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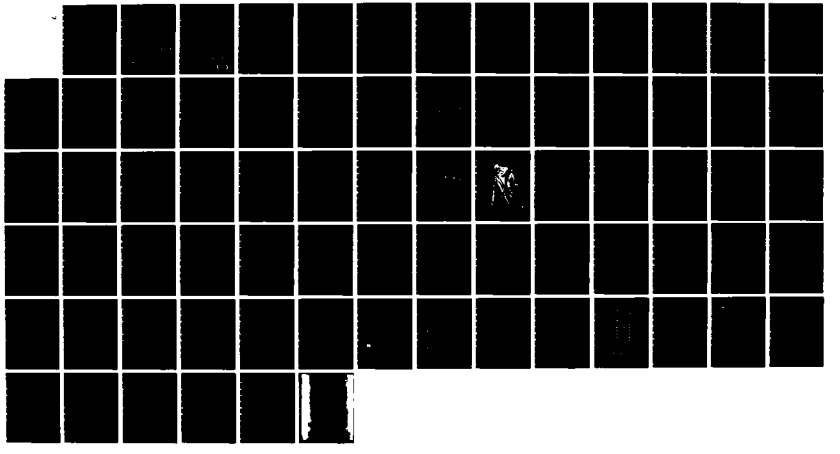

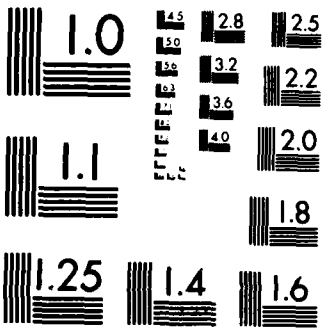

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BY THE COMPTROLLER GENERAL

Report To The Chairman, Subcommittee On HUD/Independent Agencies, Committee On Appropriations, United States Senate OF THE UNITED STATES

The Federal Emergency Management Agency's Plan For Revitalizing U.S. Civil Defense: A Review Of Three Major Plan Components

In 1980, the Congress amended the Federal Civil Defense Act of 1950, stating that civil defense should be improved. To address this need, the Federal Emergency Management Agency in 1982 proposed a 7-year plan for revitalizing the National Civil Defense Program.

The Subcommittee requested GAO to review three components of FEMA's 7-year plan: Nuclear Attack Civil Preparedness, Radiological Defense, and Direction and Control. GAO found that while FEMA has made some program improvements, civil defense generally continues to be characterized by inadequate funding and little interest at all levels of government. Also, some important civil defense systems comprising the components of FEMA's 7-year plan have numerous operational deficiencies. It is unclear whether state and local participation in nuclear attack related civil defense will be adequate to make FEMA's 7-year plan effective.

This report discussess the status of the selected components of the 7-year plan, recommends actions for improvement, and presents issues for the Subcommittee's consideration.

GAO/NSIAD-84-11
APRIL 16, 1984

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-204304

The Honorable Jake Garn
Chairman, Subcommittee on
HUD/Independent Agencies
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

Your February 16, 1982, letter asked us to review the Federal Emergency Management Agency's (FEMA's) plan for revitalizing civil defense.

As subsequently arranged with your office, we limited our review primarily to the status, costs, and effectiveness of three major components of FEMA's 7-year plan. The three components--Nuclear Attack Civil Preparedness, Direction and Control, and Radiological Defense--are critical to an effective civil defense program and account for about 74 percent of FEMA's total estimated cost of $4.2 billion for the program.

On March 29, 1982, we gave your office some fact sheets and questions for use during the Committee's appropriation hearings on FEMA's fiscal year 1983 budget request for civil defense and on April 11, 1983, we provided additional fact sheets and questions on the fiscal year 1984 program. In addition, on May 16, 1983, we provided you with a draft of this report.

As arranged with your office, we are restricting the distribution of this report for 10 days after its issuance. Copies of the report will then be sent to the Chairmen, House Committees on Appropriations, on Armed Services, and on Government Operations and Senate Committees on Armed Services and on Governmental Affairs; the Director, Office of Management and Budget; and the Director, Federal Emergency Management Agency. Copies will also be made available to other interested parties upon request.

Sincerely yours,

Charles A. Bowsher

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT TO THE CHAIRMAN, SUBCOMMITTEE ON HUD/INDEPENDENT AGENCIES, COMMITTEE ON APPROPRIATIONS, UNITED STATES SENATE

THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S ~~7-YEAR~~ PLAN FOR REVITALIZING U.S. CIVIL DEFENSE: A REVIEW OF THREE MAJOR PLAN COMPONENTS

D I G E S T

The purposes of the U.S. Civil Defense Program are to (1) save American lives in the event of a nuclear attack, (2) contribute to the United States' ability to deter the Soviet Union from an attack on the United States, and (3) improve the ability of the states and localities to deal with emergencies that occur as the result of natural and technological hazards.

GAO reported in 1977 that the United States lacked a comprehensive civil defense policy, civil defense had received little interest and funding, and civil defense needed better planning and coordination at all levels of government. (See p. 1.)

In 1980, the Congress amended the Federal Civil Defense Act of 1950, stating that the U.S. Civil Defense Program should (1) enhance nuclear war survivability, (2) include relocation for segments of the population, and (3) be adaptable for use in peacetime emergencies. (See p. 4.) The 1980 amendments did not change the original purpose of the civil defense program. Rather, the objective of the 1980 amendments was to revitalize that program.

In 1981, President Reagan announced his intention to devote greater resources to improving civil defense and in 1982 the Federal Emergency Management Agency (FEMA) proposed a 7-year plan for revitalizing the National Civil Defense Program.

The 7-year plan, estimated to cost the federal government $4.2 billion to implement, is actually a composite of new civil defense activities and the improvement and acceleration of activities that existed before the 7-year plan. The primary components of the plan are Nuclear Attack Civil Preparedness, Direction and Control, Radiological Defense, Telecommunications and Warning, Organizational and other Support Functions, and Salaries

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Tear Sheet

and Expenses. The Congress did not appropriate the funding levels requested by FEMA to implement the 7-year plan. FEMA requested $252.3 million for fiscal year 1983 and $253.5 million for fiscal year 1984. The Congress appropriated $147.9 million and $169 million. As requested by the Chairman, Subcommittee on HUD/Independent Agencies, Senate Committee on Appropriations, GAO reviewed the status, costs, and effectiveness of three major components of FEMA's 7-year plan--Nuclear Attack Civil Preparedness, Radiological Defense, and Direction and Control. These components are particularly critical to civil defense and compose 74 percent of the plan's estimated cost. (See p. 6.)

GAO did not evaluate the assumptions underlying FEMA's approach to a civil defense program. Also, while GAO found that the current level of federal funding is inadequate to implement FEMA's plan, GAO takes no position on how much should be funded.

GAO found that while FEMA has made improvements, the National Civil Defense Program continues to be characterized by inadequate funding at the federal, state, and local levels of government. Also, while federal, state, and local governments are jointly responsible for this program, the extent to which state and local governments will choose to participate is unknown. The following sections discuss Civil Defense Program costs, status, and effectiveness in relation to the three components of FEMA's 7-year plan addressed by this review.

NUCLEAR ATTACK CIVIL PREPAREDNESS

This component of the 7-year plan is concerned with relocating the population at risk from a nuclear attack, providing them with fallout protection, and developing in-place protection if time or circumstances prevent relocation. President Reagan's 1982 national security directive on civil defense reaffirmed that the United States will rely on crisis relocation (which is concerned with evacuating the population of high risk areas to safer host areas) as the primary means of protecting the population in the event of a nuclear attack. FEMA's 7-year plan requires both initial and enhanced crisis relocation plans. Initial plans focus on moving risk area populations to host areas and providing for their initial reception and care. Enhanced plans address the

relocation of essential public services such as police and fire protection and the preservation of essential industries, such as food processing, so that they would be able to continue to function and sustain the relocated population.

U.S. civil defense officials have been working on relocation plans for the population since 1978. As of the end of fiscal year 1983, 1,489 of the 3,135 initial plans identified as needed by fiscal year 1986 in FEMA's 7-year plan had been completed. No enhanced plans or prototypes that include both initial and enhanced plans have been completed. (See p. 13.)

FEMA has emphasized the completion of initial crisis relocation plans for areas located near strategic military bases. These are almost certain to be targets of an enemy first strike. FEMA has thus far given little emphasis to the completion of these plans for the major cities where they have the greatest life saving potential. (See p. 14.)

Most local governments have been willing to assist state and federal planners obtain the information they need to develop relocation plans. According to FEMA, only 39 local governments nationwide had rejected the crisis relocation concept as of June 1982. But local governments have done little to develop the local operational procedures and coordination needed to make relocation plans operable. (See p. 15.)

Some Nuclear Attack Civil Preparedness programs contained in the 7-year plan, which are critical to crisis relocation effectiveness, are inactive and unfunded. The Shelter Marking, Shelter Stocking, Packaged Ventilation Kits, and Emergency Instructions to the Public programs were not funded during fiscal year 1983. Shelter signs and stocks are also deteriorating to the point that they are of little use. (See p. 17.)

The effectiveness of crisis relocation is also heavily dependent upon the approval and funding of industrial protection and essential worker protection programs. These programs address the protection of vital industrial equipment (such as machine tools, lathes, and food and medical processing facilities) and key industrial workers in high risk areas from nuclear attack effects. They are not included in FEMA's 7-year plan and are awaiting a Presidential decision on their funding

and implementation. Based on preliminary FEMA cost estimates, the inclusion of these two additional programs could more than double the overall 7-year plan cost. (See p. 17.)

RADIOLOGICAL DEFENSE

The Radiological Defense component of FEMA's 7-year plan is designed to provide information, equipment, and technical advice to protect the population from radiation following a nuclear attack. While FEMA has made progress in the development of new radiological instruments, problems remain regarding the number of instruments to be purchased, state instrument inventories and distribution plans, and radiological defense officer staffing in the states. (See p. 21.)

FEMA originally planned to purchase 7 million instrument sets to measure radiation, but now, largely due to cost and budgetary concerns, plans to purchase only 5.5 million sets. This is just over half of what the Department of Energy's Oak Ridge National Laboratories estimated in 1979 would be needed to protect the population. FEMA's plans to purchase the 5.5 million sets is based on the assumption that design and production technical breakthroughs will reduce the procurement cost from a current estimate of $100 per set to $30 to $40 per set. If the technical breakthroughs do not materialize, either appropriations will need to be increased or the number of instrument sets to be purchased may need to be reduced further. (See p. 28.)

Radiological equipment stock levels, inventory procedures, deployment plans, or a combination of these were inadequate in the six states where GAO reviewed radiological equipment storage. The accuracy of radiological instrument inventory records varied among these states, and only two states had a plan for distributing stored radiological instruments. (See p. 29.)

Implementation of the Radiological Defense component is also being inhibited by delays in the hiring of state radiological defense officers, outdated FEMA radiological defense guidance, and the inability of FEMA to determine the location, status, and training received by individuals attending FEMA radiological defense training courses. (See pp. 30 and 31.)

DIRECTION AND CONTROL

The direction and control component of the 7-year plan encompasses a wide range of activities concerned with warning the public of a nuclear attack, providing information regarding what to do and where to go, allocating community resources during a nuclear attack crisis, and directing evacuation and postattack recovery activities. FEMA's 7-year plan includes direction and control programs such as Emergency Operating Centers and the Broadcast Station Protection Program.

Emergency operating centers

FEMA has established standards for evaluating emergency operating center (EOC) capability to sustain effective operations during a nuclear attack. According to the latest FEMA data, 2,713 of the 3,063 existing EOCs do not meet FEMA standards and have deficiencies that might render them of limited use during a nuclear attack. (See p. 37.)

FEMA's 7-year plan calls for a total of 5,828 state and local EOCs. However, this total is more an amalgamation of the number of existing EOCs, local civil defense organizations, and state and local needs and willingness to fund EOCs than a determination of how many EOCs are really needed for a national EOC network and where they should be located. During fiscal year 1984, FEMA plans to reevaluate the total number, types, and costs of EOCs needed. (See p. 39.)

Fiscal year 1982 state EOC development plans contained far fewer projects than the number needed to meet the FEMA 7-year plan objectives, and usually did not address the states' total needs or the full 7-year period. FEMA said the fiscal year 1983 state EOC development plans were much improved, but GAO did not evaluate them since they were submitted after this audit was completed. (See p. 41)

Broadcast Station Protection Programs

FEMA's 7-year plan calls for the development of 2,771 protected commercial broadcast stations by fiscal year 1989. These stations will distribute emergency information to the public during and after a nuclear attack. FEMA, however, has not performed sufficient analysis to determine whether 2,771 stations are actually needed, and program cost estimates are therefore questionable. (See p. 44.)

GAO visited 11 of the existing 607 fully protected stations. All 11 had facility, operational, and/or equipment deficiencies (such as inadequate fallout protection, equipment, food, fuel, or nuclear attack plans) that might prevent them from conducting effective operations after a nuclear attack. (See p. 44.)

FEMA guidance for both the EOC and Broadcast Station Protection Programs is outdated and adversely affecting their implementation. For example, FEMA has not issued formal policy guidance for the Broadcast Station Protection Program, and it is still using a generally outdated manual for EOC development which was published in 1966. FEMA also does not have an effective system for acquiring data on the status of EOCs and protected broadcast stations and does not perform periodic inspections of these facilities. (See pp. 40, 45 and 47.)

RECOMMENDATIONS

GAO recommends that the Director of FEMA:

--Direct the FEMA regions to monitor the degree to which local jurisdictions with completed initial crisis relocation plans are developing the necessary operational procedures and performing the coordination needed with state and federal plans. FEMA could thus better identify crisis relocation plan problems, better evaluate the extent of local civil defense participation, and direct limited resources to areas where they would be more effectively used. (See p. 19.)

--Update civil defense guidance and manuals so that state and local governments can better plan to meet national civil defense objectives. (See p. 48.)

--Direct FEMA regional officials to review reported radiological defense equipment stock levels for accuracy and shortages so that current stock levels can be determined and equipment needs more accurately identified. (See p. 33.)

--Emphasize the development of complete state EOC development plans that more accurately identify state EOC needs and intentions. FEMA could then better plan for a national EOC network by more accurately estimating the degree of probable local participation and funding of direction and control programs. (See p. 48.)

GAO makes additional recommendations for improvement on pages 33 and 48.

AGENCY COMMENTS

FEMA generally agreed with GAO's facts and recommendations. FEMA said it was aware of many of the deficiencies noted by GAO and was taking actions to correct them as best it could given its limited staff resources. (See p. 56.)

FEMA stated it plans to implement a new program implementation strategy called the Integrated Emergency Management System during fiscal year 1984.

FEMA believes this approach will address many of the concerns noted in this report. For example, new comprehensive guidance is being developed for multiyear development, capability assessment, and program status reporting, which FEMA believes should result in substantial improvement in civil defense and emergency preparedness in general. This strategy is not designed to replace the 7-year plan, but it does establish a new approach to accomplishing civil defense objectives. This system will be implemented throughout fiscal year 1984 and, therefore, GAO could not evaluate its effectiveness during this review.

ISSUES FOR THE SUBCOMMITTEE

These issues need to be considered by the Subcommittee in its oversight role over FEMA:

--Should FEMA continue to place program emphasis on the completion of crisis relocation plans for areas near strategic military bases, or should it place program emphasis on completing crisis relocation plans first for heavily populated urban risk areas where crisis relocation plans have the greatest life saving potential? (See p. 19.)

--Should FEMA select some representative risk and host areas and complete all civil defense program elements in these areas so as to develop prototypes to (1) demonstrate program workability and generate federal, state, and local funding and interest for civil defense and (2) test civil defense concepts and identify problems that might affect program funding considerations? (See p. 19.)

Contents

ABBREVIATIONS

BSPP	Broadcast Station Protection Program
CRP	crisis relocation plan
EMP	electromagnetic pulse
EOC	emergency operation center
FEMA	Federal Emergency Management Agency
GAO	General Accounting Office
NACP	National Attack Civil Preparedness
NCP	Nuclear Civil Protection
RADEF	Radiological Defense
RDO	radiological defense officer

CHAPTER 1

INTRODUCTION

A major nuclear attack on the United States would result in a national emergency on a scale unprecedented in the American experience. According to an Office of Technology Assessment report, [1] such an attack could be expected to cause severe social, economic, and governmental disruption, in addition to widespread destruction and as many as 165 million fatalities. Civil defense is concerned primarily with protecting the population from nuclear attack. An effective civil defense may drastically reduce the effect of such an attack and could be vital to the Nation's survival and recovery in the event of a nuclear war.

We have discussed civil defense and continuity of government programs in previous reports. [2] Until the Federal Emergency Management Agency (FEMA) was established in April 1979, several federal agencies were responsible for various segments of civil preparedness planning, but no one agency had overall responsibility. State and local governments also had preparedness responsibilities. Our prior reviews concluded that the federal, state, and local governments had not adequately fulfilled their preparedness planning responsibilities or sufficiently coordinated their actions and that more needed to be done to ensure survival and recovery following a nuclear attack. We made this review to determine the status, cost, and potential effectiveness of the revitalized civil defense program proposed by FEMA in March 1982. A more detailed description of our objectives, scope, and methodology is presented on page 6.

CIVIL DEFENSE PLANS ARE ESSENTIAL TO NATIONAL EMERGENCY PREPAREDNESS

Civil defense plans are critically important to national emergency preparedness. The ability of the United States to survive and recover from a major nuclear attack may be directly dependent upon the adequacy of such plans. An accurate assessment of the effects of a major nuclear attack is impossible due to the uncertainties involved. According to the Office of

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[1] The Effects of Nuclear War, Office of Technology Assessment (OTA-NS-89, May 1979).

[2] Civil Defense: Are Federal, State, and Local Governments Prepared for Nuclear Attack? (LCD-76-464, Aug. 8, 1977). Continuity of the Federal Government in a Critical National Emergency--A Neglected Necessity (LCD-78-409, Apr. 27, 1978).

Technology Assessment report, however, a high percentage of U.S. economic and industrial capacity would be destroyed, and without civil defense measures, U.S. fatality estimates for the first 30 days following the attack range up to 165 million persons, depending on the number, location, and type of warhead detonations. National health, economic, and agricultural resources would surely be affected, as would systems of distribution, communication, transportation, finance, and others.

FEMA maintains that an effective civil defense program employing crisis relocation of the population could as much as double the number of Americans expected to survive such an attack. Furthermore, the employment of simple but effective means of protecting essential industrial equipment might enable its return to operation in a matter of weeks rather than the years it might otherwise take to replace it under postattack conditions. Effective civil defense measures may therefore have the potential to drastically reduce casualties and economic damage in the short term and to speed economic recovery in the long term.

FEMA CREATED TO COORDINATE EMERGENCY PREPAREDNESS

FEMA is an independent executive agency serving as a single point of contact within the federal government for emergency management activities. The emergency-related programs and responsibilities of five agencies were merged into FEMA by President Carter's Reorganization Plan No. 3 of 1978 and by Executive Orders 12127 (Mar. 1979) and 12148 (July 1979). These included (1) the Defense Civil Preparedness Agency, Department of Defense, (2) the Federal Preparedness Agency, General Services Administration, (3) the Federal Disaster Assistance Administration, Department of Housing and Urban Development, (4) the U.S. Fire Administration, Department of Commerce, and (5) the Federal Insurance Administration, Department of Housing and Urban Development. Some other functions, such as oversight of the Federal Emergency Broadcast System (from the Office of Science and Technology Policy, Executive Office of the President), were also transferred to FEMA. FEMA is dedicated to establishing and maintaining a comprehensive and coordinated emergency management capability in the United States to plan and prepare for, respond and recover from, and most importantly, mitigate the effects of emergencies, disasters, and hazards ranging from safety in the home to nuclear attack.

Within FEMA, the responsibility for managing civil defense is shared by several major organizational units under the overall direction of the Director. The National Preparedness Programs Directorate is responsible for overall civil defense plans and policy development, while the State and Local Programs and Support Directorate develops and implements civil defense program components that are deployed at state and local levels.

The Training and Fire Programs Directorate provides civil defense training and public education; the Emergency Operations Office administers national warning and communications systems; and the Resource Management and Administration Directorate is responsible for FEMA's overall management system, which includes civil defense program activities. FEMA's organization chart is shown in appendix I.

FEDERAL, STATE, AND LOCAL ROLES IN CIVIL DEFENSE

The National Civil Defense Program is based upon commitment to a partnership by federal, state, and local governments, with private sector support. The federal government provides leadership in the form of guidance, technical support, and financial assistance based on requirements generated by the National Security and the Federal Civil Defense Act of 1950, as amended. Full (100 percent) federal funding and assistance is provided for primarily attack-related initiatives such as radiological defense, shelter development and surveys, nuclear civil protection planning, and industrial protection. Shared federal, state, and local funding and assistance is provided for the more predominant "dual-use" initiatives such as organizational structure, emergency operations planning, warning and communications systems, emergency operating centers, and training. While many of these initiatives are federal in origin, their successful implementation is dependent upon the states' participation and committed support. Conversely, the ability of states and localities to deal effectively with peacetime emergencies, for which they are primarily responsible, is dependent upon federal support and commitment.

CIVIL DEFENSE PROGRAMS HAVE RECEIVED LITTLE EMPHASIS

The development of an effective civil defense has historically received little emphasis. Civil defense programs have been characterized by low priorities, inadequate funding, and frequent reorganization practically since their inception.

The dominance of U.S. offensive power, coupled with a strategic policy of massive retaliation, appears to have contributed to keeping civil defense programs in a minor role during the 1950s. As shown by appendix II, civil defense appropriations increased to over $900 million (in constant fiscal year 1982 dollars) at the time of the Berlin and Cuban missile crises in the early 1960s, but by 1964 they had begun a steady decline in constant dollar terms that lasted until 1979. During this period, the federal civil defense program also underwent frequent reorganization, as shown by appendix III.

Our 1977 report on civil defense noted that the United States did not have a comprehensive civil defense policy, that civil defense had received little emphasis or funding, and that

civil defense needed better planning and coordination at all levels of government. We recommended that civil defense planning be more closely coordinated within the federal government and that a more thorough review of state emergency operating plans for nuclear attack be made before providing financial assistance. FEMA was formed shortly thereafter and is presently attempting to address many of the identified problems.

CIVIL DEFENSE PROGRAM REVITALIZATION

Interest in civil defense began to increase again in 1978 with the issuance of Presidential Directive 41, which directed the implementation of a new civil defense policy designed to improve U.S. population and leadership survivability in a nuclear war and contribute to deterrence and stability. This directive also stated that civil defense should help deal with natural disasters and other peacetime emergencies. As previously mentioned, FEMA was formed in 1979 to consolidate the emergency functions of several federal agencies into a more comprehensive, coordinated, and efficient system of emergency management.

In 1980 the Congress amended the Federal Civil Defense Act of 1950 to add a new title V, "Improved Civil Defense Program". Essentially this amendment made statutes of the civil defense policies described in Presidential Directive 41. The amendment stated that it was the intent of the Congress that the present civil defense program should be improved and that the program should:

--Enhance the survivability of American people and leadership in the event of nuclear war, thereby improving the basis for recovery and reducing the vulnerability to attack, enhance deterrence, and reduce the possibility that the United States might be susceptible to enemy coercion in times of increased tension.

--Include plans for crisis relocation of certain segments of the population.

--Be adaptable to deal with natural disasters and other peacetime emergencies.

This amendment further directed the President to develop and implement a civil defense program that considered such elements as

--rapid population relocation during time of international crisis,

--a survey of shelters inherent in existing facilities,

--plans for developing additional shelter during times of crisis,

--shelter management capabilities,

--shelter marking and stocking,

--development and procurement of shelter ventilation kits,

--improvement of civil defense warning systems,

--further development of a network of emergency operating centers and improvement of direction and control systems and capabilities,

--improved public information and training programs, and

--the development of postattack recovery plans.

FEMA'S PROPOSED CIVIL DEFENSE PROGRAM

Following the administration's review of civil defense programs and policies, on October 2, 1981, President Reagan announced his intention to "devote greater resources to improving our civil defenses" as part of his plan "to revitalize our strategic forces and maintain America's ability to keep the peace well into the next century." Subsequently, in early 1982, President Reagan signed a national security decision directive, stating that civil defense is an essential ingredient of U.S. nuclear deterrent forces and that it was a matter of national priority for the United States to have a civil defense program that provided for the survival of the U.S. population.

The objectives of the civil defense program called for by this directive were essentially the same as those called for by title V, including the ability to deal with peacetime emergencies. President Reagan directed, however, that to implement these policies, the civil defense program would:

--By the end of 1989, complete the development of plans and the deployment of operational systems to provide for population protection, with priority being placed on population relocation during a crisis from U.S. metropolitan and other high risk areas to surrounding areas of lower risk.

--Complete analyses and preparations required to make a funding decision on the protection of key defense and population relocation support industries.

--Complete analyses and preparations to allow a funding decision on blast shelters for key industrial workers in defense and population relocation support industries.

FEMA was assigned overall operational supervision of this program, and program funds were to be contained in the FEMA budget. Other federal agencies and state and local governments also have civil defense responsibilities.

FEMA subsequently designed a revitalized civil defense program to be implemented between fiscal years 1983 and 1989. The new program, referred to as the 7-year plan, is designed to relocate the population from larger cities and other potential risk areas during the crisis period expected to precede a nuclear attack and to provide the population with fallout protection and support in areas not likely to be subject to nuclear weapon direct effects. This plan is actually a composite of new civil defense activities and improvements to and acceleration of current activities. The program was designed by FEMA to reflect an orderly approach to developing improved civil defense capabilities. Projected 7-year plan costs by program element are shown in appendix IV.

FEMA's fiscal year 1983 civil defense budget request of $252.34 million, with which to begin implementation of the 7-year plan, was not fully approved by the Congress. The appropriated civil defense budget level for fiscal year 1983 was $147.9 million, about 58 percent of the amount requested. FEMA requested $253.5 million but was appropriated $169 million for civil defense in fiscal year 1984.

As we were completing the field work for this review in late 1982, FEMA officials informed us that the existing civil defense program might be greatly affected by a newly proposed Integrated Emergency Management System.

OBJECTIVES, SCOPE, AND METHODOLOGY

This review was performed at the request of Senator Jake Garn, Chairman, Subcommittee on HUD/Independent Agencies, Senate Committee on Appropriations. We reviewed the revitalized program status, costs, and effectiveness for the Nuclear Attack Civil Preparedness (NACP), Radiological Defense (RADEF), and selected Direction and Control portions of FEMA's 7-year plan.

The scope of our review was limited to these major civil defense program elements because they are critical to an effective civil defense and because they compose 52.45 percent of FEMA's fiscal year 1983 civil defense budget and 74.26 percent of the estimated 7-year plan total cost. In each of these areas, we reviewed program plans, cost estimates, and operational status. We also examined whether deficiencies noted in our prior reports had been corrected. We did not evaluate the basic assumptions underlying FEMA's civil defense program. Civil defense is generally controversial and often the subject of congressional debate, particularly regarding its level of funding.

We reviewed FEMA's revitalized civil defense program plans and associated activities and interviewed officials with civil defense responsibilities at FEMA headquarters in Washington, D.C. We also reviewed the field application of program elements at FEMA's regional offices in Seattle, Washington; San Francisco, California; Boston, Massachusetts; and Philadelphia, Pennsylvania; and at FEMA's Emergency Management Institute in Emmitsburg, Maryland. We interviewed state and local officials with civil defense responsibilities and visited selected emergency operating centers (EOCs) and/or other civil defense facilities in Washington, Oregon, California, Massachusetts, Maine, New Hampshire, Pennsylvania, Maryland, and Virginia. We chose these FEMA regional offices and states because they contain a significant portion of the U.S. population and industry; offer a variety in terms of city sizes, the presence of strategic military bases, the intensity and status of civil defense program efforts, and the use of prototype civil defense planning methods; and contain a variety of risk and host areas for population relocation.

To determine the operational status of selected commercial broadcast stations participating in FEMA's Broadcast Station Protection Program, we visited 11 commercial radio stations located in Washington, D.C., and nearby portions of Virginia, Maryland, and Pennsylvania. We did not visit enough stations for purposes of projecting results to a national basis.

Our review was performed in accordance with generally accepted government audit standards.

CHAPTER 2

U.S. NUCLEAR ATTACK CIVIL PREPAREDNESS IS LIMITED AND FEMA PLANS ARE SUBJECT TO UNCERTAINTIES AND HIGHER COSTS

Since 1978 U.S. nuclear attack civil preparedness has been based on the concept of crisis relocation. The 7-year plan is also based on this concept, but FEMA has made only limited progress toward the implementation of this and other NACP program elements. Crisis relocation plans will not be completed for much of the U.S. urban population until near the end of the 7-year period. Initial crisis relocation plans (CRPs)[1] have been completed for less than a third of the U.S. population located in areas likely to be nuclear attack targets. No enhanced CRPs have been completed, and inadequate funding, program disinterest, and other problems make it unclear whether adequate federal, state, and local participation will occur to complete an effective CRP program. Some essential elements of the NACP portion of the 7-year plan contain program requirements and cost uncertainties. Also, basic civil defense decisions regarding industrial and essential worker protection plans have not been made and may greatly increase the NACP program cost.

THE CRISIS RELOCATION CONCEPT

President Reagan's 1982 national security decision directive on civil defense reaffirmed that the United States will place reliance on crisis relocation as the primary means of protecting the population in a nuclear attack. Crisis relocation was chosen over other civil defense options because of the life saving potential it offered in relation to its cost.

CRPs call for evacuating the population of U.S. metropolitan and other potentially high risk areas to surrounding areas of lower risk during the period of international crisis expected to precede a nuclear attack. FEMA assumes that a warning period sufficiently long to permit evacuation (3 to 7 days) will occur after the President and the state governors issue instructions to evacuate. A surprise attack is considered highly unlikely since it is believed the Soviets would need at least a week to evacuate their cities, thus providing warning of a possible intention to attack. If they did not evacuate, the Soviets would subject much of their own population to retaliatory strikes in order to achieve a surprise attack on the United States. FEMA contends that CRPs would enable the United States to respond in kind to a Soviet evacuation, thus reducing U.S. population vulnerability and the possibility of crisis coercion.

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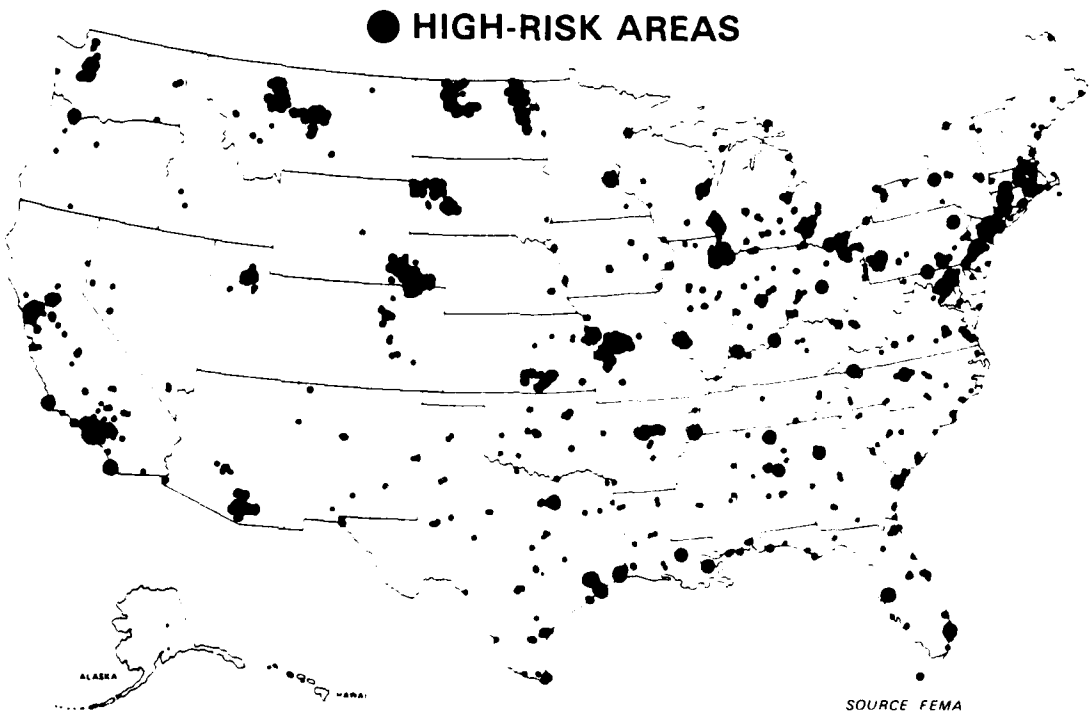
[1] These plans are developed in two phases--initial and enhanced. Initial CRPs deal primarily with moving people from risk areas to host areas. Enhanced CRPS are primarily concerned with sustaining the relocated population (see p. 17)

FEMA has identified some 400 areas in the United States that it considers to be at high risk from the direct weapons effects of a large-scale nuclear attack because of proximity to important military and urban-industrial areas. These high risk areas are shown by the map below.



The risk areas shown include (1) 63 "counterforce" areas containing U.S. strategic offensive forces--intercontinental ballistic missile complexes, Strategic Air Command bases, and ballistic missile submarine ports, (2) some 250 metropolitan areas of more than 50,000 population, and (3) about 100 additional areas with other important military and economic installations. Located within these risk areas are about two-thirds of the population (approximately 145 million people) and an even higher proportion of U.S. industry. Crisis relocation is designed to relocate people from these areas into surrounding areas of lower risk called host areas. FEMA believes the evacuation of these areas could result in the initial survival of up to 80 percent of the population, as opposed to an estimated survival rate of about 40 percent with current civil defense capabilities. Continued survival, however, might depend upon other factors such as fallout protection; the availability of essentials such as food, water, and medical supplies; and other postattack conditions.

NACP PROGRAM AND FEMA'S 7-YEAR PLAN

FEMA's 7-year plan for a revitalized civil defense program provides for major NACP program enhancements and additions. While this program emphasizes crisis relocation, it also provides for the improvement of in-place protection capabilities should a sudden attack occur or if time and circumstances preclude evacuation. FEMA estimates the total cost of completing its NACP program over the 7-year period (FY 1983-89) at $1.857 billion, or about 45 percent of total plan cost. Program elements and their estimated costs are shown in the following table.

Elements of Nuclear Attack Civil Preparedness

Program elements	Description	Estimated program costs: Total cost FY 1983-89	Estimated program costs: Annual cost after 1989
		(000 omitted)	
Nuclear Civil Protection Planning	Develop plans to either (1) relocate people from larger cities to rural areas or (2) use best available in-place shelter.	$ 307,800	$ 19,400
National Shelter Survey	Survey about 824,000 buildings to identify existing shelter from radiation in support of nuclear civil protection planning.	69,360	5,400
Shelter Marking	Mark about 345,000 buildings intended for use in an emergency by placing shelter signs near building entrances.	14,280	1,100
Shelter Stocking	Purchase food, water, and medical and sanitation supplies for distribution to shelters—quantities are for 259 million spaces in host and risk areas.	1,173,960	114,100
Packaged Ventilation Kits	Produce about 450,000 portable ventilation kits for distribution to shelters to prevent suffocation due to overcrowding.	115,560	10,800
Crisis Shelter Upgrading	Develop plans to upgrade host area buildings to provide additional fallout shelter protection for risk area evacuees.	104,960	8,600
Emergency Instructions To The Public	Publish instructions to the public in some 5,000 local telephone directories for areas that have had CRPs developed.	34,460	6,600
Essential Worker Protection	Identify vital industries and organizations that must be kept in operation and develop preliminary costs to construct blast shelters for essential workers.	18,020	-
Industrial Protection	Develop cost data and test procedures for protecting vital industrial equipment in a crisis.	2,120	-
Individual Mobilization Augmentees	Assign military reserve personnel to assist state and local emergency management agencies in time of crisis.	16,660	2,700
Total		$1,857,180	$168,700

FEMA requested $46.2 million for its NACP program in fiscal year 1983, about four times the fiscal year 1982 funding level, but the Congress appropriated $19.2 million. FEMA has requested $38.3 million for this program for fiscal year 1984. The following table illustrates the program amounts requested and the amounts appropriated by the Congress.

	FY 1983		FY 1984	
	request	appro.	request	appro.
	(millions)			
Nuclear Civil Protection Planning (Crisis Relocation Planning)	$14.3	$ 8.7	$12.3	$8.7[a]
National Shelter Survey	12.1	4.0	12.3	4.3
Shelter Marking	1.1	-	1.1	[b]
Shelter Stocking	1.1	-	0.6	[b]
Packaged Ventilation Kits	1.2	-	.7	[b]
Crisis Shelter Upgrade Planning	0.6	0.3	.6	[a]
Emergency Instructions to Public	2.2	-	.7	1.0
Essential Worker Shelter	10.9	3.6	7.1	3.6
Industrial Preparedness	1.1	1.1	1.1	1.1
Individual Mobilization Augmentees	1.8	1.5	1.8	1.8
Total	$46.2[c]	$19.2	$38.3	$20.5

[a]Nuclear Civil Protection Planning and Crisis Shelter Upgrade Planning were combined in fiscal year 1984 appropriations.

[b]Shelter Marking, Shelter Stocking, and Packaged Ventilation Kits were combined but not funded in fiscal year 1984 appropriations.

[c]Does not total due to rounding.

CRP PROGRESS IS LIMITED

Although U.S. civil defense relies primarily on crisis relocation for population protection, FEMA's efforts to implement this program have progressed slowly. Since 1978 CRPs have been developed for some localities, but those that do exist are generally for smaller, less populated areas while planning for the heavily populated urban areas has not yet occurred. Enhanced planning in areas where initial CRPs have been completed has not been performed because FEMA policy calls for the completion of all initial CRPs first. Also, FEMA has not yet completed enhanced CRP planning guidance.

Few CRPs have been completed

FEMA and the states have determined that risk, host, or combined risk and host area CRPs are required for 3,135 governmental jurisdictions within or adjacent to the 400 identified high risk areas. CRPs are developed by Nuclear Civil Protection (NCP) planners who usually are state employees fully funded by FEMA. Currently, state planners are working on "initial" CRPs, which primarily focus on moving risk area populations to host areas and providing for their care and reception. FEMA intends to proceed with enhanced CRP planning after all initial plans have been developed. Enhanced planning includes organizational relocation and work with essential industries to improve confidence that these and other services would continue to function during the crisis period and would sustain the relocated population. For example, arrangements for the shipment, storage, and distribution of essential food and medical supplies for host areas are usually a part of enhanced planning.

During fiscal year 1982, about 200 NCP planners nationwide completed 369 initial CRPs. Of the total 3,135 initial CRPs required by the 7-year plan by the end of fiscal year 1985, 1,167, or about 37 percent, had been completed by the end of fiscal year 1982. The table below shows the status and type of CRPs completed as of the end of fiscal year 1983.

Areas	CRPs required	CRPs completed	Percent completed
Risk	625	243	39
Host	2,005	993	50
Combined	505	253	50
Total	3,135	1,489	47

FEMA and state program officials said CRP completion has progressed slowly due to inadequate funding and staffing, frequent assignment of NCP planners to other tasks during fiscal years 1980 and 1981, and various administrative problems involving state implementation of this program.

Heavily populated areas will receive CRPs last

CRP life saving potential is greatest for urban risk areas because this is where most of the U.S. population at risk from nuclear attack is located. However, although about 47 percent of the planned number of CRPs have been completed, only 5 of the 30 most heavily populated U.S. risk areas have completed their initial CRPs. These 30 areas contain about 84 million people living in or near most of the Nation's major cities. This has

occurred partly because FEMA allowed the states to determine CRP planning priorities, and they tended to opt for completing the smaller, easier plans first. FEMA also instructed the states to give priority to completing counterforce area CRPs, which are usually located in less populated areas, and directed shelter survey resources needed for initial CRP plans to these areas. FEMA chose to complete initial CRPs for counterforce areas first because they are almost certain to be primary targets of an enemy first strike. However, this approach initially directs civil defense efforts away from the areas where they have the greatest life saving potential.

FEMA CRP priorities need modification

FEMA priorities have directed the completion of initial CRPs for all risk and host areas before proceeding with any enhanced CRP planning, primarily because FEMA has not yet completed the necessary enhanced planning guidance. Consequently, no enhanced planning has taken place. Local jurisdictions that have finished their initial CRPs and are interested in developing completed civil defense plans are thus being prevented from proceeding with enhanced plan development.

FEMA, state, and local officials we interviewed said that this approach encourages local jurisdictions to allow completed initial CRPs to fall into disuse and discourages interested jurisdictions from developing fully completed plans. If the current rate of CRP production continues, all initial plans may not be complete before the 1990s. Unless FEMA completes enhanced planning guidance soon and proceeds with enhanced CRPs, increasingly larger numbers of completed initial plans may become outdated during the interim. FEMA officials said that generally inadequate funding and staffing were primary reasons why enhanced CRP guidance has not yet been developed.

We believe FEMA should accelerate and complete the development of enhanced CRP guidance to facilitate enhanced planning activities in local jurisdictions that have completed initial CRPs and express interest in developing and implementing a complete CRP. This would direct CRP resources to those risk areas interested in utilizing them rather than delay full CRP capability for the sake of completing initial CRPs in all jurisdictions. Furthermore, the completion of crisis relocation planning and all other civil defense program elements in some local jurisdictions would not only provide some high risk areas with full civil defense capability now, but could also provide prototypes that would enable FEMA to better (1) determine actual program costs, (2) identify program planning and implementation problems in advance, and (3) demonstrate program workability so as to generate federal, state, and local funding and interest for civil defense.

THE CRITICAL UNKNOWN: WILL STATE AND LOCAL GOVERNMENTS PARTICIPATE IN CRP?

The effectiveness of crisis relocation as a defense against nuclear attack is directly dependent upon the degree to which federal, state, and local governments participate in planning, preparing, implementing, and coordinating their CRP activities. We found that 39 local governments have rejected the CRP concept. FEMA and state officials told us that most local governments with completed initial CRPs are doing little to prepare for their implementation. Furthermore, FEMA's limited ability to assist states and localities in this and other elements of NCP tends to discourage participation in the program.

Some areas are rejecting the CRP concept

A potentially severe problem facing CRP completion and effectiveness is that local officials may reject the CRP concept and refuse to participate in its planning and implementation. Local participation is essential since local officials can provide valuable planning input and assistance and will be responsible for implementing CRP in a nuclear attack crisis.

As of June 1982, 39 communities had rejected key elements of FEMA's civil defense program, mostly in regard to Crisis Relocation Planning. These include some major cities such as Seattle, Washington; San Francisco, California; New York, New York; and Houston, Texas. Because FEMA has no means of determining how many local governments may eventually reject CRP, the extent to which these governments will participate in CRP planning is unknown. However, local willingness to assist state planners in developing CRPs for smaller risk areas where CRP planning has occurred so far appears to have been generally good. In two of the FEMA regions we visited, state planners were developing these CRPs in spite of local government opposition.

Local government willingness to make CRP usable is much more doubtful. FEMA has not developed an effective means of monitoring the degree to which local jurisdictions with completed initial CRPs are refining them and developing the necessary operational procedures and coordination. Local governments in the four FEMA regions we visited seemed to be doing little to develop an ability to implement existing CRPs. NCP planners said that local officials are reluctant to refine and update completed CRPs and to develop the operational procedures and coordination needed to make the plans operable. Nuclear attack preparedness also generally appears to have a low priority with local government officials who tend to be more interested in

peacetime preparedness functions such as dealing with natural disasters and industrial accidents. [2] According to FEMA officials and state planners, unless CRPs are studied, updated, and exercised, local emergency services would encounter much confusion and difficulty attempting to implement CRPs during an actual nuclear attack crisis.

Federal-state-local CRP coordination appears inadequate

Crisis relocation planning, coordination, and support among federal, state, and local governments appear inadequate. FEMA appears to be the only federal agency assisting states and localities in crisis relocation planning. According to some state officials, federal agencies have neither coordinated with nor assisted state and local governments with CRP development, even though some of these agencies, such as the Departments of Defense, Transportation, Agriculture, Health and Human Services, Commerce, the Treasury, and others, might have key roles were an evacuation to occur. FEMA officials acknowledged this and said that the issue of whether federal agencies should have a role in crisis relocation planning remains unresolved. NCP planners in Pennsylvania, Virginia, California, and in FEMA Region X stated their concern that their CRPs might conflict with emergency mobilization plans being developed by various federal agencies. For example, some CRPs might not be feasible because of Department of Defense plans restricting interstate highway or other facility use.

Some states and localities have also failed to adequately coordinate crisis relocation planning. The state of Virginia, for example, has designated certain counties as host areas for evacuees from risk areas in both Maryland and the District of Columbia. However, according to Virginia NCP planners, there has been virtually no coordination between these jurisdictions in developing risk and host area CRPs. Similar lack of coordination between jurisdictions exists within the other states we visited. Plans involving population relocation among different states and localities may, therefore, not be effective unless coordination is improved.

FEMA regional assistance is limited

FEMA, state, and local officials in the four FEMA regions we visited said that FEMA regional offices were not adequately staffed to provide the informational and technical assistance needed to implement NACP programs. In FEMA Regions III and IX, for example, no staff are specifically assigned to work full

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[2] Our report, The Emergency Management Assistance Program Should Contribute More Directly to National Civil Defense Objectives, (GAO/GGD 83-5, Nov. 5, 1982), recommended that FEMA use this federally funded program as leverage to promote civil defense objectives.

time with the states and local governments on NCP planning. State and local officials in the states we visited noted that FEMA's generally inadequate funding, staff, and ability to monitor this program cause them to question the federal commitment to civil defense in general and tend to discourage state and local participation.

CRP EFFECTIVENESS IS DEPENDENT UPON ADDITIONAL PROGRAM ELEMENTS

CRP effectiveness will depend on whether all critical NACP program elements are funded and implemented. Many of these critical program elements are presently inactive and/or deteriorating, while others are awaiting a major funding decision. FEMA's plans and cost estimates for some program elements are not yet finalized. Implementation of the industrial protection and essential worker shelter programs could greatly increase overall civil defense program cost.

Uncertainties affect many critical program elements

Many essential NACP program elements, such as Emergency Instructions to the Public, Shelter Marking, Shelter Stocking, and Packaged Ventilation Kits, are presently inactive, unfunded, and/or deteriorating. None of these program elements received any funding in fiscal year 1983. Some, such as the shelter marking and shelter stocking programs, were active in the past but either have been discontinued or allowed to deteriorate so that they are currently of little use.

FEMA's plans for implementing these program elements contain uncertainties. The plans call for equipping fallout shelters with such items as a 7-day food supply, water containers, medical supplies, sanitation kits, and ventilation kits. FEMA officials said estimates of item quantities needed and their costs were based on research and staff experience and might contain an error factor of up to 20 percent. For example, since no federal marking of buildings usable as fallout shelters has occurred since 1973, FEMA estimates that 10 percent of the total existing shelter signs are being removed, vandalized, or otherwise deteriorating each year. Also, many newer buildings have never been surveyed to determine their usability as fallout shelters, and many surveys performed on older buildings are more than 10 years old and, thus, may no longer be accurate. FEMA officials acknowledged that further plan development and refinement are required, but said that this would be performed under an accelerated civil defense program. The NCP program elements tend to be interdependent, and their funding and implementation may be essential for population survival in a postnuclear attack environment.

Industrial protection and essential worker protection may greatly increase total civil defense costs

Within the next few years, the President is expected to make a funding and implementation decision regarding two new program elements--Industrial Protection and Essential Worker Protection. According to FEMA, these program elements are not presently a part of FEMA's 7-year plan, and, if approved, could possibly increase the total plan cost by as much as $6 billion dollars. FEMA believes these two program elements are needed to protect (1) vital industrial equipment from nuclear attack, thus improving the prospects for postattack recovery and (2) key workers needed to maintain essential industrial production (such as food and fuel to support evacuees in host areas and essential defense production) and other services (such as police and fire) in risk areas during the crisis. Providing blast shelter protection for key workers is the primary area in which program costs would be increased. FEMA officials said blast shelters may be needed to protect an estimated 4 million workers, at a preliminary estimated cost of $3.6 to $6 billion. In commenting on this report, FEMA noted that industrial protection studies are still underway and that some reduced capability options costing less than the figures cited may also be considered.

CONCLUSIONS

Nuclear Attack Civil Preparedness is a critical element of FEMA's 7-year plan for revitalizing civil defense. FEMA has progressed slowly toward implementing crisis relocation planning and other Nuclear Attack Civil Preparedness program elements largely because of limited program funding. Slightly less than half of the total number of initial CRPs required have been completed. However, because of FEMA CRP priorities, only 5 of the 30 most heavily populated risk areas that include most of the Nation's major cities have completed initial CRPs. FEMA priorities and inadequate funding appear to have prevented the development of enhanced CRPs. Because FEMA has not yet completed both the initial and enhanced phases of any CRPs or any CRP prototypes, the feasibility of this program and its total estimated cost are questionable.

CRP effectiveness as a defense against nuclear attack is directly dependent upon voluntary state and local government participation in FEMA programs. While state and local governments in the FEMA regions we visited generally appear to be cooperating with crisis relocation planning, many local government officials seem to have little interest in CRPs and do not appear to be developing the operational procedures and coordination needed to make these plans functional. FEMA also does not monitor whether these functions are performed. For these reasons it is unclear whether adequate participation will materialize to make CRP effective.

Many NACP program elements upon which the effectiveness of CRP is dependent have yet to be funded or implemented. Interdependent program elements, such as Emergency Instructions to the Public, Shelter Marking, Shelter Stocking, and Crisis Upgrade Planning, are unfunded and/or deteriorating, although these may be essential to relocated population survival after a nuclear attack. A decision to fund and implement essential program elements for industrial and essential worker protection has not yet been made, and it may increase the total 7-year plan cost by as much as $6 billion.

RECOMMENDATIONS

We recommend that the Director of FEMA direct the FEMA regions to monitor the degree to which local jurisdictions with completed initial CRPs are refining CRPs and developing the necessary operational procedures and coordination. FEMA could thus better identify CRP implementation problems, better evaluate the extent of local civil defense participation, and direct limited resources to areas where they would be more effectively used.

AGENCY COMMENTS

FEMA agreed with our recommendation and said it would initiate actions to assess a jurisdiction's ability to implement preparedness plans for both nuclear attack and natural and technical hazards by stressing increased testing and exercise programs.

ISSUES FOR THE SUBCOMMITTEE

This chapter raises several issues that need to be considered by the Subcommittee in its oversight role over FEMA. These issues are whether FEMA:

--Should continue to emphasize the completion of CRPs for counterforce and other less heavily populated risk areas, or complete CRPs first for heavily populated urban risk areas where CRPs have the greatest life saving potential.

--Should select some representative risk and host areas and complete all civil defense program elements there to develop prototypes to (1) demonstrate program workability and generate federal, state, and local funding and interest for civil defense and (2) test civil defense concepts and identify problems that might affect program funding considerations.

FEMA said the issue of whether crisis relocation planning should be given a priority for large cities or counterforce areas was rather moot since FEMA expects to complete all counterforce area initial CRPs by the end of fiscal year 1983. (At that time, FEMA actually completed 568 of the 716 required.)

FEMA further stated that approaches to the issue of the need to conduct evacuation planning for the larger cities would receive priority attention as program planning proceeds. We believe FEMA's expectation of initial CRP completion for all counterforce areas in fiscal year 1983 does not render this issue moot. Both initial and enhanced CRPs must be completed before current civil defense plans are complete. The determination of whether priority will be given to full CRP completion for large cities or counterforce areas will, therefore, still have a major impact on which of these will first be able to develop and implement an effective civil defense. Since the purpose of civil defense is to protect the population, we believe program emphasis should be directed toward the urban areas where most of the population resides.

FEMA acknowledged the importance of developing completed risk and host area prototypes, stating that exemplary projects have been proposed and that these have been included in the fiscal year 1984 budget submission for the civil defense program.

CHAPTER 3

RADIOLOGICAL DEFENSE EQUIPMENT HAS BEEN IMPROVED, BUT MAJOR PROGRAM PROBLEMS REMAIN

The Radiological Defense (RADEF) program is a critical part of FEMA's 7-year plan. This program is designed to provide the information, equipment, and technical advice essential to protect the population from exposure to radiation that could occur as the result of a nuclear attack. FEMA has made important strides toward the development of new, highly cost-effective RADEF equipment. Current funding levels, however, are inadequate to meet 7-year plan requirements, and major program problems remain regarding FEMA determination of the number of instrument sets needed, the accuracy of equipment cost and production estimates, the status of current equipment stocks, and the adequacy of program staffing and implementation plans.

RADIOLOGICAL DEFENSE IS ESSENTIAL FOR POSTATTACK SURVIVAL

A nuclear attack upon the United States is likely to cause a phenomenon known as fallout. Since fallout is radioactive and potentially lethal to life in areas well beyond those affected by direct nuclear weapon effects, [1] postattack survival may be directly dependent on whether effective RADEF measures are taken.

Fallout is the descent to earth of small irradiated particles of earth and debris that are drawn up in the mushroom cloud created when a nuclear weapon is detonated at ground level. The distribution of fallout particles after a nuclear attack depends on wind currents, weather conditions, and other factors such as the nature, type, and deployment of the nuclear weapons involved.

As the result of an all-out nuclear attack [2] on the United States, some communities might get a heavy accumulation of fallout, while others--even in the same general area--might get little or none. For example, some communities close to a nuclear explosion might receive fallout within 15-30 minutes,

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[1] Nuclear weapon direct effects include blast, intense heat and light, high winds, and initial radiation.

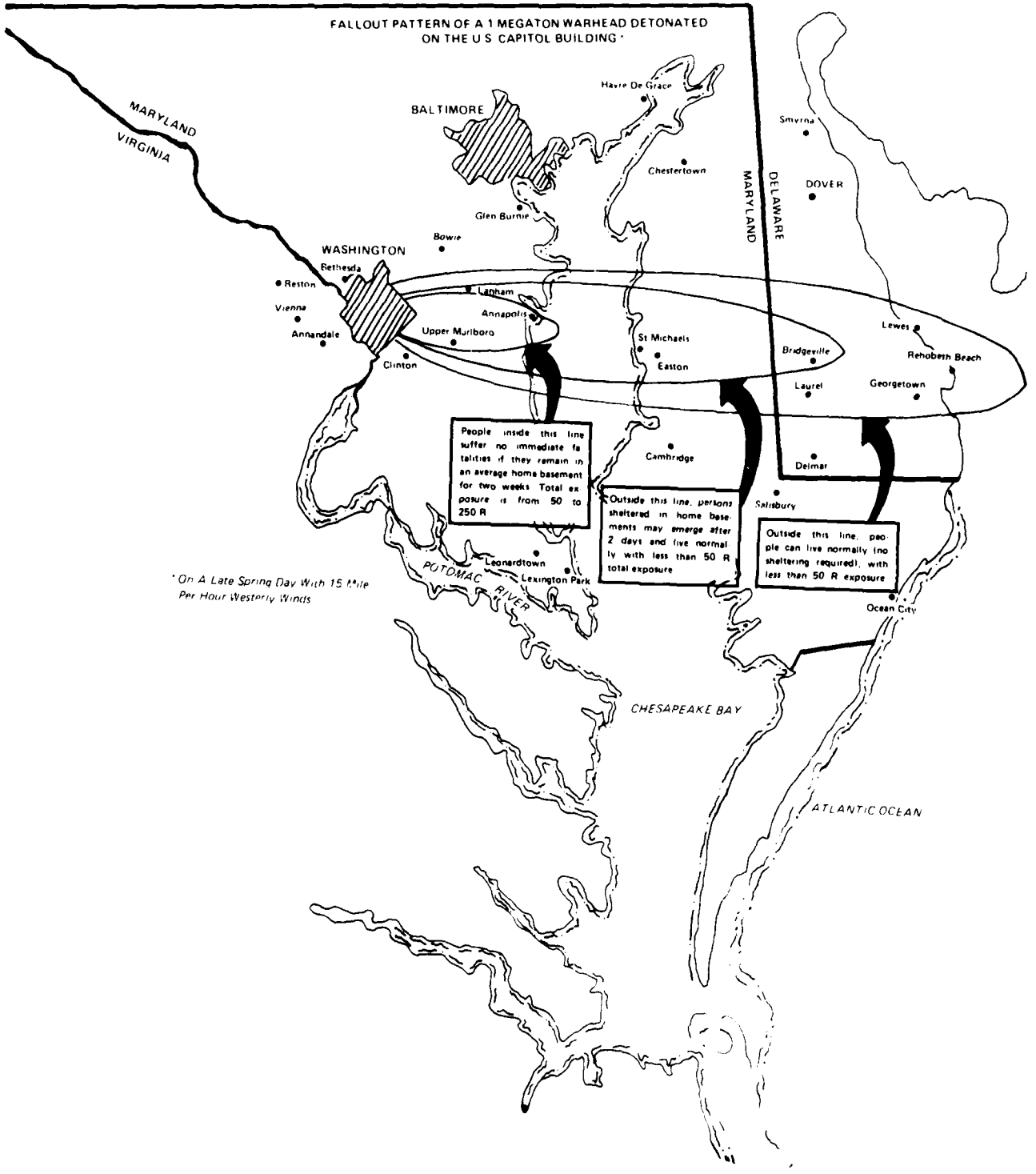
[2] FEMA estimates such an attack might involve the delivery of more than 4,000 nuclear warheads against various targets in the United States.

while it might take 5-10 hours or more for the particles to drift down on a community 100-200 miles away. The illustration on page 23 shows what the effect of fallout might be from a 1-megaton warhead detonated on the U.S. Capitol. However, in the event of an all-out attack, FEMA believes the Washington metropolitan area might be hit by many warheads, thereby greatly increasing the amount of fallout that could occur in the areas shown in the illustration. The illustration on page 24 shows fallout conditions that FEMA believes might occur as the result of such an attack against the United States on a spring day.

The severity of fallout effects on individuals will vary depending on the amount of exposure. The estimated effects over a period of less than 1 week are shown by the following table.

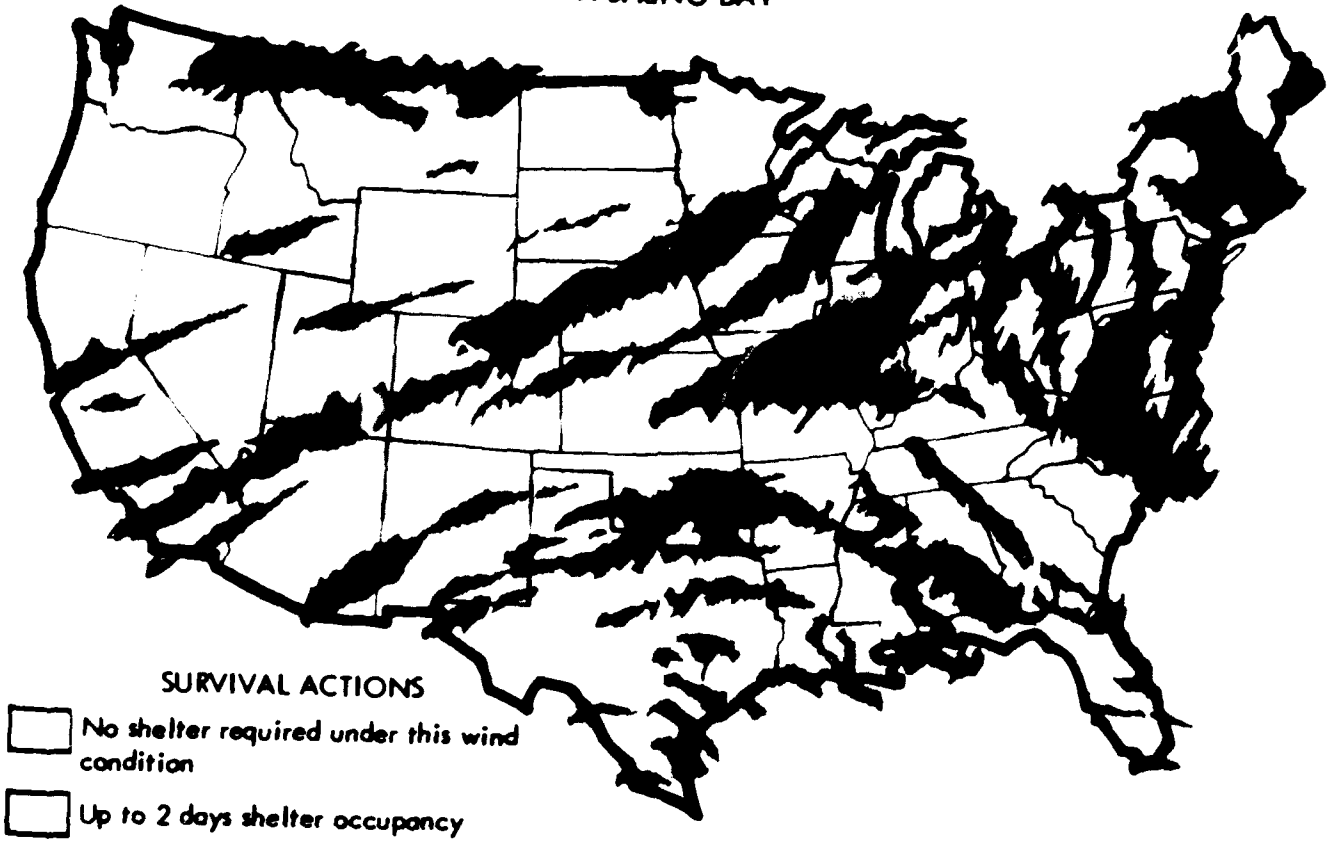
Total exposure	Visible effect
0-50R [a]	No visible effects.
50-200R	Brief periods of nausea on day of exposure. About 50 percent of the exposed people may experience radiation sickness, 5 percent may require medical attention, no deaths expected.
200-450R	Most persons will require medical attention due to serious radiation sickness. Approximately 50 percent will die within 2 to 4 weeks.
450-600R	Serious radiation sickness requiring medical attention. More than 50 percent will die within 1 to 3 weeks.
Over 600R	Severe radiation sickness. Death within 2 weeks.

[a]Radiation levels are measured in Roentgens(R), and exposure to less than 200 Roentgens will probably not be fatal unless coupled with other medical problems such as infections, diseases, and injuries from blast or burns.


FALLOUT PATTERN OF A 1 MEGATON WARHEAD DETONATED ON THE U S CAPITOL BUILDING *
MARYLAND
VIRGINIA
BALTIMORE
Havre De Grace
Chestertown
Glen Burnie
Bowie
WASHINGTON
Bethesda
Reston
Vienna
Annandale
Clinton
Lanham
Annapolis
Upper Marlboro
St Michaels
Easton
Cambridge
Salisbury
Smyrna
DOVER
DELAWARE
MARYLAND
Lewes
Rehobeth Beach
Bridgeville
Laurel
Georgetown
Delmar
Ocean City
People inside this line suffer no immediate fatalities if they remain in an average home basement for two weeks Total exposure is from 50 to 250 R
Outside this line, persons sheltered in home basements may emerge after 2 days and five normally with less than 50 R total exposure
Outside this line, people can live normally (no sheltering required), with less than 50 R exposure
Leonardtown
Lexington Park
POTOMAC RIVER
CHESAPEAKE BAY
ATLANTIC OCEAN
* On A Late Spring Day With 15 Mile Per Hour Westerly Winds

FALLOUT CONDITIONS FROM A RANDOM ASSUMED ATTACK AGAINST A WIDE RANGE OF TARGETS: MILITARY, INDUSTRIAL AND POPULATION

A SPRING DAY



SURVIVAL ACTIONS

- No shelter required under this wind condition
- Up to 2 days shelter occupancy
- 2 days to 1 week shelter occupancy
- 1 week to 2 weeks shelter occupancy followed by decontamination in exceptional areas

SOURCE: FEMA

FEMA's RADEF program is designed to save the lives of the millions of persons who would survive the direct effects of a nuclear attack but might subsequently die from overexposure to radiation. The program provides the skills, knowledge, information, and guidance needed to minimize the effects of fallout. This program also provides support as appropriate for emergency response to peacetime nuclear accidents.

RADEF FUNDING INADEQUATE TO MEET REQUIREMENTS

Current funding of the RADEF portion of the 7-year plan is inadequate for the implementation of the comprehensive civil defense program envisioned by the 1982 national security decision directive on civil defense. Total RADEF costs in FEMA's 7-year plan were projected to be $395.2 million between fiscal years 1983 and 1989, with recurring annual costs of $28.1 million thereafter. The table on the following page shows the program elements and their projected costs.

The following table compares the funding requested by FEMA to the amounts appropriated by the Congress for fiscal years 1982-84.

Program element	FY 1982		FY 1983		FY 1984	
	Request	Appro.	Request	Appro.	Request	Appro.
	(millions)					
Equipment Engineering	$ 1.2	$1.0	$ 4.0	$ 1.4	$ 2.0	$7.3[a]
Equipment Procurement	2.0	1.6	8.6	1.4	6.0	[a]
Equipment Logistical Support	0.3	0.3	0.5	0.3	0.3	[a]
Equipment Maintenance and Calibration	4.3	4.0	6.3	4.6	5.0	[a]
Fallout Forecasting	-	-	-	-	-	-
Radiological Defense Officer	2.0	1.3	9.0	2.3	6.0	3.0
Operational Guidance	.2	.2	.5	.3	.6	[a]
Total	$10.0	$8.4	$28.9	$10.3	$19.9	$10.3

[a]These program elements were combined in the fiscal year 1984 appropriation for a total of $7.3 million.

Elements of RADEF

Program element	Description of goals	Proposed program costs: Total cost FY 1983-89	Proposed program costs: Estimated annual cost after FY 1989
			(million)
Equipment Engineering	Provide engineering services required for the development, production, maintenance, and improvement of RADEF emergency response systems.	$ 28.000	$ 3.000
Equipment Procurement	Obtain the RADEF equipment required for nuclear preparedness.	230.600	6.900
Equipment Logistical Support	Provide for all RADEF inventory and control systems, including receiving, inspecting, testing, modifying, storage, and redistribution.	5.035	0.700
Equipment Maintenance & Calibration	RADEF equipment maintenance and calibration nationwide, in conjunction with state and local RADEF support systems.	48.950	7.000
Fallout Forecasting	Obtain upper wind data for use in predicting areas likely to be covered by fallout and the approximate fallout arrival times.	0.070	.010
Radiological Defense Officer (RDO) Program	Develop operational plans and procedures for RADEF support capabilities/and the radiological expertise required in state and local emergency operations.	75.000	10.000
Operational Guidance	Provide technical manuals, handbooks, and guidance necessary so that effective emergency operations can be carried out.	4.925	.500
Total		$392.580	$28.110

FEMA officials said this program is severely limited by the current level of staffing and other resources. At the appropriated levels of funding, it appears that full implementation of the planned RADEF program could take well over 25 years.

FEMA HAS DEVELOPED IMPROVED INSTRUMENTS, BUT THE NUMBER NEEDED AND THEIR ACTUAL COST ARE QUESTIONABLE

Radiological instruments provide the only practical means of determining the level of radiation occurring as the result of a nuclear attack. FEMA has made significant strides toward the development of new highly effective equipment that will enable people to determine when it is safe to leave protective shelters after a nuclear attack. Problems remain, however, in regard to FEMA's determination of the number of instruments actually needed, and its ability to achieve the additional technological breakthroughs needed to produce this equipment and to meet production time frame requirements. All of these factors are likely to have a major impact on program cost.

FEMA has made significant strides in instrument improvement

FEMA plans to develop two basic types of instrument sets: (1) shelter sets and (2) postattack recovery sets. Each shelter set is presently planned to contain two dosimeters, [3] one ratemeter, [4] and one charger. [5] The postattack recovery sets will be identical to the shelter sets except they will contain a more complex ratemeter. [6]

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[3]A dosimeter is used to measure accumulated exposure to radiation. It is used together with a ratemeter to determine and verify the protective value of a shelter. Both are small enough in design to be used by one designated individual to measure radiation in the shelter and outside when the radiation level drops sufficiently.

[4]A ratemeter indicates the rate of exposure to radiation, in Roentgens per hour.

[5]A charger is a small generator designed to renew a ratemeter's electric charge.

[6]The ratemeter (or survey meter) FEMA intends to place in postattack recovery sets does not require the simultaneous use of a time piece as does the ratemeter planned for the shelter sets. FEMA wants each postattack recovery set to contain this type of ratemeter so that readings can be taken quickly, thus reducing the risk of overexposure to postattack recovery workers.

The design of the new dosimeters and ratemeters for these sets was completed under a cooperative effort funded jointly by FEMA and the Army and Navy. As of June 1982, the development cost totaled $1.27 million, with FEMA contributing 53 percent and the Army and Navy contributing the other 47 percent of this amount. The new instruments FEMA plans to develop are much improved over the current 1960's vintage equipment and are potentially much less expensive. FEMA believes it can eventually procure the new shelter and postattack recovery sets for from $30 to $40 each. Sets with similar capabilities purchased in the early 1960s then cost $55 each, and FEMA's current cost for an improved ratemeter alone is about $150. FEMA thus appears to be working effectively with other federal agencies toward the development of improved, low cost RADEF equipment.

Planned RADEF instrument production will not meet needs

A 1979 study performed for FEMA by the Department of Energy's Oak Ridge National Laboratories recommended the production of 10 million sets for population protection. This estimate allowed for the distribution of sets to an estimated 20 million people living in rural areas where larger group shelters are impractical. FEMA's 7-year plan called for a total of 7 million equipment sets to be purchased. FEMA's reduction of the number of sets needed to 7 million was achieved in part by a decision not to produce sets for these people. The current RADEF equipment procurement plan for population protection calls for only 5.5 million sets due to budget constraints and the present status of the technology needed to produce these sets. Therefore, FEMA's plan may have a shortfall of from 1.5 million to 4.5 million sets, depending on the method of need estimation used.

Equipment cost estimate accuracy is dependent on technological breakthroughs

FEMA's production cost estimate range of $30 to $40 a set is based primarily on the realization of additional future technological breakthroughs in instrument design that will reduce current costs. The current estimated production cost is about $100 a set. Actual set cost will have to be reduced to an average of less than $42 a set to produce 4 million sets during fiscal years 1988 and 1989 for a total cost of $168.14 million as is currently planned. This does not include costs for other necessary procurements such as batteries, cartons, expendable items, and selected repair parts for existing equipment. During fiscal year 1982, FEMA reduced the number of sets to be procured in fiscal years 1988 and 1989 from 5.5 million to 4 million in order to keep projected production costs within the $168.14 million estimate. Program costs and instrument production levels are thus heavily dependent upon the realization of additional technical breakthroughs and may need further revision.

Equipment production costs are likely to increase

The William Langer Jewel Ball Bearing Plant, a federally owned facility located in Rolla, North Dakota, is curently being fitted to pilot produce the new RADEF equipment sets. FEMA plans to procure 2 million sets in both fiscal years 1988 and 1989, with pilot production and mass production monitoring performed by Langer and mass production performed by the private sector. Current FEMA set cost estimates are based on Langer production costs. However, knowledgeable FEMA officials said set production costs at Langer are about $20 per set lower than commercial market costs because it is a federally owned facility and employs less expensive labor comprised mostly of American Indians from a nearby reservation. Contracting out for commercial mass production and assembly may therefore increase program costs by at least $40 million for production alone in fiscal years 1988 and 1989.

In commenting on this report, FEMA acknowledged that set production cost estimates are subject to change and said that these estimates would depend upon whether technological breakthroughs are achieved, the production standards developed by Langer, and prevalent commercial labor and overhead rates.

EQUIPMENT INVENTORY PROBLEMS

Most of the RADEF equipment sets originally procured during the 1960s and still in inventory are planned for nonshelter uses, such as police, fire, and emergency operating center activities. FEMA is presently refurbishing this equipment at federally funded maintenance and calibration facilities. These instruments are then returned to local bulk storage facilities in the states. In the states we visited, either equipment inventories, stock levels, deployment plans, or a combination of the aforementioned were inadequate.

FEMA regions collect instrument inventory data from the various states and submit it to FEMA headquarters in Washington, D.C. But FEMA regional personnel responsible for this function stated that the current records are inaccurate in some states and that FEMA resources were inadequate to properly monitor state equipment maintenance and control procedures. Without accurate data, FEMA cannot determine with certainty how many instruments exist or how many are needed, nor can it adequately maintain current stock levels.

FEMA officials in the four regions we visited told us that state equipment stocks were inadequate to meet needs and that inventory control and maintenance varied from state to state. Radiological equipment stock levels, inventory procedures, deployment plans, or a combination of these were inadequate in the six states where we reviewed radiological equipment storage. For example, in New Hampshire, we found that state officials did

not know where all the state's instruments were located or how many had been lost, stolen, vandalized, or deteriorated beyond repair. This state had not performed a complete physical inventory of instruments for at least 5 years, and a 1981 inventory of one type of instrument could locate only 700 of the 1,492 recorded as on hand. Only two of the states we visited had equipment distribution plans for use in the event of a nuclear attack, and these had never held an exercise to test these plans.

STAFFING PROBLEMS MAY INHIBIT PROGRAM IMPLEMENTATION

The 7-year plan calls for RADEF program implementation through a cadre of RDOs and other RADEF staff employed by the states but funded by FEMA. Progress in program implementation, however, is being limited by problems with hiring staff and cadre training and deployment.

Hiring in states is behind schedule and encountering difficulties

FEMA plans to implement the RADEF program element through a federally funded cadre of 254 RDOs--52 state RDOs and 202 assistant state RDOs--who constitute the technical managers of the proposed system. These RDOs are hired by the individual states and are responsible for

--recruiting and training approximately 22,000 volunteer RDOs;

--developing and laying the groundwork for statewide RADEF systems;

--developing RADEF support systems at the state and state area [7] levels;

--assisting local governments in developing RADEF support systems that fit the needs of states and localities; and

--testing, exercising, and continually updating all RADEF support systems, including procedures for distribution of instruments.

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[7]A state area is a grouping of local jurisdictions within a state.

Following a nuclear attack, the RDO will advise and assist shelter radiological monitors [8], as well as state and local officials. The RDOs also provide the technical analyses needed for RADEF support of postattack recovery operations.

FEMA planned to hire all 52 state RDOs during fiscal year 1982, but budget cuts limited hiring to 19 state RDOs during this fiscal year, bringing the total existing at fiscal year end to 37. No assistant state RDOs were hired during fiscal year 1982. FEMA now plans to hire the remaining 15 state RDOs during fiscal year 1983 and all assistant state RDOs in future fiscal years. State officials we interviewed said that problems such as state hiring freezes, administrative delays, and high FEMA RDO qualification standards are also limiting RDO hiring. For example, at the time of our audit, some of the states we visited had hiring freezes and the civil service systems of others required 7 to 8 months to establish RDO positions. FEMA also requires that all RDOs meet the minimum requirements for a health physicist, but state salary structures frequently discourage application for these positions by qualified individuals. One FEMA official said, however, that hiring was a problem due more to the way RDO position descriptions were written rather than because position qualifications were too high.

Most of the state civil defense officials we interviewed said that unless these problems are resolved, their states might be unable to hire the RDOs planned regardless of the level of FEMA funding. Further, some of these officials said that they were hesitant to hire the number of RDOs planned because there was no assurance that FEMA RDO funding would not be reduced, thus leaving the states with employees who would have to be terminated.

Cadre training systems need improvement

FEMA's plans for the implementation of an effective RADEF program are based on a "cascade" training system concept. RDOs are to be trained by the FEMA Emergency Management Institute at Emmitsburg, Maryland. They, in turn, are expected to train lower levels of staff in their states, who will then train still lower levels. In this manner, FEMA plans to eventually have also trained

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[8]Radiological monitors are individuals trained to operate RADEF instruments that determine the level of radiation present after a nuclear attack. They are mostly local government officials or volunteers.

--22,000 part-time RDOs,

--625,000 radiological monitors, and

--7,500 radiological monitor instructors.

During a crisis period, FEMA plans to train most of an additional 1.5 million shelter radiological monitors and several million additional radiation monitors for the postshelter period.

RADEF cadre training may also be affected by outdated RADEF guidance and training materials. During fiscal year 1981, FEMA revised and published a Guide for the Design and Development of Local Radiological Defense Support Systems (Civil Preparedness Guide 1-30). During fiscal year 1983, FEMA published a handbook for radiological monitors assigned to shelters, and it plans to develop another guide for radiological monitors assigned to emergency service and vital facilities in fiscal year 1984. However, much FEMA RADEF guidance remains outdated and needs revision. For example, text materials currently being used to train RDOs at the Emergency Management Institute are outdated and will not be replaced with updated material until at least fiscal year 1984. FEMA is attempting to compensate for outdated course materials through instructor knowledge rather than delaying this training.

We believe the effectiveness of the cascade training system envisioned by FEMA to be questionable. FEMA has no central system to record the training received by individuals and has lost most of its records indicating the RADEF courses provided and who attended them prior to fiscal year 1980. Consequently, FEMA cannot determine the current location, status, capabilities, or assignments of these individuals. Effective implementation of any RADEF program elements based on performance by these individuals is, therefore, dependent on individual state records systems. We did not review the adequacy of these systems, and FEMA officials were unsure of their status. FEMA needs to develop a system for collecting and storing this information. Without it, FEMA can neither accurately determine RADEF program status and implementation capabilities nor develop realistic budget estimates for training needs.

CONCLUSIONS

An effective RADEF is likely to be essential for the post-nuclear attack survival of large segments of the U.S. population. However, FEMA will be unable to meet the requirements of its 7-year plan by fiscal year 1989 at current funding levels. FEMA has made significant strides toward the development of highly effective, low cost RADEF instruments. But the planned level of instrument production may not meet actual needs.

Current RADEF instrument production costs are based mostly on the judgment of FEMA officials and are heavily dependent upon yet to be achieved technological breakthroughs and the future acquisition of low cost commercial contracts for equipment set production. RADEF equipment cost estimates are, therefore, likely to be understated by millions of dollars if FEMA's 7-year plan is to be completed within the required time frames. Equipment plans and costs in some states may be further affected by problems with the accuracy of existing equipment inventories and the adequacy of equipment distribution plans.

RADEF staffing plans are behind schedule and encountering hiring problems. RADEF training materials are outdated and in need of revision, and FEMA needs to establish a central system to record the status, location, and training of individuals who attend FEMA training courses at the Emergency Management Institute.

We, therefore, believe that RADEF program costs shown in FEMA's 7-year plan are questionable and are likely to increase and that FEMA RADEF equipment inventory and training operations need program improvement.

RECOMMENDATIONS

We recommend that the Director of FEMA:

--Direct FEMA regional officials to review reported RADEF equipment stock levels for accuracy and shortages so that current stock levels can be determined and equipment needs more accurately identified.

--Direct FEMA regional officials to review the adequacy of state RADEF equipment distribution plans and exercises so that the ability of the states to use federally funded RADEF equipment can be determined.

--Update RADEF guidance and course material so that radiologial defense officers can more readily obtain current FEMA policy guidance and receive training that more accurately depicts and prepares them for the conditions likely to be experienced in a nuclear attack.

--Develop a central information system for determining the status, location, and training needs of individuals receiving training for RADEF program implementation. Such a system is needed so that FEMA can evaluate U.S. ability to implement RADEF training and support that would be needed in the event of a nuclear attack, and develop more accurate RADEF program cost estimates and plans.

AGENCY COMMENTS

FEMA agreed with our recommendations in this chapter.

CHAPTER 4

DIRECTION AND CONTROL PROGRAMS CONTAIN MANY DEFICIENCIES AND UNKNOWNS

The direction and control of emergency operations is essential to the implementation of U.S. civil defense plans for crisis relocation and postattack recovery. FEMA Direction and Control programs have suffered from low staffing and funding levels, and state and local government direction and control systems, such as emergency operating centers and protected broadcast stations, are often inadequate and deteriorating. FEMA's 7-year plan calls for both upgrading existing systems and developing new direction and control systems. However, the proposed FEMA direction and control programs we reviewed do not have clear plans or sufficient guidance, have inadequate program monitoring, and are based upon questionable cost estimates. The implementation of these plans will also depend upon whether significant increases in state and local participation in these programs occur.

ADEQUATE DIRECTION AND CONTROL IS ESSENTIAL

To implement a CRP before a nuclear attack would require that up to 145 million people be evacuated and relocated over a several day period. Current plans indicate that government officials would warn the public of the need for evacuation and provide information such as where to go, what to do, and how to protect themselves. State and local officials would need to control traffic movement, direct evacuees to designated shelters, and identify and allocate community resources during a nuclear attack crisis. After an attack, state and local officials would need to direct recovery activities, such as assessing damage, maintaining civil order, restoring utilities and communications, distributing remaining resources, and in general, supervising the resumption of basic services. Without effective direction and control, the evacuation of high risk area populations could be haphazard, resulting in increased casualty levels, civil disorder, and a much longer postattack recovery.

FEMA DIRECTION AND CONTROL PROGRAMS FUNDING

FEMA proposes to spend a total of $658.54 million for its direction and control programs between fiscal years 1983 and 1989. Thereafter, the plan calls for an annual recurring program cost of $45.86 million. The following table lists direction control programs and their projected costs as shown in FEMA's 7-year plan.

Program description	Proposed program costs: Total FY 1983-89	Proposed program costs: Annually after FY 1989
	(millions)	
Emergency Operating Center (EOC) program provides technical and operational guidance and up to 50 percent matching funds for upgrading and developing new state and local EOCs.	$360.90	$13.20
Broadcast Station Protection Program (BSPP) provides 100 percent federal funding for the acquisition and installation of facilities and equipment that protect selected broadcast stations against the effects of nuclear weapons.	139.49	6.50
Supporting Materials program provides up to 50 percent matching funding for the acquisition and installation of state and local communications and warning systems.	85.91	15.70
Maintenance and Services program provides up to 50 percent matching funding for annually recurring maintenance and replacement costs of EOC operating center equipment and facility components, as well as for other eligible existing communications and warning systems.	62.15	9.70
Other programs concerning activities such as damage assessment and research and development.	10.09	0.76
Total	$658.54	$45.86

The Congress appropriated less than a third of FEMA's fiscal year 1983 budget request for direction and control programs, or about the same as was appropriated for these programs in fiscal year 1982. The following table shows the amounts requested and appropriated for direction and control programs since fiscal year 1982.

Program	FY 1982 Request	FY 1982 Appro.	FY 1983 Request	FY 1983 Appro.	FY 1984 Request	FY 1984 Appro.
	(millions)					
EOC	$6.5	$6.5	$14.9	$6.1	$17.4	$10.6
BSPP	3.4	2.6	9.9	1.5	3.8	2.1
Supporting Materials	4.5	3.5	9.0	3.0	6.5	3.7[a]
Maintenance & Services	2.3	2.3	7.7	3.0	4.0	a
Total	$16.7	$14.9	$41.5	$13.6	$31.7	$16.4

[a]The Supporting Materials and Maintenance and Services Programs were combined in the fiscal year 1984 appropriations for a total of $3.7 million.

According to FEMA, direction and control appropriations are inadequate to maintain the existing systems or to make any meaningful start toward implementing FEMA's 7-year plan. We reviewed EOC program and BSPP costs and effectiveness, since together these programs comprise 76 percent of the total fiscal year 1983-89 direction and control costs in the plan. We found that the current EOC system is inadequate and that effective EOC development will require increased levels of state and local participation. FEMA's plans for EOC and BSPP systems development and its monitoring of direction and control programs need improvement.

THE CURRENT EOC SYSTEM IS INADEQUATE

EOCs are the most critical element for establishing state and local direction and control capability. They are supposed to be protected facilities that will serve as command posts for the state, local, and selected non-governmental officials who are charged with directing and controlling the governmental response to major emergencies, such as a nuclear attack. EOCs are most often located in existing police stations or other public service facilities. However, only 350 of 3,063 state and local EOCs meet all existing FEMA standards, and most local governments do not conduct adequate direction and control exercises.

Few EOCs meet FEMA standards

FEMA publications CPG 1-5, Standards for Local Civil Preparedness; CPG 1-5B, Local Program Status Handbook; and CPG 1-3, Federal Assistance Handbook establish standards to be met by state and local EOCs to obtain federal funding. These standards also serve as criteria for evaluating EOC capability to sustain effective operations during a nuclear attack crisis.

For example, qualified EOCs must have radioactive fallout protection; an emergency generator; a 14-day fuel supply; and adequate ventilation, sanitation, and water. In addition, FEMA standards require EOCs to have radio communications links with services such as police, fire, and public works units.

FEMA's latest Program Status Report [1] indicates that few EOCs meet all FEMA standards. The following table shows the number and percentage of state EOCs, state area EOCs, and local EOCs located in the United States, Puerto Rico, and U.S. territories that are considered fully capable of post nuclear attack operations.

EOC type	Existing	Meeting FEMA standards	Percentage meeting FEMA standards
State	50 [a]	10	20
State area	98 [b]	0	0
Local	2,915	340	12
Total	3,063	350	11

[a]Includes major EOCs located in Puerto Rico and U.S. territories.

[b]State area EOCs are used to coordinate emergency activities among selected jurisdictions within a state and can act as alternates for the state EOC.

According to the report, 2,713 of the 3,063 existing EOCs appear to have deficiencies that might render them of limited use during a nuclear attack. FEMA noted, however, that some of these EOCs have been used effectively in natural disasters and other peacetime emergencies.

Generally, EOCs of all types tended to have the most difficulty meeting FEMA communications standards. Nearly all EOCs are potentially susceptible to total communications failure during a nuclear attack because very few have been protected from electromagnetic pulse (EMP), a sudden electrical power surge that can occur over large areas after a nuclear explosion and that may totally disable communications equipment. We noted that FEMA does not require EMP protection for EOCs to be considered fully capable, and that only 34 state, no state area, and 76 local EOCs presently have this protection. Also, most

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[1]The Program Status Report is FEMA's primary status report for direction and control programs. This report was last updated in fiscal year 1981 and is further discussed on pages 39 and 47.

state EOCs are located in high risk areas and, according to a 1980 FEMA study, would not survive if these areas were attacked.

FEMA, therefore, appears to have made little progress in EOC development beyond that identified in our 1977 report on civil defense. According to FEMA, state, and local officials, this is primarily due to (1) insufficient federal funding and (2) inadequate matching funds and program interest on the part of many state and local governments.

Many local governments do not exercise direction and control plans

Local governments must develop an overall civil defense operations plan to meet FEMA preparedness standards. This plan addresses the basic emergency operating capability of a jurisdiction and includes annexes on direction and control, warning, and emergency public information procedures. FEMA guidance specifies that direction and control systems must be tested and exercised at least once every 2 years. While most local governments with civil defense organizations have prepared the basic operation plan and completed direction and control annexes, only slightly more than half have been exercised recently.

FEMA's fiscal year 1981 Program Status Report indicated that of the 5,633 local jurisdictions reporting civil defense activity, 5,047, or 90 percent, have general civil defense plans; and 3,867, or 77 percent, of these have completed direction and control procedures. However, only 2,704 (54 percent) of the local governments with these plans have exercised them since 1978.

We could not determine how many local governments have prepared civil defense plans or conducted exercises during fiscal year 1982 because FEMA has suspended the use of the Program Status Report and no longer collects this data. This occurred due to a Office of Management and Budget decision in fiscal year 1981 that the report imposed an undue burden on state and local governments and directed FEMA to suspend its use.

FEMA'S PLANS FOR EOC SYSTEM DEVELOPMENT NEED IMPROVEMENT

FEMA plans to develop a national network of state, state area, and local EOCs by fiscal year 1989. However, as of April 1983, FEMA had not accurately determined the number and location of state area and local EOCs actually needed. Therefore, FEMA's estimated cost of $360.9 million for a national EOC network is questionable. In addition, much of FEMA's guidance affecting EOC development is outdated and is in need of improvement. Ongoing FEMA actions are attempting to address these problems.

FEMA needs to better determine the number and location of EOCs needed

FEMA's plans call for a total of 5,828 EOCs--218 state and state area EOCs and 5,610 local EOCs. FEMA estimated the total number of EOCs needed primarily by totaling EOC needs as reported by state and local governments in the fiscal year 1981 Program Status Report. Therefore, FEMA's estimate was more a reflection of individual state and local willingness to develop and partially fund EOCs rather than a determination of what was needed for an effective national EOC network, as called for by FEMA's 7-year plan.

This appears to have resulted in an erratic pattern of state area EOC requirements. Only 35 of the 50 states identified any state area EOC requirements, and these ranged from 1 to 19 facilities per state. FEMA officials stated that the number and distribution pattern of state area EOCs were questionable and needed reevaluation.

FEMA similarly determined that 5,610 local EOCs were needed by totaling the number of local governments reporting the existence of a civil defense organization. This method of determining the number of local EOCs needed does not adequately consider population, local civil defense capability and resources, risk, need, or CRP requirements and status. Local jurisdiction civil defense organization capabilities vary widely, with some having fully capable EOCs and full-time staff, while others have only untrained volunteer staff with almost no plans, equipment, or facilities. Furthermore, since FEMA's civil defense plans are based on the crisis relocation concept, CRP requirements should influence any FEMA determination of the number and location of local EOCs planned for federal funding assistance.

FEMA is reevaluating EOC requirements as part of an ongoing program assessment. During fiscal year 1983, FEMA contracted for a study of EOC requirements to reevaluate the number and location of state area and local EOCs needed and to identify potential alternatives for the current EOC plan. Since this study may take up to a year to complete, FEMA may not be able to begin implementing program improvements based on this study before mid fiscal year 1984.

EOC cost estimates are questionable

FEMA's 7-year plan estimates that upgrading and developing a national system of 5,828 EOCs will cost $360.9 million in federal matching funds. We found that these cost estimates are questionable and subject to change. FEMA officials acknowledged that in developing EOC cost estimates, FEMA overestimated current EOC status and capabilities, did not include costs for the mobile command center systems being recommended by FEMA for

augmenting EOC capability, and underestimated the average EOC size and capability needed. We noted that initial EOC project matching fund cost estimates that states submitted to FEMA in fiscal year 1982 averaged $141,457 per project compared to FEMA's overall 7-year plan average EOC development project matching fund cost estimate of $65,570. Furthermore, EOC development project costs will be directly affected by any changes in FEMA's determination of how many EOCs are needed. We did not attempt to develop an independent estimate of EOC development project costs because FEMA's EOC cost estimate procedures allow considerable latitude, many EOC requirements are unclear, and FEMA presently plans to reevaluate the total number, types, and costs of EOCs needed.

FEMA's civil defense policy guidance is outdated and needs improvement

One of FEMA's principal responsibilities is to provide civil defense policy guidance to state and local governments. This guidance should be current and realistic, and it should help to maintain effective civil defense programs. Our 1977 report noted that much civil defense program guidance was outdated. Although FEMA has had efforts underway to improve and update guidance, much of it still remains outdated. For example,

--The National Plan is supposed to provide basic guidance and general policies to all governmental levels for use in developing their own operational civil defense plans. This plan is badly outdated, having been last issued in 1964 by the Office of Emergency Planning, a FEMA predecessor. Another predecessor, the Federal Preparedness Agency, was attempting to update this plan during our 1977 review of the civil defense program. In 1980 FEMA decided to revise the National Plan to reflect current policy changes in federal reorganizations and FEMA's expanded mission. The new plan was intended for use at all levels of government as a single source of official information on all aspects of civil emergency preparedness and operations. FEMA still had not revised the National Plan as of June 1983.

--The manual for the development of emergency operating centers (MP-38) was last published in 1966 by the Department of Defense's Office of Civil Defense, a FEMA predecessor. FEMA officials said that this manual is generally defunct and needs revision. It does not adequately address, for example, current EOC policy on such critical areas as required levels of fallout protection and protection from EMP. FEMA has been attempting to revise this manual since 1981, but does not expect to complete these revisions until at least fiscal year 1984.

--The existing manual for emergency communications was last issued by the Defense Civil Preparedness Agency, another FEMA predecessor, in 1977. According to a responsible FEMA official, this document is now obsolete and defunct, and it lacks adequate detail. FEMA began revising this guidance during fiscal year 1982 and expects to produce a completed revision subsequent to the conclusion of a communications study presently scheduled to be completed in fiscal year 1983.

FEMA's slowness in providing updated guidance to states and localities adversely affects the implementation of a civil defense program. Federal, state, and local officials said that outdated guidance, along with continual FEMA reorganizations and program changes, tends to discourage civil defense program participation and reinforces beliefs that this program is ineffective and should be given a low priority.

EFFECTIVE EOC DEVELOPMENT WILL REQUIRE INCREASED LEVELS OF STATE AND LOCAL PARTICIPATION

The Federal Civil Defense Act of 1950 made federal, state, and local governments jointly responsible for civil defense. Our 1977 report noted that this joint responsibility has a dual effect--while it involved all levels of government in civil defense efforts, it also weakened the program due to state and local government disagreement and disinterest in nationally set goals and the low funding priority given civil defense at the federal level. Because the federal government can only encourage, not mandate, state and local participation, a major factor determining the success of FEMA's civil defense program will be whether enough state and local participation and funding will materialize to make the program effective. We found that current state and local EOC development plans are tentative and do not meet current national EOC network needs. Other EOC development and participation problems also remain.

Few EOC projects are planned

FEMA first requested the states to submit EOC development plans during fiscal year 1981. These plans were intended to indicate the state and local EOC projects anticipated during the fiscal year 1982-89 period. However, few of the submitted plans addressed EOC projects planned for fiscal year 1985 or beyond. The fiscal year 1982 state EOC development plans showed the number of state-planned EOCs to be substantially fewer than the number needed to meet FEMA 7-year plan requirements. While FEMA's 1981 Program Status Report indicated that 46 state EOC and 165 state area EOCs needed establishing or upgrading, the state EOC development plans identified only 31 state and 79 state area planned EOC projects. FEMA places a high priority on

the funding and development of state and state area EOCs. However, only 5 of the 15 states with vulnerable state EOCs and no alternate facilities presently plan to develop any. Moreover, while FEMA's 7-year plan identifies the need for 5,293 new or upgraded local EOCs, only a total of 882 projects had been planned as of January 1983.

FEMA officials noted that factors adversely affecting state and local EOC development included concerns about inconsistent federal funding (federal EOC program funds were not available during fiscal years 1979 and 1980) and FEMA's inability to coordinate the availability of EOC funds with state and local budget cycles.

The state EOC development plans also contain many projects that are tentative. State and FEMA officials told us these plans do not necessarily reflect EOC development activity that will actually take place because the states had limited time to prepare the initial EOC development plans, and neither the states nor FEMA were able to sufficiently review and verify these projects. Consequently, some states may not be able to perform all the EOC projects listed in their plans. FEMA officials told us that because of increased state experience with these plans and recent FEMA policy changes, the plans submitted by the states in fiscal year 1983 were much improved. We did not review these plans because they were not available at the time we concluded our audit field work in January 1983.

EOC development programs suffer from lack of local funding and interest

Most of the state officials we interviewed said that EOC development is being severely limited by state and local governments' inability to meet matching fund requirements and/or by a general lack of interest in civil defense.

State and local EOC funding requests exceeded the $2.9 million matching funds available from FEMA in fiscal year 1981 and the $6.5 million available in fiscal year 1982. However, this level of funding is inadequate for the development of the nationwide system of EOCs envisioned by FEMA's plan.

FEMA and state officials all stated that civil defense tended to receive limited interest and a low funding priority at state and local levels, especially for expensive projects that have limited peacetime use, such as fallout protection, large stocks of emergency food and water, and survivable communications equipment. FEMA Region I, in particular, appears to be facing severe program interest and matching fund problems. For example, the FEMA Region I EOC development plan gave top priority to establishing a state EOC in both Vermont and New Hampshire, but the legislatures of these states have so far

refused to fund these projects. While only 22 of the 403 existing local EOCs in Region I meet all FEMA standards, the fiscal year 1982 EOC development plans for Region I indicate only 25 local EOC development projects are planned for the fiscal year 1982-86 period. Also, FEMA could only expend $220 of the $40,000 it had designated for Region I fiscal year 1982 EOC development activities and had to redistribute the excess funds to other regions. In FEMA Region X, an Oregon official told us that while the state had identified critical EOC projects with a total estimated cost of $1.26 million, state and local governments have been unable to meet the matching fund requirements. In FEMA Region IX, California officials said that several of the state's most critical host areas are not developing EOCs because the local governments lack the required funding. Some state officials told us that they were reluctant to promote and fund civil defense projects because they believed that federal commitment and funding for civil defense were questionable.

Furthermore, according to some FEMA and state officials, because EOCs can be funded only where state and local governments have both the required matching funds and interest, there is little control over where EOCs are developed. Regional development is, therefore, sometimes determined more by local interest than by FEMA priorities, and sometimes the two do not coincide. State emergency officials said, for example, that the less heavily populated host areas, where EOCs are most needed to support CRP, tend to be the least able to provide matching funds and have fewer existing emergency resources. EOC development in some of these areas may not be feasible without increased proportional levels of federal funding, which is presently limited to only matching funds by the Civil Defense Act of 1950, as amended. We proposed changes to federal matching funds requirements in a 1980 report. [2]

FEMA'S BSPP NEEDS IMPROVEMENT

During and following a nuclear attack, the public would need information concerning where to go, what to do, and how to protect themselves. The BSPP is designed to protect selected commercial broadcast stations from nuclear weapon effects so that the public can continue to receive emergency instructions and information. Commercial radio and television stations participating in the BSPP are selected from the more than 9,000 stations participating in the Emergency Broadcast System. FEMA provides BSPP stations with 100 percent federal funding to develop a protected area within a broadcast station and to acquire adequate emergency equipment to operate in a radioactive fallout environment.

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[2]Our report entitled Proposed Changes in Federal Matching and Maintenance of Effort Requirements for State and Local Governments (GAO/GGD 81-7, Dec. 23, 1980) recommended that matching requirements be used more sparingly, especially where national security interests are involved.

We reviewed FEMA's plans for developing the BSPP under the 7-year plan and visited 11 selected stations participating in the program. We found BSPP plans regarding the number of stations needed and estimated costs to be questionable. All of the stations we visited also had deficiencies that might render them of little use in the event of a nuclear attack.

FEMA needs to better determine number of BSPP stations needed

FEMA's BSPP objective is to protect 2,771 stations to enable their continued operation after a nuclear attack. This number is based on the estimated need for one BSPP station for each host area. At the beginning of fiscal year 1983, FEMA had fully protected 607 stations, leaving a total of 2,164 to be completed under the plan between fiscal years 1983 and 1989.

FEMA needs to perform a better analysis of the number of BSPP stations needed and their location. The number of BSPP stations selected should be based on factors such as the broadcast area coverage capabilities of the stations involved, instead of allotting one per host area. FEMA officials acknowledged the need for this type of assessment. The Department of Defense Electromagnetic Compatibility Analysis Center is preparing information for FEMA regarding BSPP station coverage capabilities, which could result in a change in the number of BSPP stations required. FEMA's current projection for needed BSPP stations is therefore questionable, and cost estimates for these stations in FEMA's plan could change accordingly.

BSPP stations appear unable to function in the event of nuclear attack

Commercial broadcast stations participating in the BSPP are expected to continue emergency operations for a period of up to 14 consecutive days under radioactive fallout conditions that might occur as the result of a nuclear attack. The BSPP provides federal funding for fallout protection, emergency generators, two-way radio communications, EMP protection, and programming equipment such as emergency turntables and microphones. FEMA expects the stations to provide other needed items, such as a 14-day supply of food, fuel, and water, as well as a nuclear attack standard operating procedure and radiological monitoring equipment that can be obtained from state civil defense organizations.

We visited 11 protected BSPP stations located in the District of Columbia, Virginia, Maryland, and Pennsylvania to determine their preparedness to perform postnuclear attack operations. We found that all of these stations had the necessary programming equipment and emergency generators, but:

--None had EMP protection.

--None had a 14-day supply of food and water.

--Ten did not have a nuclear attack standard operating procedure.

--Five did not have radiological monitoring devices.

--Four did not have an adequate fallout shelter.

--Three did not have an adequate fuel supply for the emergency generator.

--Three did not have dedicated two-way radio communication links with a nearby EOC.

We doubt that these stations could conduct effective operations after a nuclear attack under these conditions.

FEMA needs to issue BSPP policy guidance

One of FEMA's principal responsibilities is to provide emergency preparedness policy guidance. However, as of January 1983, FEMA still had not issued formal policy guidance for the BSPP. Most of the existing guidance, issued by FEMA predecessors as far back as the 1960s, does not address the BSPP as such. Many problems with the BSPP have occurred due to the lack of a coherent, detailed set of procedures that explain what the program does, how it functions, and how it interacts with other civil defense programs. For example, there are no instructions and procedures for essential personnel such as radio station operators. Also, FEMA has provided stations with little assistance toward developing a standard operating procedure for use during a nuclear attack.

FEMA officials said that draft BSPP guidance was developed in August 1982, sent to the FEMA regions for comment, and is expected to be issued in fiscal year 1984. This guidance is needed to clarify the roles, responsibilities, and functions of broadcast stations participating in the BSPP.

FEMA NEEDS TO IMPROVE DIRECTION AND CONTROL PROGRAM MONITORING

Effective direction and control systems development requires adequate monitoring. Program monitoring activities should assure that program goals and objectives are attained in a timely and consistent manner. They are also essential for acquiring and updating information on current systems status to

assess program progress, identify deficiencies, make necessary program adjustments, and prepare plans. FEMA currently does not have a system that can adequately collect information on its EOC program and the BSPP nor is it performing periodic inspections of local EOCs and BSPP stations.

FEMA program information is inadequate

The Program Status Report has been the primary means by which FEMA has monitored many of its civil defense programs. This report contains FEMA program data reported by each state and local civil defense organization. FEMA annually updated this report through state and local government verification of the data it contained. However, the report was not updated in fiscal year 1982 because, as previously stated, the Office of Management and Budget determined in fiscal year 1981 that it imposed an undue reporting burden on state and local officials. Nevertheless, FEMA continues to use and perform limited updating of the report regarding EOC status. FEMA sometimes obtains program data from other sources, such as telephone calls and occasional visits, but has relied heavily on information from the Program Status Report to develop the direction and control estimates shown in the 7-year plan and to monitor ongoing EOC development activity.

This report does not provide good support for EOC and BSPP management activities because of problems concerning data comprehensiveness, accuracy, and timeliness. The report provides almost no data regarding the BSPP, and FEMA officials said that no other functioning FEMA systems for monitoring BSPP station status exist. The data was old when it first appeared in report form because it generally took 9 to 12 months after the fiscal year end for state and local civil defense organizations to submit the data and for FEMA to put it in report format. FEMA officials also said that state and local civil defense organizations updated data without verifying actual program status, and estimated that the data was 85 percent accurate at best.

Because of these problems with the Program Status Report, FEMA program managers are now attempting to develop their own specific program data bases, but these are presently inadequate for effective monitoring of EOC and BSPP status. Our 1983 report [3] on FEMA program management further addresses problems in this area.

---

[3] The Emergency Management Assistance Program Should Contribute More Directly to National Civil Defense Objectives (GAO/GGD 83-5, Nov. 5, 1982).

EOCs and BSPP stations are not being inspected

FEMA officials said that EOCs and BSPP stations need to have periodic inspections in order to determine their readiness and ensure compliance with FEMA program objectives. Our review found, however, that neither FEMA nor the states were performing periodic inspections of these facilities.

FEMA headquarters and regional officials acknowledged the need to review EOC facility status, but told us that FEMA lacked the personnel and that periodic EOC inspections had not been conducted since the mid-1970s. State officials stated they did not perform EOC or other local direction and control system inspections because they either lacked the personnel or did not believe they were responsible for local level direction and control system performance.

According to FEMA headquarters officials, FEMA regional offices are responsible for performing periodic BSPP station inspections, but none of the FEMA regions we visited were actually conducting them. FEMA regional officials again said they had too many other program responsibilities and too few staff to conduct this activity. We also noted that while FEMA provides 100 percent funding for BSPP equipment and facilities, FEMA cannot legally inspect BSPP stations without owner permission. This occurs because the BSPP contracts with the stations and the Federal Communications Commission transfers ownership of BSPP-funded equipment to the Federal Communications Commission at the time of installation. Commission officials said that while the Commission conducts station inspections, these usually do not address the BSPP. FEMA officials told us they are negotiating with the Commission to change these contracts.

CONCLUSIONS

Although effective direction and control is essential for the implementation of U.S. civil defense plans, these programs continue to suffer from low staffing and funding levels. Two of the most important direction and control systems, EOC and the BSPP, are presently inadequate and are composed of facilities with deficiencies that would render most of them of little or no use during a nuclear attack. The EOC Program and the BSPP proposed by FEMA's 7-year plan do not have adequate development plans, contain questionable cost estimates, and need updated guidance and adequate program monitoring. State and local participation in EOC development is limited and is being adversely affected by generally inadequate local funding and disinterest in nuclear attack related civil defense. FEMA program improvement, federal funding increases, and state and local participation and funding increases are all directly interrelated and must all occur in a coordinated fashion before these programs and systems can be effective.

RECOMMENDATIONS

We recommend that the Director of FEMA:

--Reevaluate current estimates regarding the number, location, and types of EOCs needed for a national network that more closely reflects CRP requirements, population, existing state and local resources and capabilities, and local participation in civil defense. EOC program cost estimates in the 7-year plan should be revised accordingly and closely coordinated with state and local EOC cost estimates.

--Update principal civil defense policy guidance, such as the National Plan, the Emergency Operating Center Development Manual, the Emergency Communications Manual, and BSPP guidance, so that state and local governments can better plan to meet national civil defense objectives. The availability of updated program guidance would also help convince state and local governments of federal commitment to a revitalized civil defense and might encourage more state and local participation in civil defense programs.

--Emphasize the completion of detailed state EOC development plans so that the degree of probable local participation and funding of direction and control programs can be more accurately estimated.

--Reevaluate current estimates of the number of BSPP stations needed according to their broadcast area coverage capabilities and adjust BSPP cost estimates accordingly in FEMA's 7-year plan.

--Direct the establishment of an adequate system for collecting data and monitoring the status of civil defense programs and facilities at state and local levels that will ensure program compliance, identify deficiencies, and improve EOC and BSPP planning and cost estimates.

AGENCY COMMENTS AND OUR EVALUATION

FEMA agreed that estimates concerning EOC requirements needed to be reevaluated and noted that FEMA has contracted for a study to assure nationwide uniformity of state and local EOC requirements. FEMA anticipates no related problems with EOC funding until this study is completed because EOC funding requests have outweighed available federal funds and the states have only been able to fund priority projects.

We believe that the level of state and local commitment to the development of EOCs capable of nuclear attack related operations remains questionable. Federal funding for EOC development

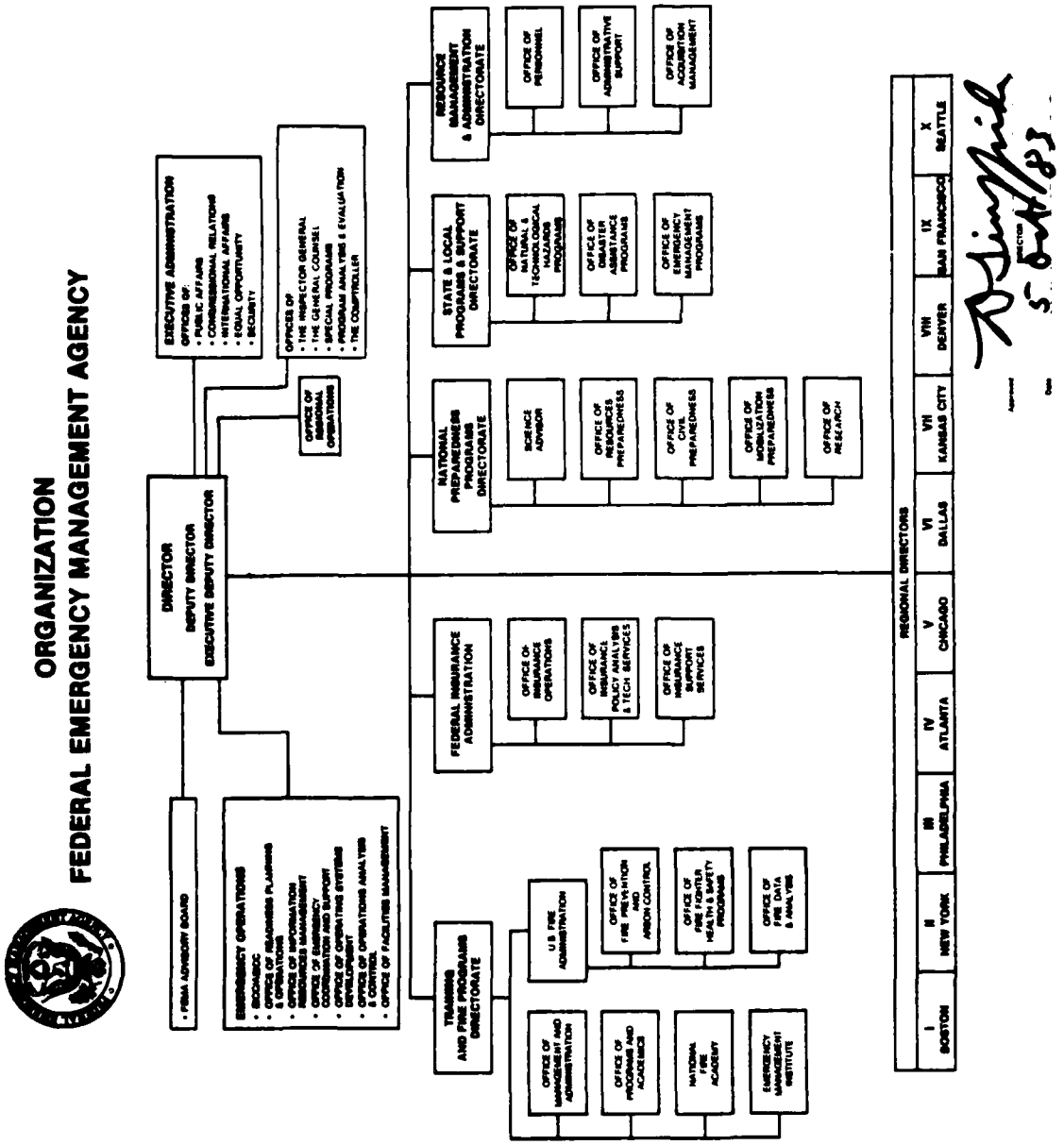
has been limited, totaling $6.5 million in fiscal year 1982. It appears that FEMA must generate a much higher level of both state and local participation and federal funding before an effective national EOC system can be developed.

FEMA acknowledged the need for EOC and BSPP guidance. It said this guidance is being developed and should be published in the near future. FEMA also acknowledged the need to develop civil defense policy guidance, possibly in the form of a national plan or planning assumptions. It said work in this area would be getting underway on a priority basis in the near future.

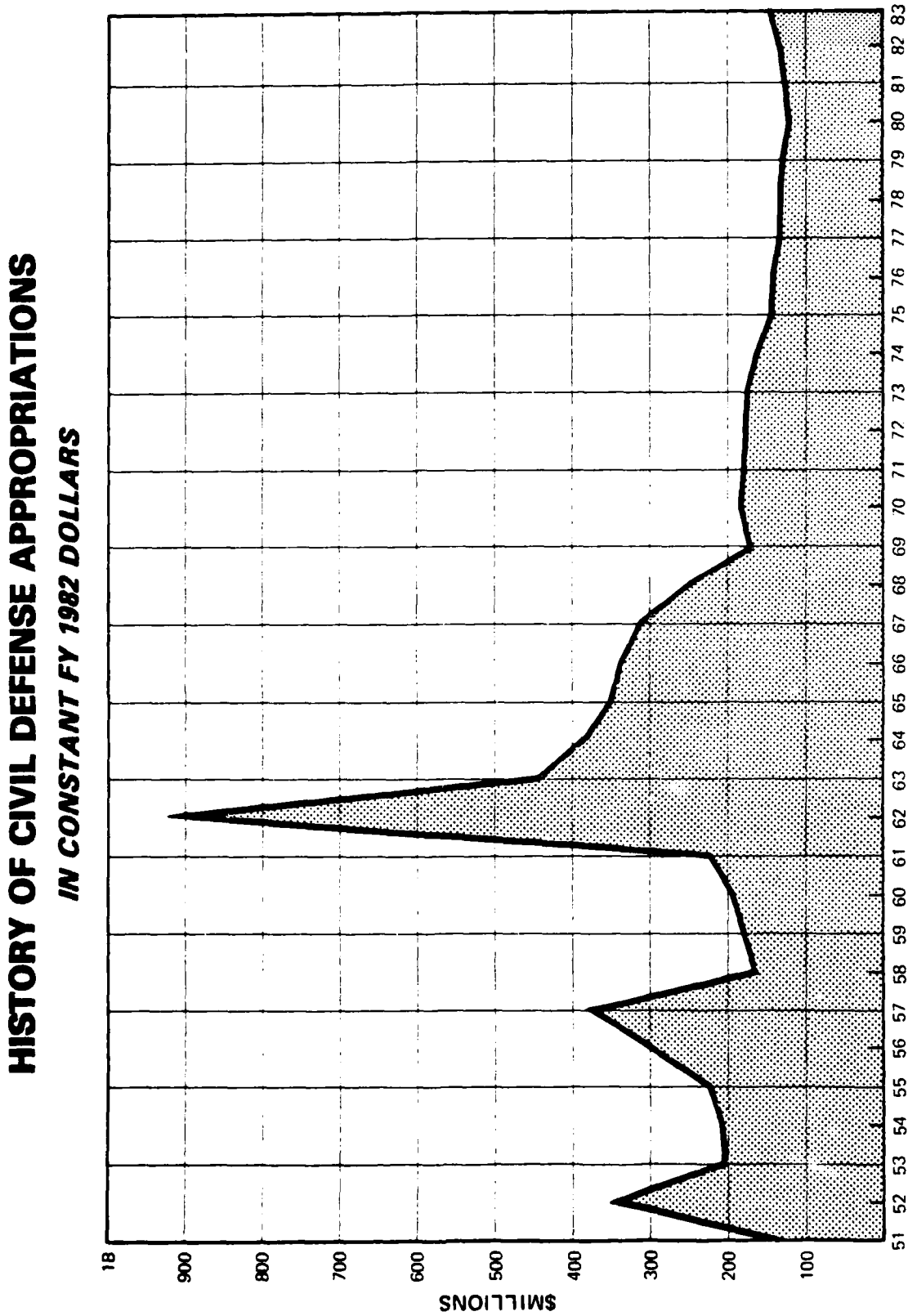
Regarding the other program deficiencies, FEMA said that corrective actions either were underway or would be addressed during fiscal year 1984 under a new program implementation strategy called the Integrated Emergency Management System. This strategy will focus and build upon preparedness infrastructure functions common to essentially all types of emergencies.

FEMA believes this approach will address many of the concerns noted in this report. For example, new comprehensive guidance is being developed for multiyear development, capability assessment, and program status reporting, which FEMA believes should result in substantial improvement in civil defense and emergency preparedness in general. This strategy is not designed to replace the 7-year plan, but it does establish a new approach to accomplishing civil defense objectives. We were not able to evaluate the effects of the Integrated Emergency Management System because it was scheduled for implementation after our review had been completed.

APPENDIX I


ORGANIZATION
FEDERAL EMERGENCY MANAGEMENT AGENCY
DIRECTOR
DEPUTY DIRECTOR
EXECUTIVE DEPUTY DIRECTOR
EXECUTIVE ADMINISTRATION
OFFICES OF:
• PUBLIC AFFAIRS
• CONGRESSIONAL RELATIONS
• INTERNATIONAL AFFAIRS
• EQUAL OPPORTUNITY
• SECURITY
OFFICES OF
• THE INSPECTOR GENERAL
• THE GENERAL COUNSEL
• SPECIAL PROGRAMS
• PROGRAM ANALYSIS & EVALUATION
• THE COMPTROLLER
OFFICE OF REGIONAL OPERATIONS
• FEMA ADVISORY BOARD
EMERGENCY OPERATIONS
• ECC/NRCC
• OFFICE OF READINESS PLANNING & OPERATIONS
• OFFICE OF INFORMATION RESOURCES MANAGEMENT
• OFFICE OF LOGISTICS SUPPORT
• OFFICE OF OPERATING SYSTEMS DEVELOPMENT
• OFFICE OF OPERATIONS ANALYSIS & CONTROL
• OFFICE OF FACILITIES MANAGEMENT
RESOURCE MANAGEMENT & ADMINISTRATION DIRECTORATE
OFFICE OF PERSONNEL
OFFICE OF ADMINISTRATIVE SUPPORT
OFFICE OF ACQUISITION MANAGEMENT
STATE & LOCAL PROGRAMS & SUPPORT DIRECTORATE
OFFICE OF NATURAL & TECHNOLOGICAL HAZARDS PROGRAMS
OFFICE OF DISASTER ASSISTANCE PROGRAMS
OFFICE OF EMERGENCY MANAGEMENT PROGRAMS
NATIONAL PREPAREDNESS PROGRAMS DIRECTORATE
SCIENCE ADVISOR
OFFICE OF RESOURCES PREPAREDNESS
OFFICE OF CIVIL PREPAREDNESS
OFFICE OF MOBILIZATION PREPAREDNESS
OFFICE OF RESEARCH
FEDERAL INSURANCE ADMINISTRATION
OFFICE OF INSURANCE OPERATIONS
OFFICE OF INSURANCE POLICY ANALYSIS & TECH SERVICES
OFFICE OF INSURANCE SUPPORT SERVICES
TRAINING AND FIRE PROGRAMS DIRECTORATE
U.S. FIRE ADMINISTRATION
OFFICE OF FIRE PREVENTION AND ARSON CONTROL
OFFICE OF FIRE FIGHTER HEALTH & SAFETY PROGRAMS
OFFICE OF FIRE DATA & ANALYSIS
OFFICE OF MANAGEMENT AND ADMINISTRATION
OFFICE OF PROGRAMS AND ACADEMICS
NATIONAL FIRE ACADEMY
EMERGENCY MANAGEMENT INSTITUTE
REGIONAL DIRECTORS
I BOSTON
II NEW YORK
III PHILADELPHIA
IV ATLANTA
V CHICAGO
VI DALLAS
VII KANSAS CITY
VIII DENVER
IX SAN FRANCISCO
X SEATTLE

APPENDIX II


HISTORY OF CIVIL DEFENSE APPROPRIATIONS
IN CONSTANT FY 1982 DOLLARS
$MILLIONS
1B
900
800
700
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500
400
300
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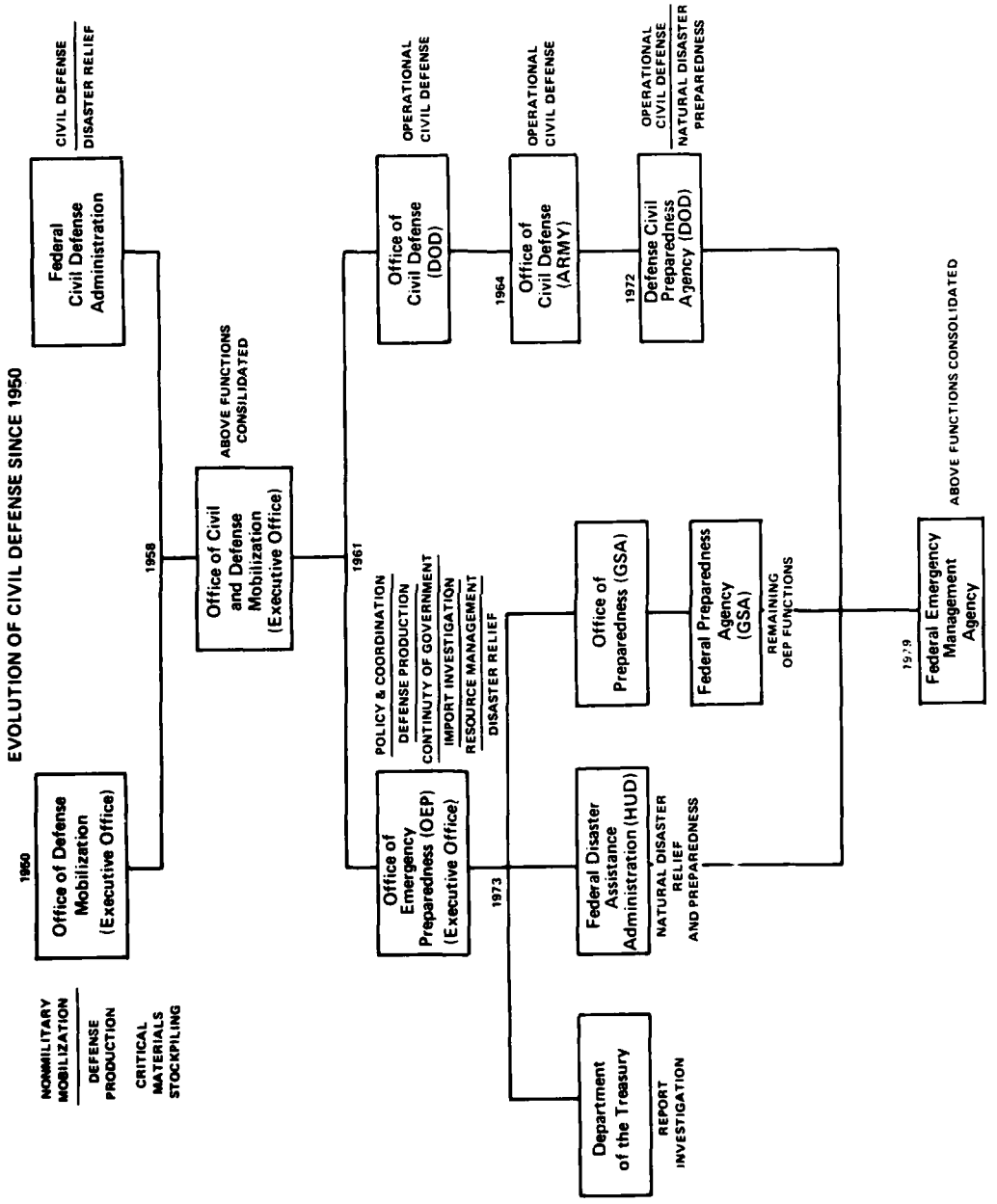
100
51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83
FISCAL YEAR

APPENDIX III



March 8, 1982

CIVIL DEFENSE BUDGET - FY'S 1982 through FY 1989
(Millions of FY 1983 Dollars, for FY's 1983-1989)

	FY 1981	FY 1982 Enacted	FY 1983 Request	FY 1984	FY 1985	FY 1986	FY 1987	TOTAL FY83-87	FY 1988	FY 1989	TOTAL FY83-89T	MAINT
EMER PLNG & ASST												
1. Civil Defense												
a. Research												
- CD Res ("basic")	unk	5.075	18.074	7.300	5.100	7.500	7.500	45.474	7.500	7.500	60.474	7.500
- Research Industry	---	.737	---	3.900	2.200	---	---	6.100	---	---	6.100	---
- Sys Int & App	unk	---	.838	.400	.500	.500	.500	2.738	.500	.500	3.738	.500
- Sys Development	unk	2.905	3.128	3.400	2.200	2.000	2.000	12.728	2.000	2.000	16.728	2.000
TOTAL RESEARCH	7.785	8.717	22.040	15.000	10.000	10.000	10.000	67.040	10.000	10.000	87.040	10.000
b. Trng & Ed (plus PA)												
- Shel Mgmnt	.425	.455	1.400	2.400	4.600	4.600	3.200	16.200	1.100	1.100	18.400	1.100
- D&C Exercises	1.178	1.178	4.800	5.800	6.900	8.000	9.000	34.500	14.000	14.000	62.500	14.000
- Cr Cit Trng	.800	.800	1.100	1.300	2.200	3.300	3.800	11.700	3.800	3.800	19.300	3.800
- Other T&E	7.210	7.730	7.710	8.700	9.300	10.800	11.300	47.810	11.300	11.300	70.410	10.800
(Subtotal T&E)	(9.613)	(10.163)	(15.010)	(18.200)	(23.000)	(26.700)	(27.300)	(110.210)	(30.200)	(30.200)	(170.610)	(29.700)
- Pub Info	---	---	1.500	1.900	2.300	2.600	2.900	11.200	2.900	2.900	17.000	2.400
TOTAL T&E/PA	9.613	10.163	16.510	20.100	25.300	29.300	30.200	121.410	33.100	33.100	187.610	32.100
c. TeleCom & Warning												
- T&W (basic")	7.302	10.305	10.947	45.800	52.800	36.200	31.000	176.747	83.600	37.900	298.247	37.900
- COG Commo	---	---	4.132	---	---	---	---	4.132	---	---	4.132	---
- S&L Commo	---	---	.313	.400	.400	.400	.400	1.913	.400	.400	2.713	.400
- C&W Pol (BSPP)	---	---	9.860	10.000	11.500	20.000	30.000	81.360	44.130	14.000	139.490	6.500
TOTAL T&W	7.302	10.305	25.252	56.200	64.700	56.600	61.400	264.152	128.130	52.300	444.582	44.800
TOTAL CD/EMER PLNG & ASST	24.700	29.185	63.802	91.300	100.000	95.900	101.600	452.602	171.230	95.400	719.232	86.900

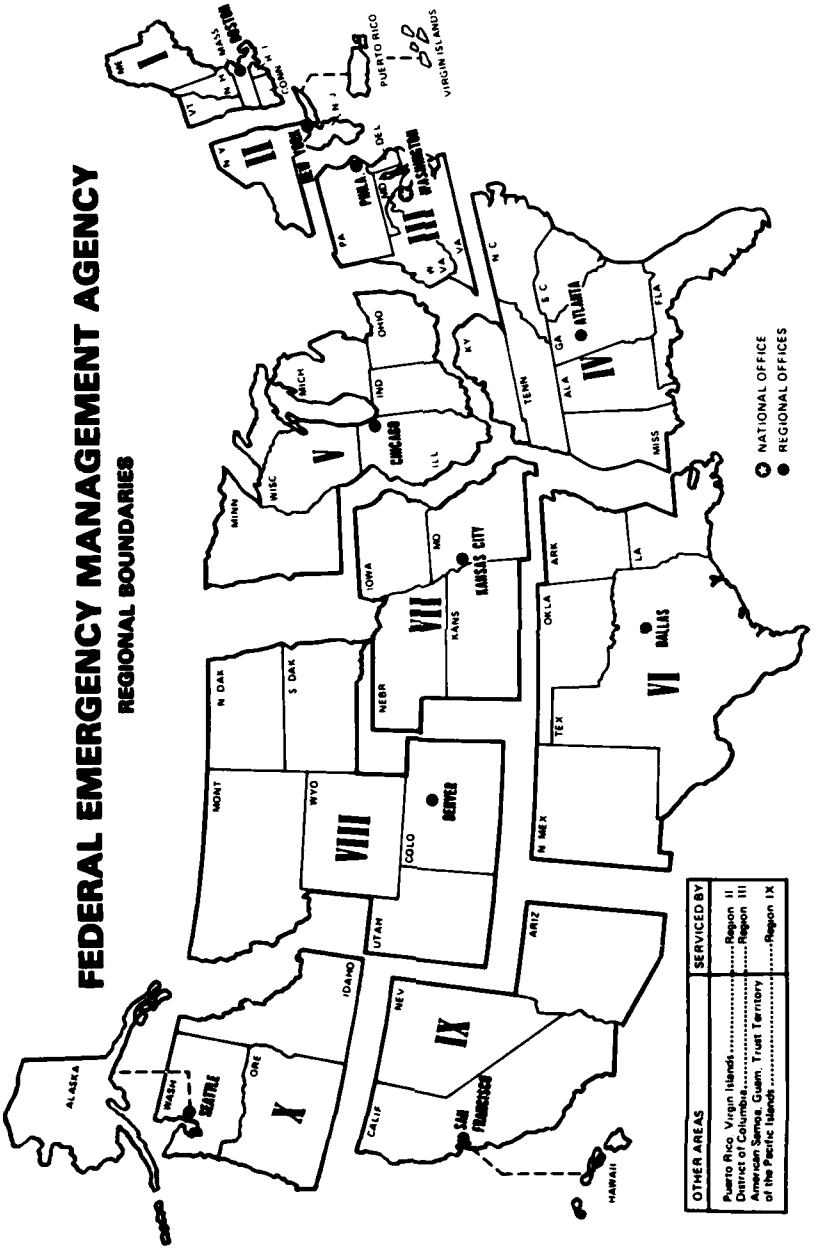
APPENDIX IV

CIVIL DEFENSE BUDGET - FY'S 1981 through FY 1987 (Continued)
(Millions of FY 1983 Dollars, for FY's 1983-1989)

	FY 1981	FY 1982 Enacted	FY 1983 Request	FY 1984	FY 1985	FY 1986	FY 1987	TOTAL FY83-87	FY 1988	FY 1989	TOTAL FY83-89	MAINT
STATE & LOCAL ASST												
I. Civil Defense												
a. State & Local Asst												
- Emer Mgmt Asst	37.006	43.940	49.955	54.300	58.300	64.000	64.000	290.555	64.000	64.000	418.555	64.000
- Maint/Svcs	1.079	2.297	6.953	7.700	8.700	9.700	9.700	42.753	9.700	9.700	62.153	9.700
- Suppt Mtls	1.750	3.475	9.010	9.500	10.500	12.000	13.800	54.510	15.700	15.700	85.910	15.700
- Suppt Act	.270	.270	.402	.500	.500	.500	.500	2.402	.500	.500	3.402	.500
TOTAL S&L ASST	40.104	49.982	66.320	72.000	78.000	86.200	87.700	390.220	89.900	89.900	570.020	89.900
b. Radiol Def	6.185	8.950	28.950	31.400	33.000	38.000	44.000	176.350	109.380	109.380	394.110	28.100
c. Nuc Attk Civ Prot												
- Nat Shel Survey	2.631	3.577	12.060	12.300	14.900	13.900	5.400	58.560	5.400	5.400	69.360	5.400
- Nuc Civ Prot	6.661	8.060	14.300	30.200	63.100	71.600	66.000	235.200	53.200	19.400	307.800	19.400
- Cr Shel UpGd Plns	---	---	.560	1.600	3.600	7.500	20.300	33.560	62.800	8.600	104.960	8.600
- Shel Marking	---	---	1.000	1.100	1.100	1.100	1.100	5.480	4.400	4.400	14.280	1.100
- Shel Stocking	---	---	1.000	1.100	1.100	1.100	7.000	11.300	513.890	648.690	1173.960	114.100
- Shel PVK's	---	---	1.160	1.200	1.200	1.200	3.000	7.760	53.900	53.900	115.560	10.800
- NCP Inst to Pub	---	---	2.160	3.200	4.200	5.100	6.800	21.260	6.600	6.600	34.460	6.600
- Key Wrkr Shelter	---	---	10.920	7.100	---	---	---	18.020	---	---	18.020	---
- Indust Prot	---	---	1.120	1.000	---	---	---	2.120	---	---	2.120	---
- IMA (MOBDES)	1.056	---	1.760	1.900	2.200	2.700	2.700	11.260	2.700	2.700	16.660	2.700
TOTAL NCP	11.147	11.637	46.200	60.700	81.400	104.200	112.100	404.600	702.890	749.690	1857.180	168.700
d. Emerg Op Centers	2.750	6.545	14.870	22.000	29.000	41.000	55.000	161.870	85.000	114.030	360.900	13.200
e. C&W (BSPP)	.901	2.591	---	---	---	---	---	---	---	---	---	---
TOTAL S&L ASST	61.087	79.705	156.340	186.100	221.400	269.400	298.800	1132.040	987.170	1063.000	3182.210	299.900
SALARIES & EXPENSES												
a. Civil Defense	23.013	23.780	32.190	32.600	33.600	34.700	39.600	172.690	41.600	41.600	255.890	41.600
GRAND TOTAL	108.802	132.678	252.340	310.000	355.000	400.000	440.000	1757.340	1200.000	1200.000	4157.340	428.400

APPENDIX IV

APPENDIX V



November 1979
FEMA Chart No. 3

SOURCE: FEMA

Federal Emergency Management Agency
Washington, D.C. 20472

MAY 31 1983

Mr. Donald J. Horan
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Horan:

Thank you for the opportunity to review and comment upon your draft report on selected elements of the Administration's proposed plan for revitalizing the U.S. Civil Defense Program.

Attachments A and B contain specific comments on the issues for the subcommittee that are identified in the draft and on the recommendations that are included. Attachment C contains line-by-line and general comments on the Digest and other major sections. In addition, some significant general points are set forth further on in the body of this letter.

Before moving to those points, however, we appreciate that the draft makes clear that (as was also described in the GAO report of 1977) for too many years this country has lacked a comprehensive civil defense policy, activities in this area have received little interest and funding, and civil defense in general needs to be better planned and coordinated at all levels. We at the Federal Emergency Management Agency (FEMA) could not agree more with these conclusions, and it is in response to the vital national needs in this area that the Reagan Administration has developed the enhanced program which was proposed to the Congress last year and earlier this year. This proposed program not only sets forth an approach to meeting the goals included in President Reagan's 1982 National Security Decision Directive; it also ties directly to the mandate of the Congress as reflected in the 1981 Amendments to the Civil Defense Act of 1950.

We are also pleased that the draft report acknowledges that FEMA has made improvements in the Civil Defense Program. At the same time, we agree with the points made in the draft to the effect that some elements of the 7-year plan need further refinement and improvement and that there is inadequate guidance, monitoring, and control in some areas of the program. In large part this is due to the minimum staff resources available to administer the program at this time (and over an extended period of years for that matter). As is noted in the draft, we are very much aware of needs for improvement and have initiated significant actions to correct a number of the most serious deficiencies. With regard to the point on program refinement and improvement, we are constantly reviewing the program and will modify it as the need becomes apparent. Guidance, monitoring, and control in particular are recognized as vital elements of a truly effective program. We will be working to strengthen these functions as best we can, given our current limited staff resources, and these areas will be a priority for application of any additional resources that might become available in the future.

APPENDIX VI

The draft, in referring to the industrial protection area which is now under study, refers to billions of dollars of additional costs that could be incurred in that area, depending upon the option pursued. We assume, then, that the point being made on page iii of the Digest section with regard to the possibility that implementation costs for the proposed program will likely be some millions of dollars greater than those shown in the plan, refers to other program elements. Some cost adjustments will no doubt be made as we learn more and as the program complexion is altered over time. By-and-large, it is our feeling that the cost pattern for the program as originally conceived was carefully developed and reflects both program experience and estimates based on our best understanding. Where, in our opinion, there is any question of numbers of items or facilities required, their locations, unit costs, and the like, we are, or will be, undertaking special analyses to either verify or modify the base from which our cost calculations are made. Where need for change becomes apparent, we will adjust the program funding profile as required.

There are two general points to which your attention is directed as you consider our comments. These are:

- Integrated Emergency Management System (IEMS)

  It is our feeling that any report on the administration of the Civil Defense Program that does not recognize the fact that FEMA has initiated the development of an integrated approach to the management of the functions for which it is responsible is incomplete. We fully understand that your reports must deal with "what is" as opposed to "what is coming," and we feel that our adoption of the integrated approach meets that criterion. We instituted transition activities to move in that direction while your study was still underway.

  Our movement to this new program implementation strategy results from our assessment of our experiences in administering FEMA activities since this Administration took office. It reflects our conclusion that the only sensible way to develop a truly effective national system for dealing with the full range of domestic and national security emergencies is to focus on, and build upon, those preparedness infrastructure functions that are common to essentially all types of emergencies. These include: warning systems, communications, direction and control, shelter, health and medical, and population movement. At the same time, capabilities for dealing with those special characteristics that apply to one or a few emergency situations will be developed as well.

  The management approach being employed will directly address a number of concerns about the current status of the program that we have and which are expressed in your draft report. For example, we are developing at this time new and comprehensive guidance on hazard assessment, capability assessment, multiyear development plans, and program status reporting which, when implemented in the coming fiscal year, should result in substantial improvement in the program across-the-board.

APPENDIX VI

The integrated emergency management approach has, in our opinion, so much potential for heightening our national emergency management capability and it bears so directly on the management of civil defense activities, it deserves to be discussed in the report. We would, of course, be pleased to furnish whatever detail would be helpful to your staff in discussing this approach in an appropriate manner.

° Protection of Industrial Capability

Our concern here is that the draft report implies throughout, and in at least one reference seems to state as fact, that industrial protection-related activities will result in an increase in the projected program of as much as $6.0 billion. While such could conceivably be the case, depending upon the outcome of analyses and option development activities which are underway at this time, no decisions have as yet been made in this regard. It is clear that current civil defense activities are deficient in that inadequate resources have precluded any significant activities in this critical area. However, the range of options likely to emerge from the analysis now underway will in all probability be quite wide, with similar wide-ranging resource requirements. Thus, it is important that all mention of the status of, and prospects for, industrial protection activities be made clear throughout the report.

We particularly appreciate the fact that the report once again highlights the need for heightened civil defense capability in this country, describes the long neglect of this important area, and vividly portrays the challenge that we face as a nation in building a more effective national emergency management system.

FEMA has accepted this challenge--we hope that the Congress acts favorably on our request for the resources without which the significant improvement called for in the Civil Defense Act, last year's National Security Decision Directive and your draft report cannot be achieved.

We welcome your report as a useful independent review of a portion of the proposed program for civil defense. While we, of course, do not necessarily agree with all the conclusions reached, we do value the time, thought, and effort that went into the study and will take positive actions appropriate to the points brought forth.

We look forward to the issuance of the report in its final form.

Sincerely,

Louis O. Giuffrida
Director

GAO Note: Attachment C, which contained clarifying language, has been deleted and we have made changes in the report where needed.

APPENDIX VI

GAO DRAFT REPORT ON 7-YEAR CD PROGRAM

FEMA COMMENTS ON ISSUES FOR THE SUBCOMMITTEE

1) Whether FEMA should continue to place program emphasis on the completion of crisis relocation plans for counterforce and other less heavily populated risk areas, or place program emphasis on completing crisis relocation plans first for heavily populated urban risk areas where they have the greatest life saving potential.

Comment

o This point is rather moot as it relates to whether counterforce area planning should be emphasized, since CRPs in counterforce areas have been a priority for the past 6 years--a direction set in the prior Administration with the urging of FEMA's House Appropriations Subcommittee. By the end of FY 1982, 500 of the 716 required initial CRPs for counterforce areas were completed (i.e., 70 percent of requirements). By the end of FY 1983, with the momentum in this area, this figure is expected to be close to 100 percent. The report focuses on the need to get on with the development of evacuation planning for the larger cities. Approaches to this issue will receive priority attention as our program planning proceeds.

2) Whether FEMA should select some representative risk and host areas and complete all civil defense program elements in these areas so as to develop prototypes to (1) demonstrate program workability and generate Federal, State and local funding and interest for civil defense and (2) test civil defense concepts and identify problems that might affect program funding considerations.

Comment

o We are pleased to note this issue since it supports one of the basic concepts we are developing as we proceed with Agency planning during our transition into the implementation of the Integrated Emergency Management System approach in FY 1984. Exemplary projects have been proposed by FEMA and are included in the FY 1984 budget submission for the Civil Defense Program.

3) Whether FEMA has established adequate systems for collecting data and monitoring the status of civil defense programs and systems at regional, State and local levels so as to ensure program compliance, identify deficiencies, and develop adequate plans and budget estimates.

Comment

o We clearly agree with the need for such and have already initiated action in FY 1983 to implement such a system as a major feature of our Integrated Emergency Management System approach.

GAO DRAFT REPORT ON 7 YEAR CD PROGRAM

FEMA COMMENTS ON RECOMMENDATIONS

NUCLEAR ATTACK CIVIL PREPAREDNESS

We recommend that the Director of FEMA:

--Direct the FEMA regions to monitor the degree to which local jurisdictions with completed initial CRPs are refining them and developing the operational procedures and coordination needed to make the plans operable. FEMA could thus better identify CRP implementation problems, better evaluate the extent of local civil defense participation, and direct limited resources to areas where they would be more effectively used.

Comment

o FEMA will initiate actions to assess a jurisdiction's capability for implementing its nuclear attack preparedness plans as well as natural and technological hazards by stressing increased testing and exercise programs.

DIRECTION AND CONTROL

We recommend that the Director of FEMA:

--Revise current estimates regarding the number, location, and types of EOCs needed for a national network in a fashion that more closely reflects CRP requirements, population, existing State and local resouces and capabilities, and local participation in civil defense. EOC program cost estimates in the seven year plan should be revised accordingly and coordinated more closely with State and local EOC cost estimates.

Comment

o Beginning in FY 1981, FEMA requested that the States, in cooperation with their localities, provide number and cost estimates for future EOC requirements. These estimates are updated yearly in response to items such as population shifts and new sources of potential hazards. FEMA has also contracted for a study to be conducted over the next year to assure nationwide uniformity of these State and local requirements. Based on these two sources of information, future EOC requirements (including EOC distribution and cost estimates) will be as realistic as is possible when dealing with long-range plans. Until this information is fully gathered and analyzed, we foresee no problems since each year EOC funding requests greatly outweigh available dollars and the States and Regions are able to fund only priority projects in any event.

--Update principal civil defense policy guidance such as the National Plan, the Emergency Operating Center Development Manual (MP-38), the Emergency Communications Manual (CPG 1-18), and BSPP guidance so that State and local governments can better plan to meet national civil defense objectives. The availability of updated program guidance would also do much to convince State and local governments of Federal commitment to a revitalized civil defense and might encourage more State and local participation in civil defense programs.

Comment

o FEMA is aware of the need to develop and promulgate updated civil defense policy guidance, possibly in the form of a national plan or planning assumptions. Work in this area will be getting underway on a priority basis in the immediate future. With regard to the EOC and communications manuals and the BSPP guidance, we agree as to the need. In all three of these latter cases, work is underway and is scheduled to be completed in FY 1984. (See Attachment C, page 3, Direction and Control.)

--Emphasize the completion of detailed State EOC development plans so that the degree of probable local participation and funding of direction and control programs can be more accurately estimated.

Comment

o These were initiated by FEMA in FY 1981 and will be expanded under IEMS as part of the multiyear development plan (see Attachment C).

--Revise current estimates of the number of BSPP stations needed according to their broadcast area coverage capabilities, and adjust BSPP cost estimates accordingly in FEMA's seven year plan.

Comment

o Agree--planning to accomplish.

--Direct the establishment of an adequate system for collecting data and monitoring the status of civil defense programs and facilities at State and local levels that will ensure program compliance, identify deficiencies, and improve EOC and BSPP planning and cost estimates.

Comment

o We agree with the need and, as we have indicated in our comment to the third issue in Attachment B, have already initiated action in FY 1983 to supplement the system as a major feature in our Integrated Emergency Management System approach.

RADIOLOGICAL DEFENSE

We recommend the Director of FEMA:

--Direct FEMA Regional officials to review reported RADEF equipment stock levels for accuracy and shortages so that current stock levels can be determined and equipment needs more accurately identified.

Comment

o Agree

--Direct FEMA Regional Officials to review the adequacy of State RADEF equipment distribution plans and exercises so that the ability of the States to use Federally funded RADEF equipment can be determined.

Comment

o Agree.

--Update RADEF guidance and course material so that radiological defense officers can more readily obtain current FEMA policy guidance on radiological defense and receive training that more accurately portrays and prepares them for the conditions likely to be experienced in a nuclear attack.

Comment

o Agree. Action already underway.

--Develop a central information system for determining the status, location, and training needs of individuals receiving training for RADEF program implementation. Such a system is needed so that FEMA can evaluate U.S. ability to implement radiological defense training and support that would be needed in the event of a nuclear attack, identify training needs, and develop more accurate Radiological Defense program cost estimates and plans.

Comment

o Agree.

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