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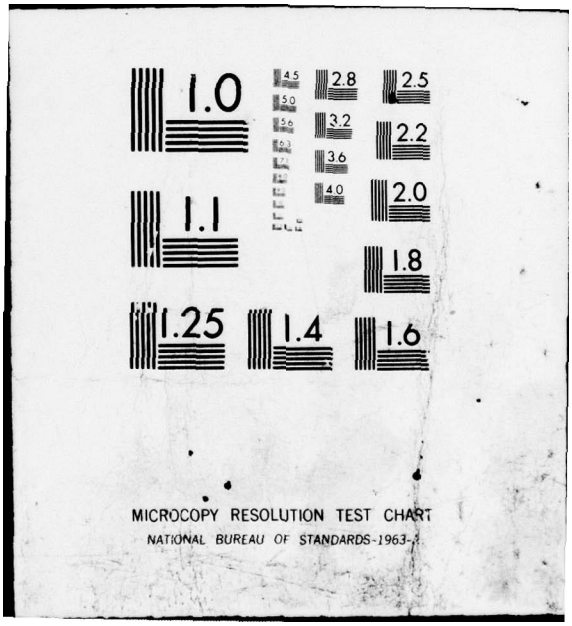
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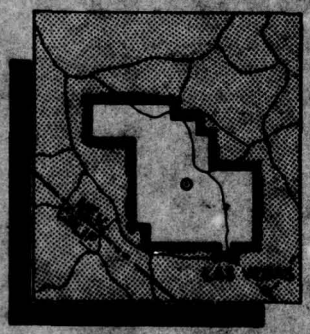
Operation UPSHOT-KNOTHOLE

NEVADA PROVING GROUNDS

March - June 1953

Project 22.1

EVALUATION OF TRAINING PROGRAM FOR RADIOLOGICAL DEFENSE PERSONNEL



FEDERAL CIVIL DEFENSE ADMINISTRATION
WASHINGTON, D. C.

WT-808

Report to the Test Director

EVALUATION OF TRAINING PROGRAM FOR RADIOLOGICAL DEFENSE PERSONNEL

By

V. B. Lamoureux

Approved by: ROBERT L. CORSBIE
Director
Civil Effects Test Group

Federal Civil Defense Administration
Washington, D. C.
December 1953

ABSTRACT

The purpose of the project was to provide field training under actual nuclear explosion conditions for State and local civil defense personnel engaged in radiological defense planning. Previous education, training, and experience in radiological physics, health, or safety were desirable.

Selected trainees reported to the Nevada Proving Grounds by Apr. 22, 1953, where they completed a course of lectures and field exercises by May 5, 1953. All trainees were given security clearance to permit access to restricted areas and freedom of discussion with program directors, project officers, and other test officials. The trainees received background information useful to them in their preparation of radiological defense plans in their home States and communities.

The trainees and test officials associated with the training course were unanimous in their praise of such radiological defense training. Experience gained by project personnel will be extremely useful in planning and conducting future training courses.

ACKNOWLEDGMENTS

Special acknowledgment is made of the assistance given by (1) R. L. Corsbie in the promotion and implementation of this training program; (2) Alvin C. Graves, J. C. Clark, and members of their staffs, for helpful suggestions and direct participation; (3) Col C. S. Maupin and Lt Col T. B. Collison, Armed Forces Special Weapons Project, and their staff, in extending the cooperation of the Rad-Safe service; and (4) Drs. John C. Bugher, Director, Division of Biology and Medicine, Atomic Energy Commission, Howard L. Andrews, Radiobiologist, Public Health Service, and the many others who gave so willingly of their time and counsel.

Commendation is due the trainees who gave time from their normal duties to attend and actively participate in this training program. Their interest and cooperation contributed significantly to its success.

CONTENTS

EVALUATION OF TRAINING PROGRAM FOR RADIOLOGICAL DEFENSE PERSONNEL

1 OBJECTIVE

The purpose of this project was to provide civil defense field training under actual nuclear explosion conditions for radiological defense personnel of State or local civil defense organizations. Training in radiological defense at State or local levels has been limited to the use of low-activity radiation sources utilizing low-range Geiger-Mueller (G-M) counter instruments for the detection and measurement of radioactivity during simulated civil defense exercises. A training need exists in the detection and measurement of radioactivity following an atomic explosion where (1) the levels encountered could be expected to be materially higher than otherwise available; (2) the radiation levels will be a comparatively unknown factor; and (3) conditions of detection and measurement in open areas could be translated into conditions that might be encountered during actual warfare.

2 BACKGROUND

The Armed Forces Special Weapons Project invited the Federal Civil Defense Administration (FCDA) to participate in the 1952 spring tests to broaden its knowledge of radiological safety operations and to become familiar with special civil defense situations following atomic explosions.

Following the tests, discussions were held with the Director and staff members of the Health and Special Weapons Defense Division of the Health and Welfare Office and the FCDA, as well as with members of the Division of Biology and Medicine, Atomic Energy Commission (AEC), to determine the feasibility of obtaining training for State and local civil defense radiological personnel at the Nevada Proving Grounds (NPG) during the 1953 spring tests.

The FCDA then sent a letter to the AEC in which the following points were included:

1. The FCDA would provide radiological safety personnel with proper security clearance, training, and experience for project leadership.

2. The FCDA would negotiate with State and local civil defense organizations for personnel recruitment for top-level monitoring operations.

3. The U. S. Public Health Service (USPHS), if it agreed, would negotiate with the State health departments for personnel, other than those already assigned to civil defense duties, to be recruited from their staffs for training and experience.

4. The FCDA would negotiate with the USPHS, the AEC, the Department of Defense (DOD), and other Federal agencies to provide orientation, training, and lectures for the trainees prior to actual test operations.

After discussions with representatives of the AEC, it was decided to include a training project in the newly formed Civil Effects Test Group (CETG) of the Test Organization. Training during actual test operations was planned. The program included limited participation in actual

radiological safety operations, supplemented by a series of lectures by the Test Organization, DOD, and FCDA officials, and observation of at least two individual tests. Training would be limited to 20 trainees for a two-week period. Full security clearance of all participants would be required.

3 OPERATIONS

A proposal for participation by the FCDA in radiological safety operations at NPG was submitted as a project under the Civil Effects Test Directorate on Sept. 19, 1952 (see Appendix A).

In October 1952 limited information was given to the FCDA Regional Directors. They were asked to recruit trainees from State and local civil defense radiological defense organizations. By November 1952 names of trainees were being submitted, and the necessary security clearance investigations were begun. Recruitment and clearance investigations continued until Apr. 1, 1953, approximately three weeks prior to the time of reporting for training. To enable the FCDA to set dates for the first training course at the test site, pertinent information regarding the tests, dates, and participating projects was furnished. The selected dates were those which offered the least conflict with plans and projects of other agencies and which created less demand upon housing, transportation, and other facilities. A proposed schedule of participation was submitted to the AEC. Names of trainees were submitted and accepted (see Appendix B). Limited information was furnished to trainees, but specific reporting information regarding dates and places was not furnished until candidates were cleared.

The Project Officer did not arrive until April 15, one week prior to the arrival of trainees. In retrospect this was insufficient time to arrange for the arrival and billeting of trainees, to provide transportation, to complete a course schedule, and to make all other necessary preliminary arrangements. With the assistance of the Civil Effects Test Director, a tentative schedule was drawn up. Arrangements were made for officers of the Test Organization and others to lecture to the trainees. Almost immediately it was necessary to revise this schedule to resolve conflicts with test activities of many of the scheduled officials (see Appendix C). G-M counter instruments for trainee use were borrowed from the Los Alamos Scientific Laboratory, and standard Army AN/PDR-T1B ion-chamber survey meters were issued by the Radiological-Safety (Rad-Safe) Unit for use as required. Film-badge service, protective clothing, and monitoring services were also provided by the Rad-Safe Unit as needed.

The trainees arrived on April 21 and 22. Prearrangements by the Civil Effects Test Director for identification badges, billeting, and entry into the reservation were excellent.

All trainee operations were on-site because off-site operations would require an overnight stay away from the Proving Grounds and could not be fitted into an already tight schedule. Otherwise the schedule was rigidly followed until delays in tests caused deletions of some operations. As an example, it was not possible to include the contaminated-areas study, Program 27, in the schedule. No allowance for such delays was made, and too little time was provided for discussions.

Reports by individual trainees were reviewed and summarized, and an attempt was made to answer the criticisms (see Appendix D). Individual comments are not included in this report.

4 CONCLUSIONS

The training course was well received by the trainees; however, the number of trainees attending the course could have been larger, i.e., 25 or 30. Factors which influenced State and local civil defense response were:

1. The mechanics required for the FCDA to get information to interested, qualified trainees.
2. The length of time required for security clearance investigation of trainees.
3. The insufficiency of funds on the part of State and local civil defense organizations for sending trainees to the Proving Grounds.

4. The length of time necessary for trainees to be away from their usual duties and assignments.

Despite the shortcomings of this first FCDA radiological defense training course, it is the opinion of the FCDA officials and the trainees that the training was successful and should be continued at every opportunity.

5 RECOMMENDATIONS

The following recommendations are presented for guidance in planning future radiological defense training courses.

1. The AEC should continue to provide the opportunity at NPG or other test sites for the FCDA to conduct courses in radiological safety for Federal, State, and local radiological defense personnel.
2. Such courses should be not less than two weeks in duration.
3. Training should include assignment to the Rad-Safe Unit as monitors at the program or project level. Trainees assigned on this basis should not necessarily be recruited for a full period required by a series of tests. They could be assigned in small groups for shorter periods.
4. Trainees should be told exactly what information is of an unclassified nature and can be repeated to their civil defense organization or in public statements. Copies of all AEC and FCDA press releases would be helpful. A Public Affairs Information Specialist should be assigned to the group.
5. Organized off-duty activities, such as visits to nearby points of interest, should be included.

APPENDIX A

PROPOSAL BY FEDERAL CIVIL DEFENSE ADMINISTRATION FOR PARTICIPATION IN RADIOLOGICAL SAFETY OPERATIONS DURING ATOMIC TESTS AT THE NEVADA PROVING GROUNDS

September 19, 1952

Mr. Robert L. Corsbie
Chief, Civil Defense Liaison Branch
Division of Biology and Medicine
Atomic Energy Commission
East Building, 16th and Constitution
Washington 25, D. C.

Dear Mr. Corsbie:

Enclosed is a proposal by the FCDA for participation in the radiological safety operations during atomic tests at the Nevada Proving Grounds. Following your suggestion, this proposal is submitted as a project to be carried under the general direction of the Civil Effects Division of the Test Organization. However, the FCDA wishes to state that the primary purpose of the proposal is to provide a service to the Test Organization at the same time that training in radiological safety (defense) measures is being provided State and local radiological defense personnel. Whether such service and training may best be given and secured as an integral part of the existing Rad-Safe Division of the Test Organization, or as a separate project within the Civil Effects Division, should be determined by the Atomic Energy Commission and its Test Organization.

I shall appreciate your reviewing this proposal and placing it in the hands of the appropriate persons within the Commission for consideration and approval.

Sincerely yours,

/s/ Vincent B. Lamoureux

Encl.
Proposal

Vincent B. Lamoureux
Consultant, Radiological Defense
Health and Special Weapons
Defense Division

PROPOSAL BY FEDERAL CIVIL DEFENSE ADMINISTRATION FOR PARTICIPATION IN RADIOLOGICAL SAFETY OPERATIONS DURING ATOMIC TESTS AT THE NEVADA PROVING GROUNDS

September 19, 1952

1. The FCDA proposes a program of participation in the radiological safety operations during atomic tests at the Nevada Proving Grounds. This program of participation will begin with the spring tests in 1953 and continue as long thereafter as such participation is useful to the Atomic Energy Commission and of value to the FCDA, participating Federal agencies, and State and local civil defense organizations.

2. The proposed program of participation would comprise:

a. On-site monitoring as part of the test site radiological safety program. Duties would include all parts of this program other than routine day-to-day monitoring beyond that required for experience in the field with instruments as part of a training program in radiological defense.

b. Off-site monitoring as required as part of the test site radiological safety program, and as may be desirable beyond these requirements either as part of a radiological defense training program or as part of any research or study program.

c. Cooperation with State and local civil defense agencies of the States of Arizona, California, Nevada, and Utah as a part of their radiological defense training programs.

d. Assigned duties would be on a continuing basis, to provide continuity from one series of tests to another.

3. Explanation:

a. The FCDA has been frequently requested to provide radiological monitoring training as a part of its radiological defense planning program. Over two years ago the AEC sponsored a limited training and orientation program, at the request of the National Security Resources Board, for qualified persons who, in turn, were to offer their services to State civil defense organizations in the development of State radiological defense plans and programs. Since then, training has been undertaken at both State and local levels, using these AEC-trained personnel and others. Such training, however, has been limited by the use of known radioactive sources of relatively low energies and instruments designed to measure very low intensity radiations. An opportunity to participate in the atomic tests at the Nevada Proving Grounds would permit training against radiations of higher intensities, and frequently of undetermined intensities, with instruments with which the trainees are familiar and with many with which they are not familiar. These tests are the nearest approach to actual atomic weapons bursts during wartime that these monitors will ever experience, and, although the conditions at the test site are far removed from the urban conditions under which they will be expected to operate, yet the training, under field conditions, will provide experiences which should prove invaluable to them under actual wartime disaster.

b. Experience at the test site on the part of one of the FCDA representatives through two series of tests shows that the major need of the Test Organization Rad-Safe Group is a continuity of trained, responsible personnel at top level for service over two or more consecutive series of tests. There is some continuity provided through advisory channels and through a very small number of military personnel assigned to the Test Command (Armed Forces

Special Weapons Project). Not enough personnel with experience at the test site and surrounding area have been so assigned, however, to provide adequate direction to newly assigned personnel. Familiarity with the test area, the camp, and the surrounding country is essential for efficient operation of the Rad-Safe Group. The FCDA proposal, then, would provide service to the AEC Test Organization and to the Test Command by providing continuity of trained service at top level of the AEC Test Organization Rad-Safe Group.

c. The FCDA does not have enough persons with appropriate clearance charged with responsibility for radiological defense plans and operations to give the time required to Rad-Safe operations at the test site—estimated at five months per man per year. Further, the Department of Defense has given the responsibility for providing monitoring service, requiring between 150 and 200 monitors per series, to the 216th Chemical Company. The Department of Defense also assigns officers from the various branches to the Rad-Safe Group for experience and training, but rarely on a continuing basis.

d. The FCDA proposes in this project to provide training for State and local civil defense radiological defense personnel by providing their services to the AEC Test Organization for atomic-test, radiological-safety duties. It is proposed that such duties be limited to top level within the Rad-Safe Group, although it is recognized that this proposed training in radiological defense should include participation in all phases of the test site radiological safety program of activities. However, FCDA wishes to limit the recruits from State and local levels, or from other Federal agencies, under FCDA auspices, to those persons having previous training or experience in the various phases of radiological health or defense. Accordingly, the training received at the test site should be of such caliber as to hold their interest, as well as to be able to retain them for active service for the entire series of tests.

e. Within limits to be set by the AEC, the FCDA proposes that assignments to the Rad-Safe Group include any or all of the following duties, for which FCDA is willing to assume responsibility for assignment of personnel.

Rad-Safe (radiological defense) Director	1
Rad-Safe Deputy Director	1
Rad-Safe Medical Director	1
On-site Monitoring, Chief	2
Vehicle decontamination	2
Personnel	2
Supply, Assistant Chief only	1
Dosimetry and records, assistant	1
Off-site Monitoring, Chief	2
Mobile monitoring	2
Aerial-Terrain surveys, assistant	1
Cloud tracking, assistant	1
Cloud sampling, assistant	1
Air sampling, ground	2
Transportation, Assistant Chief	1
Program and Project Chief Monitors	12 to 20
Civil Defense Liaison with states	5
Total	38 to 46

f. It may not be possible for FCDA to recruit this number of persons, at least for the first series of tests, following approval of this proposal by the Atomic Energy Commission. Moreover, the time required for security clearance of all participants may serve to limit participation at this first series. The duties listed indicate the primary interest of FCDA in the Rad-Safe operations as an integral part of its radiological defense training.

4. Performance by FCDA. Under requirements to be established by the AEC, the FCDA proposes to:

a. Recruit personnel from State and local civil defense radiological defense organizations.

b. Provide top level guidance and direction for these persons at the test site.

c. Negotiate with the Public Health Service and other Federal agencies for the services of personnel required for special duties and for specialized training and orientation of recruits at the test site.

d. Arrange for participation, through the PHS, of State and local health department personnel primarily concerned with radiological health and radiological defense.

e. Provide radiological safety operations for FCDA programs at the test site.

5. Basic Requirements. The basic requirements set forth by the FCDA for participation at the test site under FCDA sponsorship are:

a. AEC security clearance, the cost to be borne by the participating agencies.

b. Salary and maintenance, including travel costs, to be borne by the participating agencies.

c. Firm agreement that participants will be available for the entire series of tests.

APPENDIX B

TRAINEES FOR PROJECT 22.1

Name	Home address	Business address
Bellamy, Dr. Albert William	12540 Burbank Blvd. North Hollywood, Calif.	Chief, Radiological Serv. Office of Civil Defense Sacramento, Calif.
Cady, Dr. Louis Clyde	907 E. 17th Street Moscow, Idaho	Exec. Sec., Research Council Univ. of Idaho Moscow, Idaho
Caywood, Mr. Dalmar Eugene	1518 S. Kickapoo Springfield, Mo.	Commissioner of Health City of Springfield Springfield, Mo.
Chapman, Dr. Gerald Howard	122 University Drive Kent, Ohio	Prof., Chemistry Dept. Kent State University Kent, Ohio
Cinnamon, Dr. Carl Arthur	1717 Rainbow Street Laramie, Wy.	Head, Dept. of Physics University of Wyoming Laramie, Wy.
Friedland, Dr. Stephen Sholom	4 Mansfield Apt. Storrs, Conn.	University of Conn. Physics Dept. U 46 Storrs, Conn.
Lattin, Col. Jay D. B. (USA ret.)	25 Alwin Terrace Little Silver, N. J.	Chief, Radiological Sec. N. Y. State Civil Defense Commission 124 E. 28th Street New York 16, N. Y.
Parmley, Dr. Thomas J.	530 Douglas Street Salt Lake City 2, Utah	Physics Dept. University of Utah Salt Lake City, Utah
Rehm, Mr. Fred R.	2721 N. 97th Street Milwaukee 10, Wis.	Chairman, Radiological Defense Unit Office of Civil Defense County of Milwaukee Milwaukee 3, Wis.
Smith, Mr. Lowell J.	1765 SW Ford Street Drive Portland 1, Oregon	Oregon State Civil Defense State Office Building Salem, Oregon
Thomas, Dr. Charles D.	235 So. Walnut Street Morgantown, West Virginia	Chief, Radiological Div. West Virginia Civil Def. West Virginia Univ. Dept. of Physics Morgantown, W. Va.

Name	Home address	Business address
Tolan, Mr. John H.	251 10th Street, N. W. Apt. 123 Atlanta, Georgia	Research Physicist Georgia Institute of Technology Atlanta, Georgia
Wolfe, Dr. Alvin Clair	1033 Orlando Avenue Akron, Ohio	Professor of Chemistry University of Akron Akron, Ohio
Williams, Lt. Leslie W., Jr.*	246 Colman Street New London, Conn.	Director of Training Dept. of State Police 100 Washington Street Hartford 1, Conn.

*Departed due to illness in family Apr. 23, 1953.

APPENDIX C

PROGRAM FOR INDOCTRINATION COURSE

Shot No. 7	Shot No. 8*	Schedule	Location	By
D−3	D−10			
Wed.	4/22	Arrival, billeting, badges	Mercury	Program 22
D−2	D−9			
Thurs.	4/23	0900: Assembly	Bldg. 101	Program 22
		Program, purposes, objectives	Conf. Room	V. Lamoureux
		1000: CETG welcome		R. L. Corsbie
		1030: Nevada Proving Grounds		S. R. Woodruff
		1100: Security briefing		E. D. Hightower
		1130: Classification briefing		L. M. Redman
		1300: Assembly	Quonset 24	
		To Control Point	Bldg. 2	Rad-Safe Unit
		Rad-Safe Operations		Lt. Col. Collison and Staff
		Tour of test area		Program 22
		Calibration of instruments		Rad-Safe Unit
D−1	D−8			
Fri.	4/24	0900: Assembly	Bldg. 101 Conf. Room	Program 22
		0930: Test Organization and Operations		J. C. Clark
		1000: Civil Effects Tests		R. L. Corsbie
		Program 23, Biomedical Effects		E. D. Cronkite
		1300: Rad-Safe Off-site Operations plotting	Control Point	Rad-Safe Unit Maj. W. H. Stevens
		Tour of test area		Program 22
D	D−7			
Sat.	4/25	Assembly as directed		
		Test observation		Rad-Safe Unit
		Rad-Safe Operations observation		Rad-Safe
		Telemetering Operations		R. Johnston Program 28
		Afternoon open		

Shot No. 7	Shot No. 8*	Schedule	Location	By
D+1	D−6			
Sun.	4/26	0830: Bomb phenomenology	Bldg. 101	N. H. Smith
		0930: Radiation hazards and biomedical effects	Conf. Room	Dr. H. Andrews and Dr. J. Bugher
		1100: Military Effects Program and blast effects		E. B. Doll
		1400: Thermal effects		Capt. Haight
D+2	D−5			
Mon.	4/27	0515: Area survey (4 men)	Control Point	Rad-Safe Unit
		0700: Area survey observations (all)	Control Point	Rad-Safe Unit
		0900: Project 22.4 recovery (3 men)	Control Point	Rad-Safe Unit Project 22.4
D+3	D−4			
Tues.	4/28	0900: Photograph of group	Control Point	Test Organization
		0915: Briefing, weather	Control Point	Test Organization
		Briefing, fall-out predictions	Control Point	Test Organization
		Briefing, fall-out tracking	Control Point	Gordon Dunning
		Briefing, cloud tracking	Control Point	Gordon Dunning
		1300: Fall-out studies in near areas	Conf. Room	Kermit Larson Program 27
D+4	D−3			
Wed.	4/29	0900: Questions and answers	Conf. Room	Dr. John Bugher, Dr. D. Andrews, and others
		1030: Projects 22.2 and 22.4	Conf. Room	J. C. Greene and E. P. Laug
		1300: Frenchman Flat tour	Quonset 24	DWET, Lt. J. E. Kupperian
D+5	D−2			
Thurs.	4/30	0800: Area survey (4 to 8 men)	Control Point	Rad-Safe Unit
		Plots, estimates, calculations		Rad-Safe Unit
		1200: Rad-Safe Off-site Operations	Control Point	W. Johnson Rad-Safe Unit
D+6	D−1			
Fri.	5/1	0800: Reviews and reports	Quonset 24	Program 22
		0900: Civil Defense applications	Quonset 24	Program 22
		1100: Security classification		Security
		1145: Windup		R. L. Corsbie
		1300: Desert Rock Rad-Safe Operations		Desert Rock
D+7	D			
Sat.	5/2	0900: Complete reports, departure		Program 22

*The shot schedule used here was postponed until May 8.

APPENDIX D

REPLY TO TRAINEES' REPORTS

TO ALL STUDENTS First Radiological Defense Training Course, Nevada Proving Grounds, Mercury, Nevada
April 22, 1953, through May 4, 1953

GREETINGS:

I have all of your reports on the first course attempted for Civil Defense radiological defense personnel from States and target areas held at the Nevada Proving Grounds in connection with continental atomic tests.

The criticisms and suggestions that all of you submitted fall into several general categories. The purpose of this letter is an attempt to explain some of them, answer others, and only mention the remainder. Individual criticisms are not answered but they will be if a request for clarification of some of the questions raised is addressed to me in Washington. Both criticisms and suggestions are included in the following list:

1. Selection of participants in the course
2. Advance information
3. Housing
4. Transportation to and from Mercury
5. Entry into test area
6. Course schedule including changes and gaps
7. Recreation
8. Vehicles assigned to project
9. Participation in programs and projects
10. Information and news releases
11. Future courses
12. Research by universities
13. Civil Defense applications
14. Miscellaneous, mainly personal observations

The initiation of this course started in the 1951 Fall series of tests when arrangements were made for two FCDA persons and one Public Health Service person to participate in the radiological safety operations at the test site and for 20 of the FCDA and PHS persons to attend for 5-day periods as "working observers." The latter arrangement did not work out successfully as to the timing since the program started too late for final inclusion and it was not always possible to arrange for any participation beyond a morning seminar held by Rad-Safe personnel. No training program was provided during the Spring 1952 tests beyond my own attendance to gain experience in special details in radiological safety operations.

This course actually began upon my return from that series of tests, about June 15th. Informal discussions with representatives from the Test Organization here in Nevada seemed to indicate that a proposal to participate in Rad-Safe operations might be favorably received. Accordingly, the Division

of Biology and Medicine of the Atomic Energy Commission in Washington was approached informally to discuss possible participation for State and local radiological defense personnel in Rad-Safe operations. An informal memorandum from myself to Mr. R. L. Corsbie, Civil Defense Liaison for the Division of Biology and Medicine, followed. Meanwhile the Test Organization was modified to include a Civil Effects Test Group of which Mr. Corsbie was named Director. The informal proposal was then changed into a formal project proposal which had to be reviewed, changed and accepted. All this took time.

The next step was to recruit personnel from State and local organizations to attend the proposed course. The original intent, within the project, was to hold this course for a full month, preferably at the end of the series of tests, the course to include full participation in Rad-Safe operations with briefings and lectures held in the evenings and off days. Full participation was ruled out as assignment for Rad-Safe operations had been delegated to the Department of Defense and could not be again delegated to FCDA. Participation under military auspices was not possible once the project proposal had been submitted and accepted. The month's time was cut to ten days to permit the viewing of two shots--barring delays such as did affect this training group. There were questions regarding qualifications of participating personnel to be answered, the questions of clearances and costs to be settled and the beginning of a series of status reports to be prepared.

Information, limited because of classification restrictions, was sent to the FCDA regional offices, which in turn informed State and local Civil Defense Directors of the forthcoming course. In turn, each of you was advised. The long process of clearances began, actually ending with the last applicant on April 1st of this year. Until information was at hand to send each of you and until your security clearance was received, nothing could be sent out much ahead of the time you were to report. The course was finally underway and instructions were given you to report at Mercury on April 22nd (via Las Vegas, as it is the nearest airport and railhead).

This is a long preliminary statement before answering your questions raised in the reports but I feel that it will give you an idea that even such a small project as this is time consuming. And now to specific questions.

1. The selection of participants was left to the Civil Defense Directors. We did not feel that we could turn down anyone responsible for radiological defense planning in his State or city, regardless of his background. In the future, background material will be provided, and participants without this background will be invited two days early.

2. All advance information was sent that was available and only when it could be sent, depending upon classification and the security clearance status of each individual. It was not screened, as a lack of full clerical assistance at the home office prevented more than absolutely necessary work in this project. Some of you brought too much clothing and there was no information on the need for compasses, flashlights, can openers and other items. Upon preparation of future courses, with time permitting and assistance available, FCDA personnel instructions of particular interest to the course will be prepared.

3. The Atomic Energy Commission does not provide transportation for its people upon arrival in and departure from Mercury. It is provided only when convenient to do so. FCDA did not have funds or personnel to provide this service. However, it was the intent of this particular group to meet trains and planes when possible. Many of your messages were not received and in the one instance where an attempt was made to meet incoming personnel, one was actually met, a second was left a note to wait with the airline office and never received the note, a third came early but his message was not received and two others were unexpectedly picked up. I believe that none of you were inconvenienced upon departure.

4. Entry into and out of the test area is according to regulations applicable to everyone. Early arrivals do have some inconvenience, as Security and Housing are not always open the entire 24 hours. Future instructions will suggest staying in Las Vegas and coming out to camp in the morning.

5. Housing for trainees is provided under the general rule that personnel staying in camp for less than two weeks are given accommodations in the hutments. Dormitory space is at a premium and greatly in demand. The CETG was given an allotment of dormitory space that did not fill its needs. I should point out that many programs and projects are accommodated in hutments. I do not see much possibility in any change in this setup.

6. A rough course schedule was prepared and submitted late last year. Apparently it was approved, in principle at least, because no comment regarding it was ever received. I do not know what its distribution was in the Test Organization. A final schedule was not done until after my arrival here and a following meeting on April 19. This was distributed in part resulting in a delay in reaching the Rad-Safe Unit, as you were aware. Changes were necessary after all concerned had reported what changes were desirable in order to meet other commitments. A second change was dictated by postponement of the second shot which you were to see and also by the reasonableness of the Rad-Safe Unit permitting participation in actual on-site monitoring operations in place of a special exercise for FCDA personnel. Further, field exercises with the off-site group and Program 27 (Kermit Larson and staff) were dropped because of the time element involved (36 to 48 hours for each). So the course was necessarily contracted to close the gaps.

A tight schedule was set up to permit the summing of as much information and participation as possible in a short period of time in order not to keep you away from your normal duties any longer than possible. Consequently, seminars and discussion periods were not set up. The hours permitted others who met with us to start their day's routine without too much interruption.

Two mistakes were made in this connection. The first was not scheduling a full two weeks' course and the second was my failure in not reporting here a week earlier so that course details could be straightened out beforehand.

7. Recreational facilities are provided by the Department of Defense for their area personnel. Invitations are generally extended to other personnel in the area but the tight schedule, including Sunday briefings, did not permit the utilization of these services. Recreation for other persons was, and is, a personal responsibility. FCDA did not have funds, personnel, or vehicles available for this purpose nor will it be planned for future courses. However, future courses will be arranged to permit trainees to take advantage of guided DOD tours and to arrange for their own trips.

8. A sedan, one pick-up, and five jeeps were assigned to the project for training purposes only. They were not intended for recreation. Individuals were assigned vehicles to make it easier to draw them for training purposes. Other uses were not permitted. As FCDA must bear the cost of the operation of these vehicles, and as funds were short, these vehicles could be used for official purposes only. Future courses may arrange for better vehicles but again they will be drawn for official use only.

9. Participation in programs and projects must wait until the FCDA trainees in future courses have demonstrated their knowledge, experience and abilities. FCDA is a relative newcomer in the field of atomic test operations; it may be possible to extend the training program to permit participation. I agree that this is most desirable, informative and productive of results most useful to the trainees.

10. Information and news releases for trainees was a bad lapse on your Director's part. An earlier appearance on the scene could have assured non-classified materials and prior news releases for all of you. So far as news releases are concerned, however, your local papers probably carried these stories prior to your departure.

11. Future courses are intended if the Test Organization is convinced that the course you took was valuable to Civil Defense and if they can be arranged. It was necessary to move slowly in the first course in order to establish good working relationships and an appreciation of what FCDA is attempting to do. This accounted for the lack of aggressiveness noted by some of you. Once the principle of training for civil defense is established,

FCDA can then develop more courses on a firmer ground with greater participation on the part of all concerned.

12. I cannot answer the question of research by universities to answer in turn some of the questions raised by some of you through your tour of duty here. I would suggest you write the AEC directly raising the particular questions in mind and giving some information on the abilities and facilities available to carry on the research. You may also learn that such research is now being carried on.

13. Civil Defense application of the knowledge received may be a little difficult to pin down. The terrain here is so different from any urban situation. The levels of Rad-Safe operations are well below consideration for civil defense operations although of interest to radiological health operations afterwards. The principles of Rad-Safe operations will be basically the same as those for civil defense from area surveys to plotting with all its ramifications. I agree that several sessions to discuss operations here in relation to your own planning and FCDA planning would have been helpful.

14. There are a number of other criticisms and suggestions that were hard to place in definite categories. A more thorough treatment of fallout problems will be covered in future courses. Field work was limited to on-site operations as opposed to a field exercise limited to a sector set aside for such exercise. Future field work will include time on off-site operation and field studies of contaminated area, neither of particular significance here to civil defense operations unless there are further tests of surface (on-the-ground) and subsurface bursts. Exposure levels for civil defense workers, including effects and internal effects of radiations, is a subject which needs the advice of a competent medical radiologist. FCDA recommendations are that civil defense workers will take as little radiation as possible and as much as necessary. Some discussion on this problem in civil defense operations is merited. This information seems necessary now for other civil defense activities, although actual disaster operations may make this type of planning academic rather than practical. The course here should help you evaluate your prior planning to cover the contingencies of work exposures.

Divergent points of view were expressed by some speakers. This is to be expected in a field as new as that of atomic explosions and resultant effects. It is the responsibility of FCDA to reconcile these opinions or reach a compromise acceptable to civil defense operations. Your knowledge and experience can be most helpful to FCDA in reaching a common decision. Future courses embracing top representation from States and cities and including medical advisors in radiological defense will help in reaching this decision. Again future courses will determine the best approach toward giving you the information you need, whether it be through class talks, field exercises, or a combination of both.

It is regretted that most of you were not permitted to enter the observers' area on shot day. I was not aware that the area would be restricted or arrangements for you would have been made. I am sure, however, that those of you outside this area saw the most spectacular part of the shot which you would have watched from News Knob had you been there. The second shot, had it been exploded on schedule, would have given you a chance to see the less spectacular but equally important parts of the burst from any vantage point.

The lack of briefing on shielding and protective measures was partly due to personnel competent in this field being away from the area because of postponement. It was a regrettable omission.

Observation of Desert Rock operations was made possible in order for you to observe mass monitoring of personnel and vehicles and arrangements for decontamination on a mass basis. These are important items for civil defense to consider.

The apparent lack of interest on the part of the AEC officials may best be explained by the fact that the project was an exceedingly small item on the list of projects supervised by the Test Organization. For

example, Mr. Corsbie was the Civil Effects Test Group Director and a Program Director. His duties could not permit his attendance at sessions of the training course.

In closing this long letter I want to express the appreciation of FCDA and myself to you and your organizations for your attendance here. There were problems to be sure, but, in turn, I am certain from your reports that the trip and the course were well worth while. I have requested the photographs and the news releases of interest to you. A certificate will be prepared by FCDA although there will be no "cum laude" on it. I personally enjoyed the association here with all of you and hope that out of this may come some lasting friendships.

Sincerely,

/s/ Vincent B. Lamoureux

Vincent B. Lamoureux
Project Director
Project 22.1

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