spectroscopy	Dr. Harold S. Stewart	Mike & King	AEC
8.4	Air Attenuation	Dr. Harold S. Stewart	Mike & King	AEC
8.5	Thermal Radiation as a Function of Time in Free Air, Utilizing Manned Aircraft	Lt. Col. Rodney Nudenberg (Address shown under 6.10)	Mike & King	DOD (US...)

PROGRAM 9

Electromagnetic Phenomena

Director: Col. Leland H. Stanford
Headquarters, Joint Task Force 132
Washington 25, D. C.
Phone: Liberty 5-6700, Ext. 6-5709

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9.1	Electromagnetic Signals	Dr. Clyde L. Cowan (Address shown under Director, Program 4)	Mike & King	AEC
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Program 9 (cont.)

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
9.2	Effects on the Ionosphere with Respect to the Propagation of Radio Waves	Dr. C. M. Crenshaw Signal Corps Engineering Laboratories Fort Monmouth, N. J.	Mike & King	DOD (USA)
9.3	Investigation of Electromagnetic Radiation, Throughout the Radio Spectrum, Caused by an Atomic Explosion	Mr. Peter Brown c/o Commanding Officer Evans Signal Laboratory Belmar, N. J.	Mike & King	DOD (USA)
9.4	Evaluation of Indirect Bomb Damage Assessment Techniques	Mr. Gordon C. Arnold, Jr. Wright Air Development Center Wright-Patterson AFB Dayton, Ohio	Mike & King	DOD (USAF)

PROGRAM 10

Timing and Firing

Director: Mr. Herbert E. Grier
Edgerton, Germeshausen & Grier, Inc.
160 Brookline Avenue
Boston 15, Massachusetts
Phone: Copley 7-3520

10.1	Timing and Firing	Mr. Herbert E. Grier (Address shown under Director, Program 10)	Mike & King	AEC
10.2	Release Tone	Mr. C. B. McCampbell (Address shown under 2.5)	King	AEC

PROGRAM 11
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Preliminary Geophysical Survey of the Test Area

Director: Dr. H. Kirk Stephenson
P. O. Box 1663
Los Alamos, N. M.
Phone: 2-4380

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11.1	Soundings of the Ocean Side of Eniwetok Reef	Mr. J. W. Smith (Address shown under 6.7a)	Pre-Shot	DOD (AFS&P & O&R)
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Program 11 (cont.)

<u>Project</u>	<u>Description</u>	<u>Director</u>	<u>Participation in Test</u>	<u>Sponsoring Agency</u>
11.2	Scaled Ground Shock Tests	Dr. H. Kirk Stephenson (Address shown under Director, Program 11)	Pre-Shot	DOD (A/SAP)
11.3	Deep Drilling to Base Rock	Mr. Gordon Lill Office of Naval Research Washington 25, D. C. Phone: Liberty 5-6700 Ext. 6-2346	Pre-Shot	DOD (A/SAP & ONR)
11.4	Seismic Refraction Surveys	Mr. J. W. Smith (Address shown under 6.7a)	Pre-Shot	DOD (A/SAP & ONR)
11.5	<i>Marine Seismic</i>	<i>Dr. Lauren Donaldson Univ. of Washington Applied Fisheries Lab. Seattle 5, Washington</i>	<i>Pre and Post Tests</i>	<i>AEC</i>

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Sponsoring Agency

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