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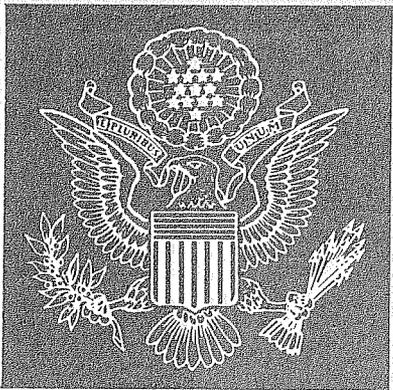
for fiscal year

1958

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ANNUAL REPORT

OF THE FEDERAL CIVIL DEFENSE ADMINISTRATION



EXECUTIVE OFFICE OF THE PRESIDENT
CIVIL AND DEFENSE MOBILIZATION

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1958

ANNUAL REPORT

of the

Federal Civil Defense Administration

for

FISCAL YEAR 1958



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF CIVIL AND DEFENSE MOBILIZATION

UNITED STATES GOVERNMENT PRINTING OFFICE : 1959

LETTER OF TRANSMITTAL

The Honorable, The President of the United States.

The Honorable, The President of the Senate.

The Honorable, The Speaker of the House of Representatives.

I have the honor of transmitting to you the eighth, and final, Annual Report of the Federal Civil Defense Administration. This report is submitted in conformity with section 406, Public Law 920, of the 81st Congress.

Respectfully,

LEO A. HOEGH, *Director.*

FEDERAL CIVIL DEFENSE ADMINISTRATION

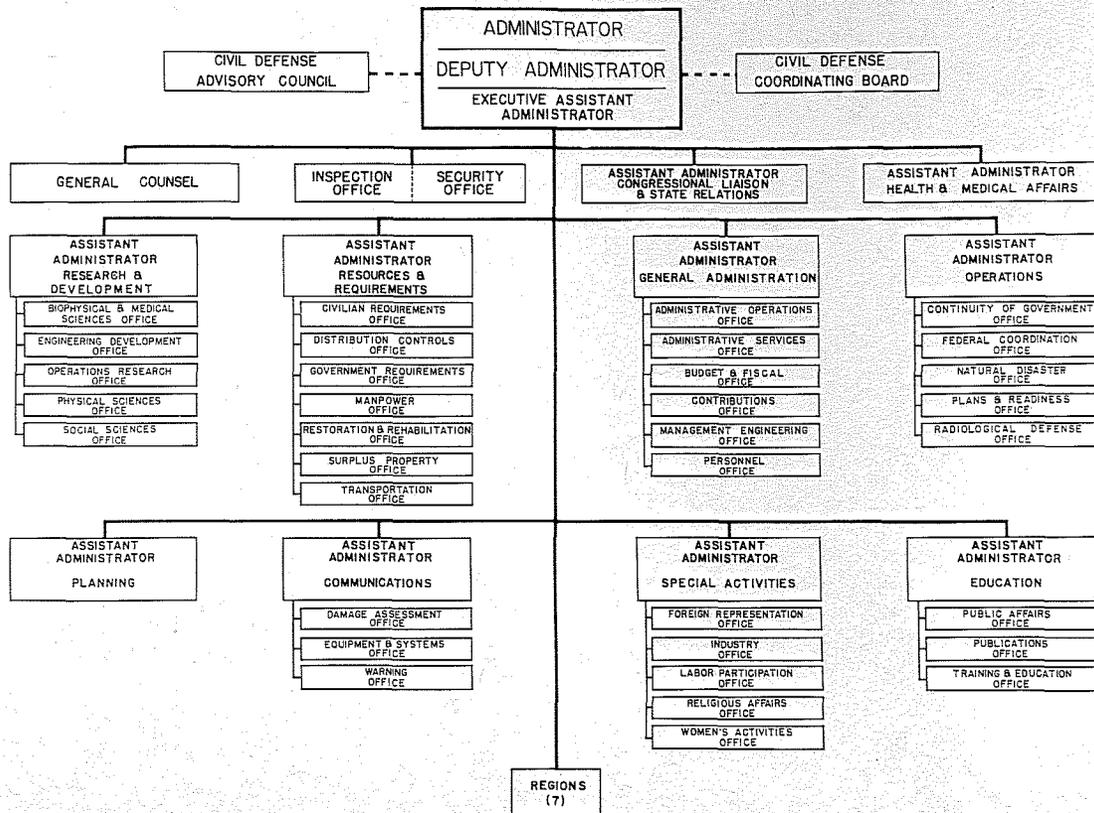
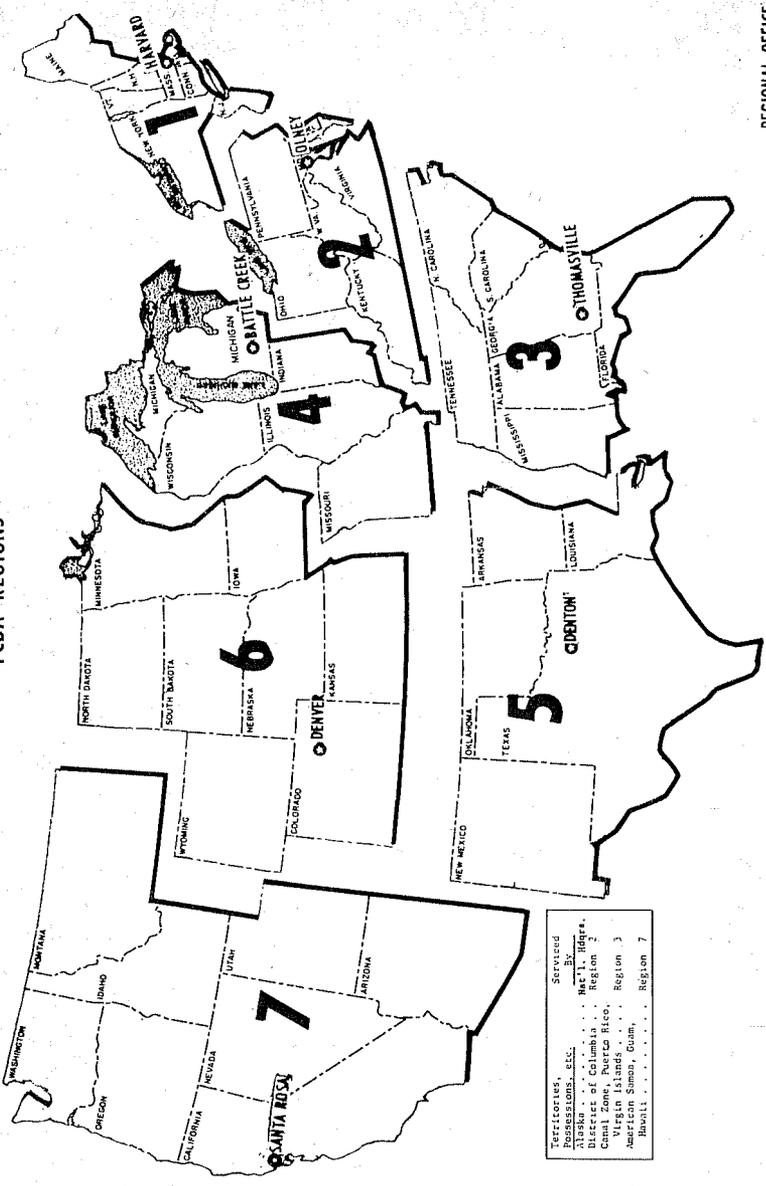


FIGURE 1.—Organization Chart.

FCDA REGIONS



Territories	Switzerland
Alaska	Guam
Alaska Possessions, etc.	Virgin Islands
Dist. of Columbia	Guam
Commonwealth of Puerto Rico	Guam
Virgin Islands	Guam
American Samoa, Guam	Guam
Hawaii	Guam

REGIONAL OFFICE

FIGURE 2.

FINANCIAL STATUS REPORT ¹
Fiscal year 1958, Federal Civil Defense Administration

Appropriation	End of Fiscal Year-1957 unexpended	Unobligated balance withdrawn	Appropriated	Expended	End of Fiscal Year-1958 unexpended
Operations.....	\$2,652,675.98	\$491,222.89	² \$17,259,610.67	\$14,517,016.07	\$4,903,147.69
Emergency supplies and equipment.....	39,243,859.52	1,481,655.71	² 3,190,181.00	32,374,912.61	8,577,472.20
Research and development.....	13,834,271.95	0	2,000,000.00	7,990,209.79	7,844,062.16
Federal contributions.....	25,029,803.02	2,176,646.84	17,000,000.00	8,324,433.11	31,528,723.07
Civil Defense functions of Federal agencies.....	606,903.84	43,197.83	0	533,470.38	28,235.43
Total.....	\$1,367,514.31	4,194,723.27	² 39,449,791.67	63,740,942.16	52,881,640.57

¹ Does not include the Civil Defense Procurement Fund, which is a revolving fund.

² Includes an amount from the Fiscal Year-1959 appropriation for advance procure-

ment of supplies and equipment, and reflects a transfer of \$119,779 from the Emergency Supplies and Equipment appropriation to the Operations appropriation.

FIGURE 3.

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PREFACE

This report, which covers the period from July 1, 1957, to June 30, 1958, is the final annual report of the Federal Civil Defense Administration.

On July 1, 1958, FCDA and the Office of Defense Mobilization were merged in a new Agency, the Office of Defense and Civilian Mobilization, a part of the Executive Office of the President. The title of the new Agency was later changed to Office of Civil and Defense Mobilization.

By Executive order, FCDA coordinated Federal assistance in major disasters under the Federal Disaster Act (Public Law 875, 81st Cong.). Agency activities in this program are reflected in a separate report to the Congress.

PLANNING

In civil as in military defense all activities support the operational plan—the blueprint for action. In 1958, after seven years during which changes in weapons and defensive concepts hampered civil defense operational planning, the plans began to come off the drafting boards.

A National Plan was developed. Basic State and local plans were nearing completion. And because planning is never actually ended, tests to improve the plans continued.

THE NATIONAL PLAN

One of the first steps taken by Mr. Hoegh when he became Administrator of the Federal Civil Defense Administration on July 19, 1957, was to start work on a National Plan for Civil Defense. After months of intensive work by many people, the basic Plan was completed in the spring of 1958.

For the Plan to reach that stage required the advice and guidance of a number of groups, and coordination not only within the Federal Government but also with State and local governments. For example, the presidentially-appointed Civil Defense Advisory Council spent a great deal of time on a detailed review of the Plan. The Medical Advisory Committee, Labor Advisory Committee, and the National Advisory Council on Rural Civil Defense all influenced the Plan's development. The Civil Defense Coordinating Board, which included representatives of all major Federal agencies, met five times for a word-by-word review of the Plan. The executive committees of the National Association of State and Local Civil Defense Directors and the Governors' Conference were among the organizations consulted. Administrator Hoegh personally briefed the President and the Cabinet on the Plan.

All of these groups, and others, were working toward a single objective—a simple but complete statement of the responsibilities and courses of action of the Federal Government, State and local governments, and the individual citizen for carrying out the civil defense mission in the United States. The mission: To protect life and property from the effects of attack by preparing for and by carrying out emergency functions to prevent, minimize, and repair injury and damage.

Although the basic Plan was completed in the spring, it was not distributed immediately. The pending merger of the Federal Civil Defense Administration and the Office of Defense Mobilization required that the Plan be expanded to reflect resource mobilization for nonmilitary defense.¹ A later draft of the Plan entitled "The National Plan for Civil Defense and Defense Mobilization" was scheduled for distribution early in FY-1959.

From its inception the National Plan was keyed to the principle that the Federal Government is responsible for the overall direction and coordination of civil defense action. Yet, the Federal Civil Defense Act of 1950 specifically stated that the "responsibility for civil defense shall be vested primarily in the several States and their political subdivisions." A change in the basic law was needed to make the National Plan effective.

The change came in the form of H. R. 7576, introduced in May 1957 by Representative Carl T. Durham (Sixth District, North Carolina). His bill resulted from hearings on Administration-sponsored legislation which was transmitted to the Congress in February 1956, and introduced as H. R. 4910 and H. R. 4911, 85th Congress. H. R. 7576 proposed that "the responsibility for civil defense shall be vested jointly in the Federal Government and the several States and their political subdivisions." Also under the terms of the bill the Federal Government, for the first time, would be allowed to help pay essential personnel and administrative costs of State and local civil defense organizations.

Supporters of the bill saw it as a major factor in promoting unified civil defense planning and action.²

STATE AND LOCAL PLANS

While the Federal Government worked on a National Plan, States and localities continued to develop operational plans under the federally financed Survival Projects Program, which was started in 1955 with an initial appropriation of \$10 million.

Under the program, 45 States, 3 Territories, and 173 metropolitan areas were conducting studies leading to the development of detailed operational plans.

At the end of the fiscal year, 26 States and one Territory had basic operational plans which were approved by FCDA. They were Alabama, Arkansas, Colorado, Connecticut, Florida, Georgia, Illinois,

¹ The merger of FCDA and ODM into a new Agency, the Office of Defense and Civilian Mobilization, a part of the Executive Office of the President, took effect on July 1, 1958. The Agency title was later changed to Office of Civil and Defense Mobilization (Public Law 85-763, August 26, 1958).

² The bill became Public Law 85-606, signed by the President on August 8, 1958.

Kansas, Kentucky, Maine, Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Dakota, Tennessee, Utah, Vermont, and West Virginia.

Most of the plans are expected to be completed during the next fiscal year, but operational planning at the State and local level will continue long after the basic plans are developed.

One important offshoot of the Survival Projects Program was the development of small but competent staffs for State and local civil defense operational planning. Throughout the Nation more than 1,000 persons have been working on State and local civil defense operational plans under the program.

TESTS AND EXERCISES

Among the tests and exercises held during the year was Sentinel II, a "command post" exercise at FCDA Headquarters in December 1957. Civil defense directors of 7 States, 7 cities, and representatives of 20 Federal agencies worked on a simulated problem of formulating actions to insure an adequate food supply for the Nation following a nuclear attack.

Operation Alert 1957 and Phase I (the "attack" phase) of Operation Alert 1958 were conducted during the fiscal year. Many States and cities used the exercises to test and improve civil defense operational plans developed under the Survival Project.

The exercises showed that:

1. More State and local governments are accepting responsibilities to prepare for the emergency of nuclear attack.
2. More Federal agency field offices understand their role in emergency operations.
3. An urgent need exists for effective defense against radioactive fallout.

One important result of the exercises was a plan to expand the Agency's medical stockpile system by the development of a 10-year medical stockpile program. In addition, a growing concern for the serious health and medical care problems that would result from a nuclear attack led to the recommendation that the responsibility for developing civil defense health and medical care plans be assigned to the Department of Health, Education, and Welfare.

The exercises also showed the need for accelerated emergency resource mobilization planning in other fields—manpower, food, fuel, transportation, to name a few. It was probably this factor more than any other that most clearly demonstrated the need for the merger of FCDA and ODM into an Agency within the Executive Office of the President.

CONTINUITY OF GOVERNMENT

One of the top priority programs in the Agency during the year was aimed at preserving and strengthening civil leadership in the event of nuclear attack.

The program was entitled Continuity of Government. Potential audience: more than 100,000 governmental units in the United States—units that form the keystone of civil defense.

The program was based on the premise that civil defense is the inherent responsibility of Federal, State, and local governments, and that civil defense planning should increase the ability of governments to carry out their emergency responsibilities.

Developed with the assistance and advice of hundreds of State and local officials and governmental organizations, the program was first announced by the Administrator at the annual meeting of the United States Civil Defense Council in Detroit on September 5, 1957.¹ The major objectives:

1. Establish emergency lines of succession for top executives, legislators, the judiciary, and other key personnel.
2. Preserve essential records.
3. Establish emergency locations for government operations.
4. Make full use of all governmental personnel, facilities, and equipment for emergency operations.

A Continuity of Government Office was established in the Agency on November 1, 1957, to administer and promote the program.

Agency officials personally discussed the program with 32 governors during the year, particularly emphasizing the need to establish emergency lines of succession within government. Special briefings stressing the need for lines of succession were given the executive secretaries of the governors in Regions 2, 3, 4, and 5. By the end of the year high officials of nearly every State had become familiar with the program, and it had received the support of such organizations as the Governors' Conference, National Association of County Officials, United States Conference of Mayors, American Municipal Association, United States Civil Defense Council, National Association of State and Territorial Civil Defense Directors, and the American Legion.

¹ The program was outlined in FCDA Advisory Bulletin No. 216, *Continuity of State and Local Government*, September 19, 1957.

LINES OF SUCCESSION

When surveys showed that State legislation, and in some cases constitutional amendments, would be required to establish emergency lines of succession at the State and local level, FCDA urged each State to set up a legislative committee or other appropriate group to draft the necessary legislation. To assist these committees the Agency worked on sample or "model" legislation and constitutional amendments.

By June 1958, FCDA had completed sample legislation covering lines of succession for the executive and judicial branches of government, and Columbia University had completed, under contract with FCDA, sample constitutional amendments for all three branches of government.² This material was scheduled to be submitted to the Committee on Suggested State Legislation of the Council of State Governments early in fiscal year 1959. If approved by the Committee and the Council, it will be included in the Council's "Recommended State Legislation."

By the end of the year official studies on establishing emergency lines of succession were under way in more than 30 States.

PRESERVING ESSENTIAL RECORDS

A preliminary draft of a manual on preserving essential State and local government records was written for FCDA by an archivist of the National Archives and Records Services. The draft, developed in consultation with State and local government officials, was under review at the end of the year.

EMERGENCY LOCATIONS FOR GOVERNMENT

The Agency obligated more than \$2.5 million in Federal matching funds during the fiscal year for the construction of control centers (emergency operations centers) in California, Massachusetts, and Illinois. However, relatively few State and local governments have control centers that could withstand the probable effects of a nuclear attack. Construction cost is a major factor. To help alleviate the situation, the Agency, at the close of the fiscal year, was revising its criteria for approving Federal matching funds for control center construction. For example, immediate costs to State and local governments were to be reduced by permitting construction to be phased over several fiscal periods, and by permitting a maximum calculated risk

² Columbia University (Columbia University Legislative Drafting Research Fund) also was under contract with the Agency to provide early in FY-1959 sample legislation on lines of succession for State and local legislatures.

in the design of the protective construction required. In addition, the Agency encouraged States and localities to incorporate control centers in new city halls, State office buildings, and other similar buildings.

USING GOVERNMENT PERSONNEL, FACILITIES

The Agency urged State and local governments to make full use of government personnel, facilities, and equipment in emergency operations, and to enroll and train volunteers as auxiliaries to existing government departments. Survival plans were being evaluated on the basis of the application of this principle.

At the Federal level, the delegation of civil defense responsibilities to other Federal agencies is a part of the plan to make full use of government personnel and facilities. No funds were appropriated by the Congress for the delegations program in FY-1958, but prior to that time 5 delegations had been made to 7 Federal agencies.

RADIOLOGICAL DEFENSE

Fallout, a silent weapon that would endanger every part of the country after a nuclear attack, received increased attention by the Agency in another priority program—Radiological Defense. The program was made up of a number of parts—operational planning, shelter, instrumentation, monitoring, training, public information, and research.

PLANNING

A radiological defense plan was developed as an annex to the National Plan for Civil Defense.¹ The plan assigned radiological defense responsibilities to Federal, State, and local governments, and provided the guidelines for the development of State and local radiological defense plans. Additional guidelines were developed through a New England study for the Agency by Technical Operations, Incorporated, of Burlington, Mass. The study resulted in a draft manual, *Radiological Defense Planning Guide*, which was under review by the Agency at the end of the year.

SHELTER

A 5-point National Policy on Shelters was announced by the Administrator on May 7, 1958. The policy, which directly supported the Radiological Defense Program, placed joint responsibility for fallout protection on the Federal Government and the American people. The policy was based on the recognition that, in the event of nuclear attack, "fallout shelters offer the best single nonmilitary defense measure for the protection of the greatest number of our people."

The text of the policy statement follows:

The Administration has conducted exhaustive studies and tests with respect to protective measures to safeguard our citizens against the effects of nuclear weapons. These several analyses have indicated that there is a great potential for the saving of life by fallout shelters. In the event of nuclear attack on this country, fallout shelters offer the best single nonmilitary defense measure for the protection of the greatest number of our people.

Furthermore, a nation with adequate fallout protection is a nation which would be more difficult to successfully attack. This fact alone would substantially lessen the temptation of an aggressor to launch an attack.

¹ Later title: *The National Plan for Civil Defense and Defense Mobilization* (see ch. 1, Planning).

The Administration's national civil defense policy, which now includes planning for the movement of people from target areas if time permits, will now also include the use of shelters to provide protection from radioactive fallout.

To implement this established policy, the Administration will undertake the following action:

1. **The Administration will bring to every American all of the facts as to the possible effects of nuclear attack, and inform him of the steps which he and his State and local governments can take to minimize such effects.**

The present civil defense programs for information and education will therefore be substantially expanded in order to acquaint the people with the fallout hazard and how to effectively overcome it. The public education program will include information on:

- (a) Nuclear weapons effects on people, plants, and animals;
 - (b) The provision of effective fallout protection, how to construct a fallout shelter, and how to improvise effective shelter;
 - (c) Necessary measures for the protection of food and water;
 - (d) How to carry out radiological decontamination; and
 - (e) What governments—Federal, State, and local—are themselves doing about fallout protection.
2. **The Administration will initiate a survey of existing structures on a sampling basis, in order to assemble definite information on the capabilities of existing structures to provide fallout shelter, particularly in larger cities.**

Many facilities such as existing buildings, mines, subways, tunnels, cyclone cellars, etc., already afford some fallout protection. Action will be taken to accurately determine the protection afforded by all such facilities in order to make maximum use of them.

3. **The Administration will accelerate research in order to show how fallout shelters may be incorporated in existing, as well as in new, buildings—whether in homes, other private buildings, or governmental structures. Designs of shelters will be perfected to assure the most economic and effective types.**
4. **The Administration will construct a limited number of prototype shelters of various kinds, suitable to different geographical and climatic areas. These will be tested by actual occupancy by differing numbers of people for realistic periods of time. They will also have practical peacetime uses. Some of the prototype structures will be incorporated in:**
 - (a) Underground parking garages.
 - (b) Understreet shelters.
 - (c) Subways.
 - (d) The Federal highway program—patrol and maintenance facilities.
 - (e) Additions to existing schools and new schools, including such facilities as cafeterias, assembly space and classrooms.
 - (f) Additions to existing hospitals and new hospitals, including such facilities as cafeterias, visitors' and convalescent rooms, and reserve areas.
 - (g) Industrial plants.
 - (h) Commercial buildings.
 - (i) Family residences and apartments, including such facilities as bathrooms, garages, basements, and recreation rooms.

5. The Administration will provide leadership and example by incorporating fallout shelters in appropriate new Federal buildings hereafter designed for civilian use.

Federal example is an indispensable element to stimulate State, local government, and private investment for fallout shelters. Community use of shelters in these new buildings is contemplated.

There will be no massive federally-financed shelter construction program.

With reference to blast shelters there are still difficult questions, having to do with the amount of time that would be available to enter the shelters, the uncertainty of missile accuracy and the effectiveness of our active defense. There is no assurance that even the deepest shelter would give protection to a sufficient number of people to justify the cost. In addition, there may not be sufficient warning time in view of the development of missile capabilities to permit the effective use of blast shelters.

Our chief deterrent to war will continue to be our active military capability. Our active military defense may eventually have the capability of effectively preventing an enemy from striking intended targets. Highest priority is to be given to the development of this capability.

Common prudence requires that the Federal Government take steps to assist each American to prepare himself—as he would through insurance—against any disaster to meet a possible—although unwanted—eventuality. The national shelter policy is founded upon this principle.

This approach will provide the stimulation necessary for the American people to make preparations for fallout protection. The Federal Government will also work with State and local governments and with private industries to expedite and facilitate the provision of fallout shelter.

The Administration believes that when the American people fully understand the problem that confronts them, they will rise to meet the challenge, as they have invariably done in the past. This is particularly true now that the national policy has been declared, backed up with Federal example, Federal leadership, and Federal guidance. The President has directed me to put this policy into effect.

Protection of our people is not new in the United States. When a free America was being built by our forebears, every log cabin and every dwelling had a dual purpose—namely, a home and a fortress. Today, the citizen should be called upon to make the same contribution as our forebears—not for building a free America, but for sustaining a free America.

INSTRUMENTATION

The Agency more than doubled the number of radiological instruments distributed to States and Territories for training and operational preparedness. By the end of the year more than 76,000 instruments had been distributed to States and Territories as compared with 35,000 at the end of FY-1957. The total included more than 40,000 survey meters, 24,000 dosimeters, and 11,000 dosimeter chargers.

In addition, more than 300,000 instruments were stored in Agency warehouses for rapid distribution in the event of a national emergency, and the Agency loaned or transferred nearly 50,000 instru-

ments to 14 other Federal agencies to improve the operational readiness of the Federal Government.

A growing problem in instrument maintenance was eased with the start of a new maintenance program, and the assignment of maintenance technicians to 11 warehouses used by the Agency for instrument storage.

MONITORING

A program was started to establish a Federal network of radiological monitoring stations which could provide hourly reports on the level of fallout radiation across the Nation after a nuclear attack. The network will be composed of existing Federal personnel and facilities. Initial aim of the program is to establish radiological monitoring stations at 700 fixed field facilities of the United States Weather Bureau and the Civil Aeronautics Administration. During FY-1958 those two agencies began equipping their field facilities with radiological survey instruments, and training field personnel to use the instruments.

The Agency plans to expand this network by using the personnel and facilities of other Federal agencies. The aim is to have at least one Federal monitoring station in each of the more than 3,000 counties in the United States.

In addition, the Agency expanded its radiological instrument (see above) and training programs (see below, and ch. 5, Training and Information) to assist States and localities in preparing for radiological monitoring.

TRAINING, INFORMATION, AND RESEARCH

As the result of Agency training programs some 2,500 instructors in radiological monitoring and 75,000 radiological meter readers had been trained by the end of the year.

In addition, a radiological defense high school program was developed in cooperation with the Office of Education, departments of education in the States, and State civil defense directors to:

1. Help high schools incorporate radiological defense education into their science courses, and
2. Improve the geographical distribution of radiation detection instruments.²

Scheduled to start early in FY-1959, the program will include the distribution of a specially designed radiological instrument kit to 15,000 high schools throughout the United States. The kit consists

²The high school program is *not* an attempt to train teen-age radiological monitors for duty during a national emergency.

HIGH SCHOOL RADIOLOGICAL INSTRUMENT KIT



1. RADIOACTIVE SOURCE

2. MEDIUM RANGE SURVEY METER

3. LOW RANGE SURVEY METER

4. HIGH RANGE SURVEY METER

5. DOSIMETER CHARGER

6. DOSIMETER

FIGURE 4.

of 4 survey meters, 4 dosimeters, 1 dosimeter charger, 2 containers of a low-intensity radiation source, batteries, and an instruction manual on using the instruments.

The Agency carried out expanded public information and research programs in radiological defense. Additional information on radiological training and public information activities may be found in Chapter 5, Training and Information. For information on radiological research see Chapter 6, Research.

EMERGENCY SYSTEMS AND EQUIPMENT

Adequate civil defense preparations cannot be made with money and hardware alone. Dedicated people are needed. But those who do the job must have tools—good tools.

In FY-1958 more tools were made available to them. No one would argue that the amount was sufficient, but significant progress was made.

This "hardware" section of the Annual Report describes progress in the warning, communications, stockpiling, Federal contributions, and surplus property programs.

WARNING

Seventy-six warning points were added to the National Warning System during the year, raising the total number of warning points across the Nation to 276. Plans were being made to expand this network to 500 warning points as part of the groundwork for faster and more direct warning of enemy attack.

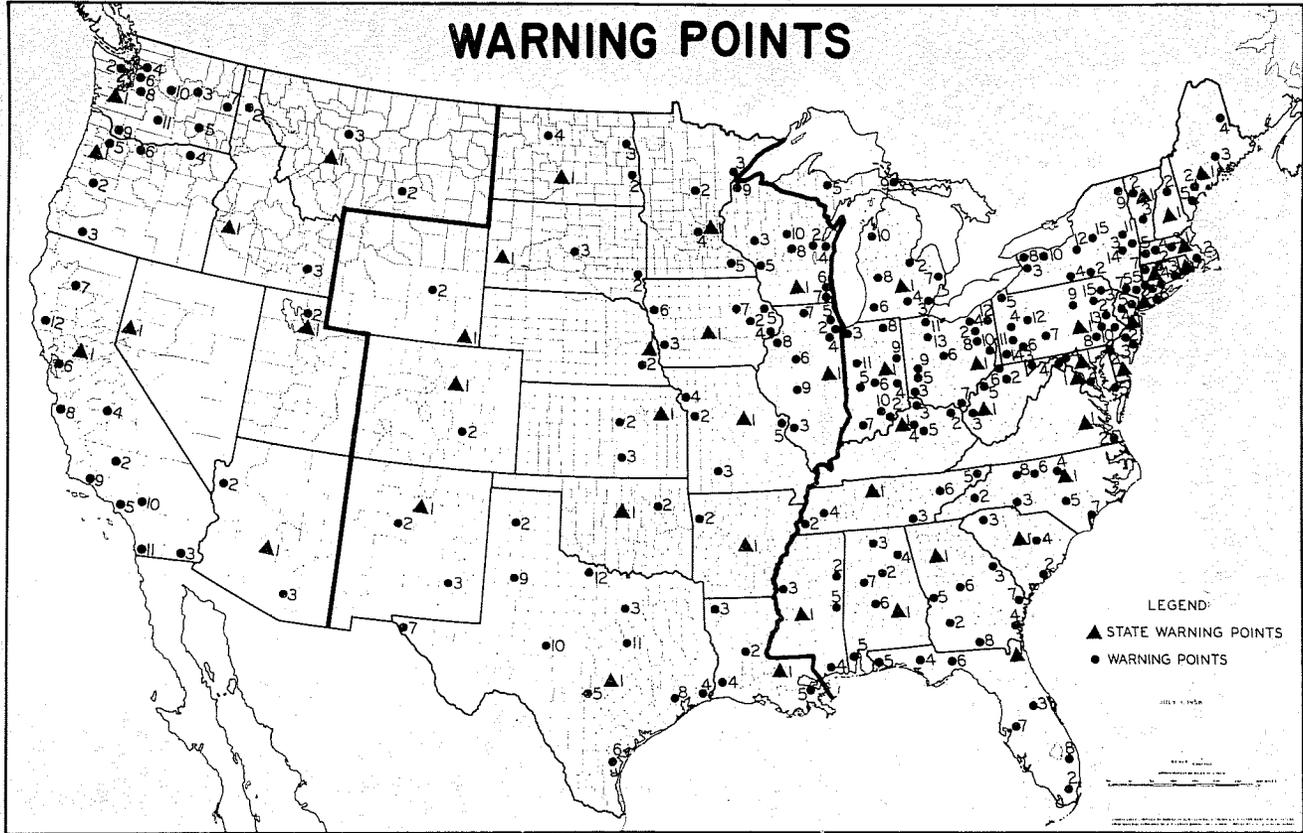
At the end of the year the network consisted of 4 FCDA Warning Centers at major Air Force installations,¹ 49 State Warning Points (including Washington, D. C.), and 227 other warning points. The network was capable of sending a warning to all 276 warning points in about 15 seconds.²

This network is tied to the many outdoor warning systems (usually siren systems) installed by municipalities to warn the public of an enemy attack.³ A total of 134 cities are considered to have virtually complete coverage with their outdoor warning systems. However, there is still a problem of warning people in their homes or other buildings where the outdoor devices may not be heard. Research was continued during the year to develop internal warning systems by making use of existing power lines or telephone facilities.

¹ FCDA National Warning Center at North American Air Defense Command Headquarters, Colorado Springs, Colo.; FCDA Eastern Warning Center at Headquarters, Eastern NORAD Region, Stewart Air Force Base, N. Y.; FCDA Central Warning Center at Headquarters, Central NORAD Region, Richards-Gebaur Air Force Base, Mo.; FCDA Western Warning Center at Headquarters, Western NORAD Region, Hamilton Air Force Base, Calif.

² The Federal Government pays all communications costs of the network, but States and localities supply the personnel for the 276 warning points.

³ The Federal Government pays half the cost of installing and maintaining municipal outdoor warning systems.



U. S. DEPARTMENT OF AGRICULTURE

Jan. 1, 1935

BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 5.

Work continued on the installation of a special warning network in the Washington, D. C., metropolitan area. A system of sirens, scheduled to be completely installed in fiscal year 1960, will be capable of covering an area within a 20-mile radius of the center of the District. Alternate facilities will permit control of the sirens by each political subdivision within the area, or from a classified location outside the area.

COMMUNICATIONS

The primary system of operational communications for the Agency is National Communications System No. 1 (NACOM 1). It consists of about 20,000 miles of leased wire facilities—private line telephone and teletypewriter services—connecting the Agency's Battle Creek office (Lowpoint) with a classified location outside of Washington, with the Agency's Regional Offices, and State civil defense offices.

The circuits of NACOM 1 can be used for both telephone (voice) or teletypewriter communication. The principal purpose of the system, however, is to provide a record communications media. Therefore the circuits are used primarily for teletypewriter communication.

During the fiscal year the circuits were improved between Lowpoint and the classified location. The speed of transmission was increased from 60 words a minute to 75 words a minute. In addition, special equipment was installed at the Regional Offices for handling classified messages. The equipment is similar to that previously installed at Lowpoint and the classified location.

Preliminary design work was completed on a system of radio backup to NACOM 1. This radio network, scheduled for installation in FY-1959, will be called NACOM 2, and will provide for 2-way radio communication between the Agency's Battle Creek office, Regional Offices, and the classified location. Extension of NACOM to the State level is planned for fiscal years 1960 and 1961.

At the State and local level, the Radio Amateur Emergency Services (RACES) program continued to expand. About 1,000 State, area, county, and city RACES operational plans were approved by the end of the year. Only two States did not have RACES plans, but several localities in each of these States did have accepted plans. All Regional Headquarters of the Agency had radio equipment in use at the start of the year for contact with State RACES networks, and additional equipment was authorized during the year to improve this system.

STOCKPILING

The Agency collected and analyzed a considerable amount of data to determine the feasibility, amount, and cost of stockpiling essential

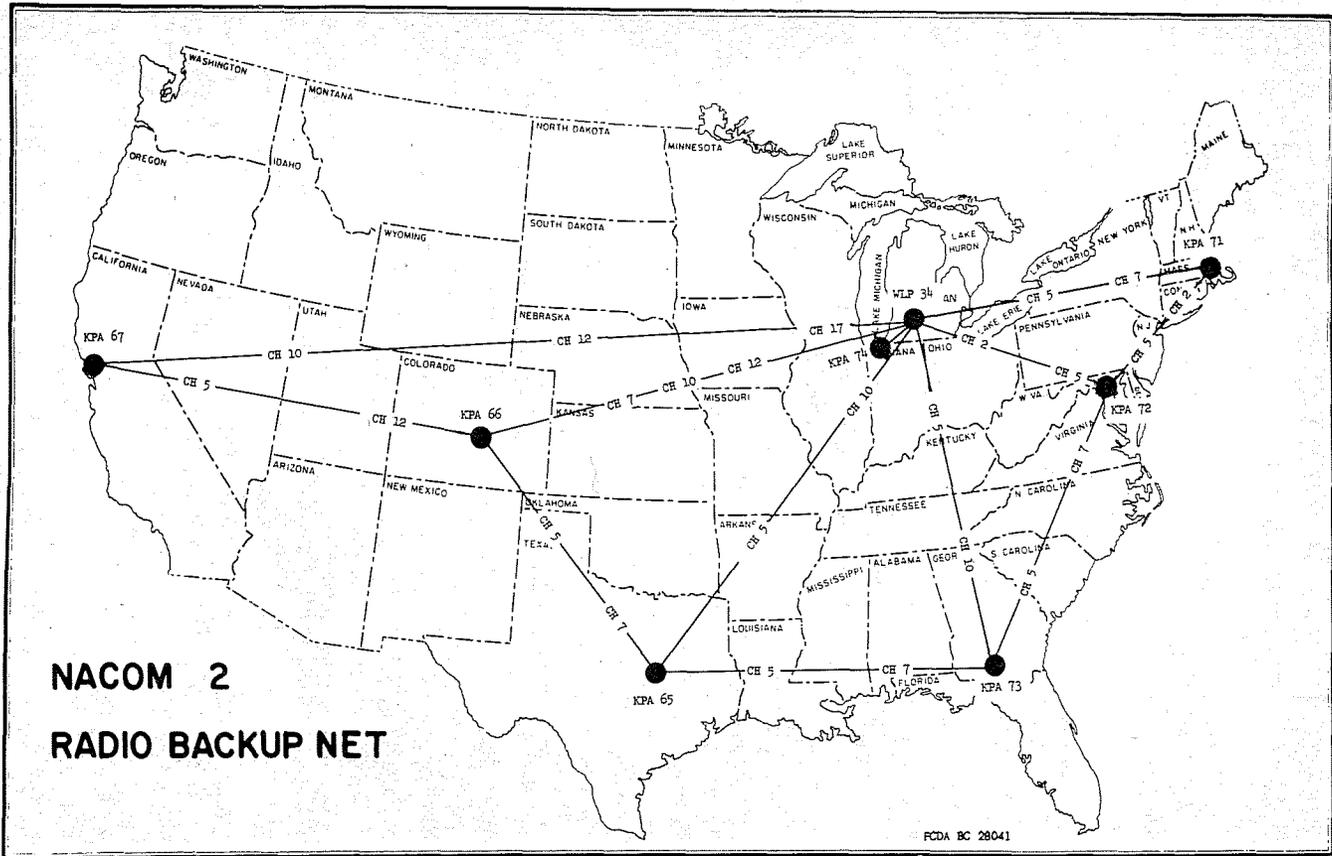


FIGURE 6.

emergency items in the major categories of medical equipment and supplies, food, and engineering supplies for different types of attack conditions. The effect that the Nation's transportation system would have on the location of emergency supplies was one of the important segments of the study which will provide the basic information needed for a long-range expansion of the Agency's stockpiling program.

Although no money was appropriated to purchase additional stockpile items in FY-1958, a little over \$3 million was appropriated to store and maintain existing stocks.

As part of the maintenance program certain antibiotics and vaccines that were about to become outdated were replaced from manufacturers' stocks at a fraction of their original cost. In addition, 32,807 units of outdated plasma were reworked by various contractors into serum albumin at about 25 percent of the original cost.

The Agency established 10 stockpile maintenance service shops and 11 radiological maintenance service shops at its warehouses to maintain emergency hospital equipment and radiological defense instruments.

At the end of the year the Agency had stockpiled medical and radiological defense items valued at about \$200 million, and engineering items (including generators, chlorinators, water purifiers, pumps, and pipe) valued at about \$7 million.

The breakdown for major medical and radiological defense items was as follows: 932 emergency civil defense hospital units; ⁴ 10,317,500 burn dressings; 3,187,000 blood recipient sets; 1,580,000 units of blood derivatives (plasma and serum albumin); 4,550,000 units of plasma expanders; 32,500 gas masks; 6,188,000 doses of atropine; 57,571,000 doses of vaccines and antitoxins (part in manufacturers' storage); 1,584,000 paper blankets; 308,000 liters; 238,000 radiological dosimeters, and 159,000 radiological survey meters.⁵

FEDERAL CONTRIBUTIONS

Federal matching funds contributed to States, Territories, and possessions for civil defense programs amounted to 46¢ per capita in FY-1958 as compared with 38¢ per capita in 1957—an increase of more than 20 percent.

From the start of the program in FY-1952 through FY-1958 more than \$80 million in matching funds has been contributed by the Federal Government. At least an equal amount has been spent by States and localities.

⁴ Stored in FCDA, State, and local sites. In addition, about 95 percent of the material for an additional 1,000 emergency hospital units had been delivered and assembly started.

⁵ Includes instruments on loan or grant to States.

In the early years of the program Federal contributions were used primarily for health and special weapons defense items. Recently, however, States and localities have used most of the money to buy communications equipment. The trend was continued in 1958 with about 54 percent of the contributions money being used to buy communications equipment.

From the start of the program through FY-1958, about 70 percent of the contributions went to States in the east and west—Regions, 1, 2, and 7.

FEDERAL CONTRIBUTIONS PROGRAM SUMMARY

*Dollar Value of Federal Funds Obligated*¹

Region and State	FY-1952— FY-1958	FY-1958	Region and State	FY-1952— FY-1958	FY-1958
<i>Total</i>	\$80,172,895	\$16,769,660	<i>Region 5</i>	\$4,807,397	\$1,721,953
<i>Region 1</i>	25,964,545	5,095,867	Arkansas.....	488,278	175,881
Connecticut.....	1,921,653	279,433	Louisiana.....	944,121	284,820
Maine.....	647,480	164,455	New Mexico.....	15,420	8,093
Massachusetts.....	5,181,839	2,533,120	Oklahoma.....	921,388	287,447
New Hampshire.....	245,667	60,301	Texas.....	2,438,190	965,112
New Jersey.....	2,033,835	151,210	<i>Region 6</i>	3,003,990	1,047,361
New York.....	15,356,061	1,830,306	Colorado.....	410,468	95,345
Rhode Island.....	367,281	29,271	Iowa.....	218,463	63,060
Vermont.....	210,729	47,771	Kansas.....	506,636	136,616
<i>Region 2</i>	17,070,999	1,973,507	Minnesota.....	1,343,191	584,646
Delaware.....	821,857	36,754	Nebraska.....	293,510	81,222
District of Columbia.....	195,312	982	North Dakota.....	65,263	38,722
Kentucky.....	439,824	56,679	South Dakota.....	87,044	17,352
Maryland.....	1,655,680	236,321	Wyoming.....	79,475	30,398
Ohio.....	4,761,527	695,814	<i>Region 7</i>	12,700,832	2,133,220
Pennsylvania.....	8,202,475	795,620	Arizona.....	286,426	21,053
Virginia.....	816,881	53,308	California.....	9,071,128	1,605,006
West Virginia.....	177,443	98,029	Idaho.....	153,967	32,883
<i>Region 3</i>	5,610,603	1,293,909	Montana.....	108,904	26,160
Alabama.....	770,834	160,377	Nevada.....	54,977	29,581
Florida.....	1,055,950	394,295	Oregon.....	1,062,089	106,637
Georgia.....	1,438,889	250,979	Utah.....	165,279	17,196
Mississippi.....	222,939	11,588	Washington.....	1,798,062	294,704
North Carolina.....	897,051	272,765	<i>Territories and Posses-</i>		
South Carolina.....	147,679	43,156	<i>sions</i>	1,572,872	243,012
Tennessee.....	1,077,564	160,749	Alaska.....	348,230	805
<i>Region 4</i>	9,441,757	3,260,831	American Samoa.....		
Illinois.....	2,131,619	537,137	Canal Zone.....	77,067	64,273
Indiana.....	918,332	320,790	Guam.....	14,233	
Michigan.....	4,163,688	2,047,854	Hawaii.....	414,282	17,296
Missouri.....	1,111,823	148,793	Puerto Rico.....	706,689	160,638
Wisconsin.....	1,116,295	206,257	Virgin Islands.....	12,371	

¹ Adjusted for firm contracts, cancellations, and amendments as of June 30, 1958.

SURPLUS PROPERTY

Since 1957, when Congress authorized making Federal surplus property available to States for civil defense purposes, surplus equipment originally costing more than \$35.6 million has been donated for this purpose. Most of the total (\$31 million) was donated in FY-1958.

Motor vehicles and trailers, electrical equipment, fire fighting and rescue equipment, construction and excavating equipment, communications equipment, tractors, engines, and hand tools made up more than 70 percent of the surplus equipment donated to States under the program.

SURPLUS PROPERTY RECEIVED BY STATES

As of June 30, 1958

Region and State	Number of transactions	Total value (acquisition cost)	Region and State	Number of transactions	Total value (acquisition cost)
<i>Total</i>	19,586	\$35,647,306	<i>Region 4—Continued</i>		
<i>Region 1</i>	3,437	6,518,894	Indiana	235	\$674,192
Connecticut	965	1,152,175	Michigan	1,593	2,489,410
Maine	385	607,562	Missouri	277	525,728
Massachusetts	548	1,807,999	Wisconsin	139	430,598
New Hampshire	223	102,664	<i>Region 5</i>	1,347	3,199,840
New Jersey	116	502,334	Arkansas	396	905,403
New York	993	2,047,194	Louisiana	174	676,260
Rhode Island	138	155,714	New Mexico	2	9,011
Vermont	69	143,252	Oklahoma	168	484,737
<i>Region 2</i>	2,435	2,700,438	Texas	607	1,124,429
Delaware	110	78,356	<i>Region 6</i>	1,281	2,458,920
Kentucky	119	335,185	Colorado	415	947,269
Maryland	648	661,110	Iowa	19	21,122
Ohio	30	191,627	Kansas	148	358,069
Pennsylvania	1,286	832,544	Minnesota	400	690,216
Virginia	210	564,473	Nebraska	90	180,252
West Virginia	32	37,143	North Dakota	7	5,964
<i>Region 3</i>	3,279	6,639,300	South Dakota	6	109,465
Alabama	791	1,361,092	Wyoming	196	146,563
Florida	600	1,365,525	<i>Region 7</i>	4,853	8,401,435
Georgia	775	1,372,712	Arizona	62	139,387
Mississippi	(*)		California	3,649	5,836,638
North Carolina	866	1,422,730	Idaho	106	186,609
South Carolina	53	153,397	Montana	14	36,218
Tennessee	70	233,467	Nevada	33	52,228
Puerto Rico	124	730,377	Oregon	339	256,716
<i>Region 4</i>	2,954	5,728,479	Utah	121	876,268
Illinois	710	1,599,551	Washington	514	944,943
			Hawaii	15	72,428

*Started participation June 1958.

TRAINING AND INFORMATION

The best planning, research, and operational equipment will fall short of providing an adequate civil defense unless people understand what has to be done, and are trained to do their part of the job. The Agency's training and public information programs during the year were aimed at strengthening this vital link in civil defense preparedness.

TRAINING

Agency instructors conducted 43 training courses during the year which were attended by 1,163 persons. This raised to 15,550 the total number of persons who have received instruction in Agency training schools.

Four schools were operated: the Staff College, oldest school of the Agency; the Radiological Defense School; Rescue Instructor Training Center,¹ and a newly established Eastern Instructor Training Center at Brooklyn, N. Y.

Emphasis was given to radiological defense training. More than 400 persons attended 15 courses presented by the Radiological Defense School at Battle Creek, in each Agency Region, and at the new Eastern Instructor Training Center. The school's most frequently given course was "Radiological Monitoring for Instructors," which was given 12 times to a total of 377 persons. The course is designed to train Federal, State, and local instructors who will train others in radiological defense monitoring. Other courses given by the school were the "Radiological Defense Officer" course, "Radiological Aspects of Nonmilitary Defense," and "Radiological Instrument Operation."

The Staff College gave 8 courses to a total of 263 persons. The courses were "Elements of Nonmilitary Defense for State and Local Officials," given three times; "State and Local Action in Natural Disasters," given twice; and "Emergency Management and Operations for State and Local Officials," "Emergency Management and Operations for County Officials," and "Federal Action in Major Disasters," each given once.

Although most Staff College instruction is done at Battle Creek, Mich., some courses are given by a traveling team. In 1958, two

¹ The Rescue Instructor Training School at Olney, Md., was closed at the end of the fiscal year; but rescue training was scheduled as part of the curriculum at the Eastern Instructor Training Center.

courses, "Elements of Nonmilitary Defense for State and Local Officials," and "Local Action in Natural Disasters," were given to a total of 55 persons in Arkansas. In addition, 9 States gave 16 civil defense courses to a total of 772 persons as a result of contracts made with the Staff College.

The new Eastern Instructor Training Center was opened on June 9, 1958.² The center will be used to train instructors who will return home and train others in the procedures and skills required for effective emergency operations. Plans were made during the year to open a similar center in the west.

The Nation's school systems are a major resource available to advance the concepts of civil defense, and the Agency worked with the United States Office of Education and recognized national education organizations to make use of this resource. For example, as the result of a Civil Defense Education Project in the United States Office of Education, lectures on aspects of radiological defense were given at 55 seminars attended by some 3,000 high school science teachers during fiscal years 1957 and 1958.³ Also, the Office of Education prepared a manual for the Agency, *Nuclear Science Teaching Aids and Activities*, which was scheduled for publication in FY-1959 and distribution to high school science teachers, particularly those participating in the Agency's new radiological defense high school program (see ch. 3, Radiological Defense). Cooperating with the Agency, the Adult Education Association and the National School Boards Association prepared civil defense publications, making a total of five publications developed to describe the civil defense responsibilities of specific educational groups. Some 150,000 copies of the new publications, *Civil Defense for Adult Americans* and *School Boards Plan for Disaster Problems*, were distributed. In addition, a contract was made with the American Association of School Administrators to have that organization prepare a civil defense support publication in FY-1959. Another contract was negotiated with the George Peabody College for Teachers, Nashville, Tenn., to develop civil defense curriculum materials for use by teacher training institutions throughout the Nation.

INFORMATION

The Agency produced 30 new publications, 3 motion pictures, 11 television and radio station break announcements, 69 magazine articles, and 91 news releases as part of its public information program.

² The first course, "Radiological Monitoring for Instructors," was attended by 29 persons.

³ The seminars are sponsored annually by the National Science Foundation, and are held during the summer months.

The most popular single item of public information was a wallet-size Civil Defense Preparedness card, which describes the attack warning signals and the main actions families should take to prepare themselves for a possible enemy attack.

As a direct result of a brief mention of this card by the Administrator on the Dave Garroway television show in March 1958, thousands of requests were made for it. By the end of the fiscal year more than 25 million cards had been distributed throughout the Nation.

The wallet card and 4 other publications accounted for more than 36 million copies of publications distributed by the Agency during the year. The others: *Operation Survival*, an illustrated booklet for school children (4 million copies distributed), *Facts About Fallout Protection*, a public leaflet (more than 3.7 million copies), *Family Shelters Against Radioactive Fallout*, a technical bulletin (more than 1.8 million copies), and *Home Protection Exercises*, a public booklet (more than 1.7 million copies).

In addition, the Agency developed a *Handbook for Emergencies*, which was scheduled to be distributed by the Boy Scouts of America on October 11, 1958, to more than 40 million homes.

More than 3.5 million persons saw civil defense exhibits prepared by the Agency. The exhibits were displayed 94 different times at National, State, and local civil defense meetings; industrial conferences; meetings of educational organizations; and State and county fairs.

At the end of the year the Agency's public information program was pointed toward implementing the National Policy on Shelters (see ch. 3, Radiological Defense), and the self-help aspects of the pending National Plan for Civil Defense and Defense Mobilization (see ch. 1, Planning).

**CIVIL DEFENSE PREPAREDNESS.****PREPARE:**

Your family shelter and equip with two-week supply of food and water, first aid kit, battery radio.

Evacuation kit for your automobile with food, water, first aid kit, battery or car radio, blankets.

LEARN:

1. Warning signals and what they mean.
2. Your community plan for emergency action.
3. Protection from radioactive fallout.
4. First aid and home emergency preparedness.
5. Use of **CONELRAD—640 or 1240** for official directions.

**WHEN THE WARNING SOUNDS****A STEADY BLAST OF 3 TO 5 MINUTES**

This means: **ATTACK ALERT—TAKE ACTION AS DIRECTED BY LOCAL GOVERNMENT.**

Tune your AM radio to a Conelrad frequency (640 or 1240) for official directions. Proceed according to your community's emergency action plan. Don't use the telephone.

WAILING TONE OR SHORT BLASTS FOR 3 MINUTES

This means: **ATTACK—TAKE COVER IMMEDIATELY IN BEST AVAILABLE SHELTER.**

In a building: If there is no prepared shelter, go into a basement or to an interior first floor room. Stay in shelter until you get word you can leave.

Outdoors or in a car: Go to nearest shelter. If you cannot reach prepared shelter lie flat on the ground face down, or crouch on floor of car.

FIGURE 7.—Civil Defense Preparedness Card.

RESEARCH

Agency research is primarily applied research directed toward the practical application of science to the problems of civil defense. The Agency obligated nearly \$3.5 million for research in FY-1958—an increase of more than 20 percent over the previous fiscal year.

Highlights of the research program in the major categories of radiological defense, shelter studies, warning and communications, health and medical care studies, social and economic research, and operations research, follow:

RADIOLOGICAL DEFENSE

1. *Radiation Physics.*—The National Bureau of Standards made good progress during the year on basic studies of the characteristics of radiation produced by nuclear weapons, the penetrability of radiation in various construction materials and buildings, and methods of protecting the population from penetrating radiation. The results of these studies are used by the Agency and its contractors in developing radiological defense plans.

2. *Shielding Evaluation.*—A study was started by Technical Operations, Inc., of Burlington, Mass., to evaluate radiation shielding provided by large structures. There are five major goals in the study: (a) to obtain, by direct measurement, radiation attenuation provided by one or more large buildings; (b) to compare these measurements with the results of theoretical computations of attenuation; (c) to determine significant geometrical parameters of a building which must be measured to calculate its shielding potential; (d) to identify factors in building construction which could most easily be changed to effect a significant improvement in shielding; and (e) to summarize and develop a detailed procedure for use by engineering contractors in fallout shelter surveys.

Tests at the Nevada Test Site were conducted jointly by the Agency, the Bureau of Standards, University of California, and the Atomic Energy Commission on the radiation shielding provided by residential structures. Radioactive sources, distributed at 2-foot intervals around and on the roofs of houses that had withstood actual atomic explosions several years ago, were used in conducting the tests. The effectiveness of certain improvised fallout protective measures also was investigated.

3. *Radiological Reclamation.*—A study was undertaken for the Agency by the Naval Radiological Defense Laboratory to develop information and criteria as a base for planning and implementing large-scale radiological reclamation operations. One immediate object of the study is determining the feasibility of various large-scale reclamation procedures, including the "cost" in terms of radiation exposure, financial, and logistic factors.

NRDL also started work on the development of a radiological reclamation manual for the Agency which will be comparable to the NRDL manual entitled *Radiological Recovery of Fixed Military Installations*. The manual will contain information on operational procedures in radiological decontamination and other reclamation actions applicable to industrial, residential, and rural areas.

4. *Instruments.*—A prototype of an aerial radiological survey instrument was tested at the AEC Nevada Test Site, and tests of production models of the prototype were scheduled for early in FY-1959.

A transistorized model of the low-range survey meter (CD V-700) was developed during the year, substantially reducing the problem of supplying batteries for survey meters.

Prototypes of a remote monitoring fixed station instrument were developed. Such an instrument will permit a person to read the outside radiation level while remaining in a protected location.

The Jordan Electronics Division of the Victoreen Instrument Co. started work on a transistorized loudspeaker for a Geiger survey meter. The speaker attachment will be used as a teaching aid for classroom instruction.

5. *Operational Planning.*—A continuing research program with the University of California, aimed at providing techniques for use in radiological defense planning, covered the following studies during the year:

(a) *Shielding.*—The project includes studies of the shielding afforded by large buildings and basements. Initial results indicate that it will be possible to evaluate radiation shielding provided in large, complex buildings by making only a few physical measurements.

(b) *Radioactive Fallout Contour Maps.*—A method was developed for computing and preparing maps showing contour lines of fallout radiation intensities and doses estimated for various locations on the basis of probable wind patterns and characteristics. Maps were prepared for summer and winter conditions in the San Francisco Bay area, and computations were completed for 11 Western States.

- (c) *Variations in Fallout Distribution.*—The influence of topography, surface winds, eddies, and air currents are being studied to determine the drifting characteristics of fallout around buildings in urban communities. Initial results indicate that certain trends can be established. Local decisions on locations for fallout shelters and how to alter existing buildings to provide more fallout protection will be influenced by these studies.
- (d) *Effects of Mass Fire on Fallout.*—Nuclear bursts on metropolitan areas are likely to start mass fires resulting in strong ascending columns of air. These columns of air may be sufficient to disperse substantial amounts of fallout away from the area of burst. Research on a laboratory scale is being undertaken jointly with the California Forest and Range Experiment Station to evaluate the deposition of fallout particles in the presence of fire-induced convection columns.
- (e) *Effects of Fallout on Water Resources.*—A study is being made of the probable effects of fallout on water resources and supplies. The purpose is to provide information for the radiological decontamination of water supplies. This information will be published in a handbook for water supply personnel.

The United States Weather Bureau expanded on its earlier study of upper wind data to provide the basis for fallout probability charts. The results of the project will be incorporated in radiological defense studies at the University of California.

A study aimed at the development of model State and local radiological defense plans was conducted for the Agency by Technical Operations, Inc., of Burlington, Mass. The study, carried out in the States of New York and New Jersey, resulted in drafts of model plans to minimize the number of radiological casualties from a nuclear attack by making the best possible use of existing resources. A draft manual, *Radiological Defense Planning Guide*, containing the model plans and the data and analyses on which they were based, was being reviewed by the Agency at the end of the fiscal year.

SHELTER STUDIES

1. *Nevada Tests.*—Engineering field tests of structures and equipment were conducted during the first quarter of the fiscal year at the Nevada Test Site. These included tests on reinforced concrete dome structures, dual-purpose concrete mass shelters, family shelters, French and German shelters, protective vaults, thermal activated air-zero locators, pressure-sensitive valves and ventilation equipment, and the

behavior of certain shelter doors under blast loadings. Test reports were being prepared at the end of the fiscal year. Plans were made to conduct additional tests to determine the effect of shock in deep underground tunnels.

2. *Prototype Design and Specifications.*—A contract was signed with Eberle M. Smith Associates, Inc., of Detroit, for the design of three dual-purpose fallout shelters for elementary schools.

The Armour Research Foundation of Chicago started a study of the vulnerability of a system of deep rock shelters. (A previous study by another contractor resulted in a preliminary design for a system of deep rock shelters—800 feet belowground—for the daytime population of the Borough of Manhattan.) In the Armour study, a technical review of geological formations and an analysis of the shock effects of surface-burst nuclear weapons will be made to determine the vulnerability of the Manhattan design for deep rock shelters. Other sites, such as Chicago, Pittsburgh, Detroit, Kansas City, Cleveland, and boroughs adjacent to Manhattan, will be investigated to determine the influence that local geology has on the degree of protection offered by deep rock shelters.

3. *Shelter Equipment.*—Eleven valves, designed by Arthur D. Little, Inc., of Cambridge, Mass., for opening and closing ventilating intake and exhaust systems in shelters, were tested at the Nevada Test Site to determine their ability to close quickly and to withstand the shock load from a nuclear blast. The Bureau of Reclamation laboratories in Denver conducted additional tests on the valves to determine the air pressure drop associated with varying rates of airflow through the valves. The aim is to develop valves for shelter ventilating systems that are strong enough to withstand nuclear blast and yet flexible enough for rapid operation.

WARNING AND COMMUNICATIONS

1. *Telephone Warning System.*—A research project was completed on methods for transmitting a warning from a telephone exchange to all subscribers. The system as demonstrated by field tests was not considered economically feasible.

2. *Powerline Warning System.*—The Midwest Research Institute of Kansas City, Mo., is developing a National Emergency Alarm Repeater powerline warning system which can transmit a nationwide warning to users of electric power who have a special warning receiver. At the end of the fiscal year a field test was under way on a large power network to determine the best methods for generating the warning signal. Several prototype warning receivers will be tested

to develop a reliable, inexpensive receiver that may be plugged into any ordinary 110-volt alternating current outlet.

3. *Communications*.—Research and preliminary studies were continued by FCDA communications specialists on various types of communications equipment, including a mobile communications center, antenna systems, control center communications systems, radio and television broadcast coverage analysis, and communications equipment for shelters.

HEALTH AND MEDICAL CARE STUDIES

1. *Biological Effects of Nuclear Warfare*.—Studies of the biological effects of blast were conducted by the Lovelace Foundation for Medical Education and Research of Albuquerque, N. Mex., with support by FCDA and AEC.

A continuing study by the United States Naval Radiological Defense Laboratory on biological aspects of nuclear radiation produced interim reports but no basic conclusions. Areas of study include the diagnosis and treatment of radiation injury, internal radiation hazards, biological effects of deeply penetrating radiation, surface effects of radiation, metabolic and pathologic changes produced by radiation, and the determination of individual and species differences in susceptibility to radiation. In addition, NRDL began studies for the Agency of the relationship between acute and late effects of ionizing radiation, and the evaluation and application of therapeutic measures.

2. *Chemical Warfare Defense*.—The Engineering Research and Development Laboratories of the Corps of Engineers started a study to develop procedures for removing nerve gas from water by using the facilities and chemicals available in conventional municipal water treatment plants.

Agreements were reached with the Army Chemical Corps for final engineering tests and completion of procurement documents on a previously designed civilian protective mask (CD V-805), and an infant protector.

3. *Blood Research*.—The Agency participated in a continuing blood research program of the Army Medical Corps. The program includes research on plasma volume expanders and other research relating to blood and shock therapy. One immediate object of the Agency in this program is the development of additional expanders which can be substituted for whole human blood and plasma.

Another continuing project is being directed by the National Academy of Sciences to find ways of processing whole blood plasma which will eliminate the danger of infecting a plasma recipient with the

hepatitis virus. Several commercial laboratories are working with the National Academy of Sciences on this project.

4. *Training*.—The National League for Nursing started a project for the Agency aimed at integrating civil defense and disaster nursing methods in the training programs for registered and practical nurses.

5. *Medical Care Operations*.—The American Medical Association is directing a study for the Agency to develop the planning, training, and operational organization needed as a basis for a National Emergency Medical Care Plan. The AMA Commission on National Emergency Medical Care has appointed three task forces, representing medicine, surgery, dentistry, veterinary medicine, nursing, and public health, to complete the study.

SOCIAL AND ECONOMIC RESEARCH

1. *Human Behavior Under Stress*.—Three studies were completed analyzing human behavior during natural disasters. Dr. Harry E. Moore, professor of sociology at the University of Texas, produced a report entitled *Tornadoes Over Texas—A Study of Waco and San Angelo in Disaster* in which he analyzed the social disorganization and the recovery of the two Texas cities following large-scale disasters. The Disaster Research Group of the National Academy of Sciences directed a project for the Agency entitled *A Study of Formal Organizations in Hurricane Audrey*, which evaluated the manner in which formal organizations of Government, the American National Red Cross, and other groups and individuals dealt with disaster conditions. The Disaster Research Group also directed for the Agency a study of the human, social, management, and other factors and problems involved in the stranding of 800 persons in a Pennsylvania Turnpike Restaurant during a March 1958 blizzard.

The Agency and the Disaster Research Group jointly developed a series of major sociopsychological findings on human behavior under disaster and war conditions, and described their applicability to conditions of nuclear warfare.

2. *Public Attitudes*.—The Survey Research Center of the University of Michigan in the latter part of 1957 conducted a survey of the effects of the "Sputnik" launching on public attitudes toward fallout, the imminence of war, and the need for protective measures such as shelter. The findings were correlated with earlier public opinion and attitude surveys conducted by the Center to produce data on public opinion and attitude change.

3. *Survival Supplies for Civilians*.—The Business and Defense Services Administration of the Department of Commerce started a project in March 1958 which has as its purpose improving the ability

of the Federal Government to estimate the requirements for and the availability of certain essential civilian supply items in a national emergency. Various exercises, such as the annual Operation Alert, have demonstrated the inadequacy of this type of information. This project is to correct this inadequacy by surveying the availability of essential survival items, supplying tapes for inclusion in the resources file of the National Damage Assessment Center, and developing techniques for quickly determining the location and quantity of survival items.

4. *Continuity of Government.*—A contract was signed with Columbia University for the development of a model State constitutional amendment which, if adopted, would enable State legislatures to pass laws on lines of succession for essential positions in the executive, legislative, and judicial branches of government.

5. *Training.*—Applied Psychological Services of Villanova University, in a continuing program, evaluated the effectiveness of various Agency training courses and techniques.

OPERATIONS RESEARCH

1. *Damage Assessment.*—The Agency's Damage Assessment System for rapidly estimating damage to people and essential resources following a nuclear attack was improved during the year, and extended to include United States Territories. In addition, the Stanford Research Institute, contractors for the Agency's system, worked on revising the computing program of the system so that it can be used in the high-speed electronic computers at the National Damage Assessment Center. Also, the Bureau of the Census started work to update the resources file used in the system.

2. *Strategic Framework Study.*—The Stanford Research Institute conducted a study of the offensive and defensive capabilities of Russia and the United States so that the civil defense job of this Nation could be seen within an overall offense-defense framework. The study is used by the Agency to develop estimates of how certain civil defense actions could influence the total defensive and retaliatory power of the Nation. An outgrowth of this research project was an analysis, developed for the Federal Government, of the survival of the population after a massive attack in 1965.

CIVIL DEFENSE PARTICIPATION BY SPECIAL GROUPS AND ORGANIZATIONS

The Agency worked with a number of groups and organizations in this country and with other friendly countries to improve civil defense during the year. For example, the American Legion developed, under Agency guidance, a light duty rescue training program aimed at training rescue units in each of the more than 17,000 Legion posts and 14,000 Legion auxiliary units. The rescue units will be incorporated as auxiliaries to local fire, police, or public works departments.

This chapter is intended to show the scope of Agency activities with various groups and organizations rather than a detailed report of these activities.

INTERNATIONAL COOPERATION

With the advice and guidance of the Department of State, the Agency took part in five international conferences, exchanged public and technical information with other countries, cooperated in a continuing program of exchange visits of civil defense authorities, and arranged for the participation by other governments in the civil effects test program at the Atomic Energy Commission Nevada Test Site.

1. *North Atlantic Treaty Organization.*—The Administrator took part in the fourth conference of the NATO Senior Civil Emergency Planning Committee, which was established in 1955 to advise the North Atlantic Council on all phases of civil emergency planning.

The Agency represented the United States at the 11th and 12th meetings of the Civil Defense Committee, which was created in 1952 to promote the development of national civil defense programs and the exchange of information among member nations.

2. *Cooperation With Canada.*—Coordination of civil defense operations between Canada and the United States was facilitated by an agreement entered into by the two countries in 1951, and the establishment of the Joint United States-Canada Civil Defense Committee. At its sixth meeting held in Ottawa in May, the Joint Committee agreed to set up an arrangement for day-to-day liaison between technical representatives of the two countries for such programs as training and education, communications, warning, survival planning, welfare, health, engineering and shelter design, research and development, emergency legislation, industrial survival, radiological defense,

continuity of government, resources and requirements, and public information.

3. *Exchange Program.*—In July 1957, 30 civil defense officials from 10 European countries took part in the Agency's foreign observer program at the AEC Nevada Test Site. In addition, shelters designed and financed by the French and West German governments were tested. Following the test series, technicians from those governments visited the Nevada Test Site in December for a postshot inspection of the shelters.

In addition to the foreign officials who attended the test series in Nevada, the Agency arranged for staff briefings and consultation for 10 civil defense officials visiting the United States from Australia, Denmark, Germany, Great Britain, and Sweden. Seven Canadians and one Australian attended Agency training courses during the year.

As part of the program to exchange civil defense equipment for testing and evaluation purposes, the Agency loaned radiological instruments to the Portuguese Government, and protective masks to the Governments of Switzerland, Norway, and Sweden.

Approximately 330 requests for technical and public information literature, and the loan of films, were received from national or diplomatic representatives of other Governments, including Austria, Australia, Burma, India, Iran, Israel, Ireland, Lebanon, Luxembourg, Malta, Mexico, Pakistan, Spain, Sweden, Switzerland, and the NATO nations.

AMERICAN NATIONAL RED CROSS

As part of its program of training groups and individuals to be prepared to meet emergencies, the Red Cross trained 975,000 persons in first aid, 240,000 persons in home care of the sick and injured, and thousands in emergency mass feeding techniques.¹

The Red Cross also worked with FCDA and other Federal agencies on the development of a nationwide blood-procurement system.

The ANRC maintained a full-time liaison representative at FCDA National Headquarters and at two of the Agency's regional headquarters, and part-time liaison service at the other FCDA regional offices.

CIVIL DEFENSE ADVISORY COUNCIL

The Civil Defense Advisory Council met three times during the year. Two of the meetings (September 1957 and January 1958) were devoted to detailed reviews of drafts of the National Civil Defense

¹ National statistics on the exact number of graduates of the "Basic Course in Emergency Mass Feeding" which was developed jointly by FCDA and ANRC, were not available at the end of the fiscal year.

Plan.² At the third meeting (June 1958) the Council considered the merger of FCDA and ODM, civil defense appropriation requests for fiscal year 1959, the National Policy on Shelters, and the status of the National Civil Defense Plan.

The President appointed 3 new members to the Council, replacing members whose terms had expired, and reappointed 3 members. At the close of the year the following were Council members:

Hon. Leo A. Hoegh, Chairman.

Hon. J. Caleb Boggs, Governor of Delaware (reappointed).

Hon. Luther H. Hodges, Governor of North Carolina (new member).

Mrs. Hiram Cole Houghton, Red Oak, Iowa (new member).

Hon. John B. Hynes, Mayor of Boston (reappointed).

Hon. Goodwin J. Knight, Governor of California (reappointed).

Maj. Gen. Otto L. Nelson, Jr., Vice President, New York Life Insurance Co.

Hon. Okey L. Patteson, former Governor of West Virginia.

Hon. P. Kenneth Peterson, Mayor of Minneapolis (new member).

Mr. George J. Richardson, Special Assistant to the President, AFL-CIO.

Hon. Clifford E. Rishell, Mayor of Oakland.

Mr. Robert E. Smith, Houston, Tex.

Mrs. Charles W. Weis, Jr., Rochester, N. Y.

CIVIL DEFENSE COORDINATING BOARD

The Civil Defense Coordinating Board, composed of the representatives of 17 Federal agencies,³ met 7 times during the year. Five of the seven meetings were devoted entirely to a careful study and discussion of the National Civil Defense Plan.⁴ Other important agenda items included discussions on the coordination of passive research activities in the Federal Government, and the emergency functions of the Federal Government.

NATIONAL ADVISORY COUNCIL ON RURAL CIVIL DEFENSE

The National Advisory Council on Rural Civil Defense, established in 1955 to assist in the development of civil defense programs in the nonurban areas of the Nation, met twice during the year for discussions on radiological defense, mass feeding problems, stockpiling

² See ch. 1, Planning.

³ The Board was established on May 11, 1955, by Executive Order 10611.

⁴ See ch. 1, Planning.

legislation, the National Civil Defense Plan,⁴ the Agency's continuity of State and local government program,⁵ and a proposed civil defense public information program for nonurban areas.

RELIGIOUS GROUPS

Information and guidance on the Agency's plans and programs were made available to churches and clergymen through personal conferences, group meetings, and printed material. More than 2,000 religious leaders attended 19 major civil defense meetings during the year.

The National Religious Advisory Committee, which is composed of church executives representing all of the major denominations, met twice to discuss various aspects of the role of the clergy in civil defense. Seventy-five national church executives, representing 40 denominations, met in Washington in May and adopted resolutions in support of civil defense. Other meetings with religious groups were held in Georgia, Michigan, Minnesota, Oregon, Tennessee, and Rhode Island.

The Agency assisted Canada in the development of its first staff college course in civil defense for clergymen.

WOMEN'S ORGANIZATIONS

The National Women's Advisory Committee, composed of the presidents of 75 national women's organizations and 26 members-at-large, held its annual meeting in October. The Committee approved the new National Policy on Shelters,⁶ and was active in urging the passage of the Durham Bill.⁷

In addition, such organizations as the American Legion Auxiliary, Dorcas Societies of the Seventh-day Adventist Church, Federation of Women's Clubs, Home Demonstration Clubs, and the Auxiliary to the Veterans of Foreign Wars, and many others made extensive use of the Agency's *Home Preparedness Workshop Kit* for group leaders, and organized courses in first aid and home nursing.

BUSINESS AND INDUSTRIAL GROUPS

A number of business and industrial groups included civil defense planning in their yearly activities. For example, the Los Angeles Chamber of Commerce sponsored a Western Industrial Survival Conference at which prominent industrial representatives from seven

⁴ See ch. 1, Planning.

⁵ See ch. 2, Continuity of Government.

⁶ See ch. 3, Radiological Defense.

⁷ See ch. 1, Planning.

western States discussed industrial survival planning. In addition, civil defense topics were discussed at the annual meetings of such organizations as the Aircraft Industry Association, the American Society for Industrial Security, State manufacturers' associations, State and regional safety organizations affiliated with the National Safety Council, and Chambers of Commerce.

AFL-CIO LABOR ADVISORY COMMITTEE

The AFL-CIO Labor Advisory Committee met three times during the year to review and make recommendations on the National Civil Defense Plan, and the Agency's Skilled Manpower Cataloging Project at Grand Rapids, Mich.

The Grand Rapids project, aimed at finding skills in the local labor force that would be needed in immediate postdisaster operations, was completed. Among the findings were the following: (a) about 7 percent of the normal working force has emergency assignments (e. g., police, fire, and other governmental employees); (b) about 4.5 percent of the normal work force is composed of members of the building and construction trades who could be assigned to postdisaster jobs similar to the work they normally do; (c) about 7.4 percent of the working force in manufacturing, public utility, and similar services has skills that would be needed in immediate postdisaster periods.

The committee recommended that similar skills cataloging projects be carried out in at least two other cities.

