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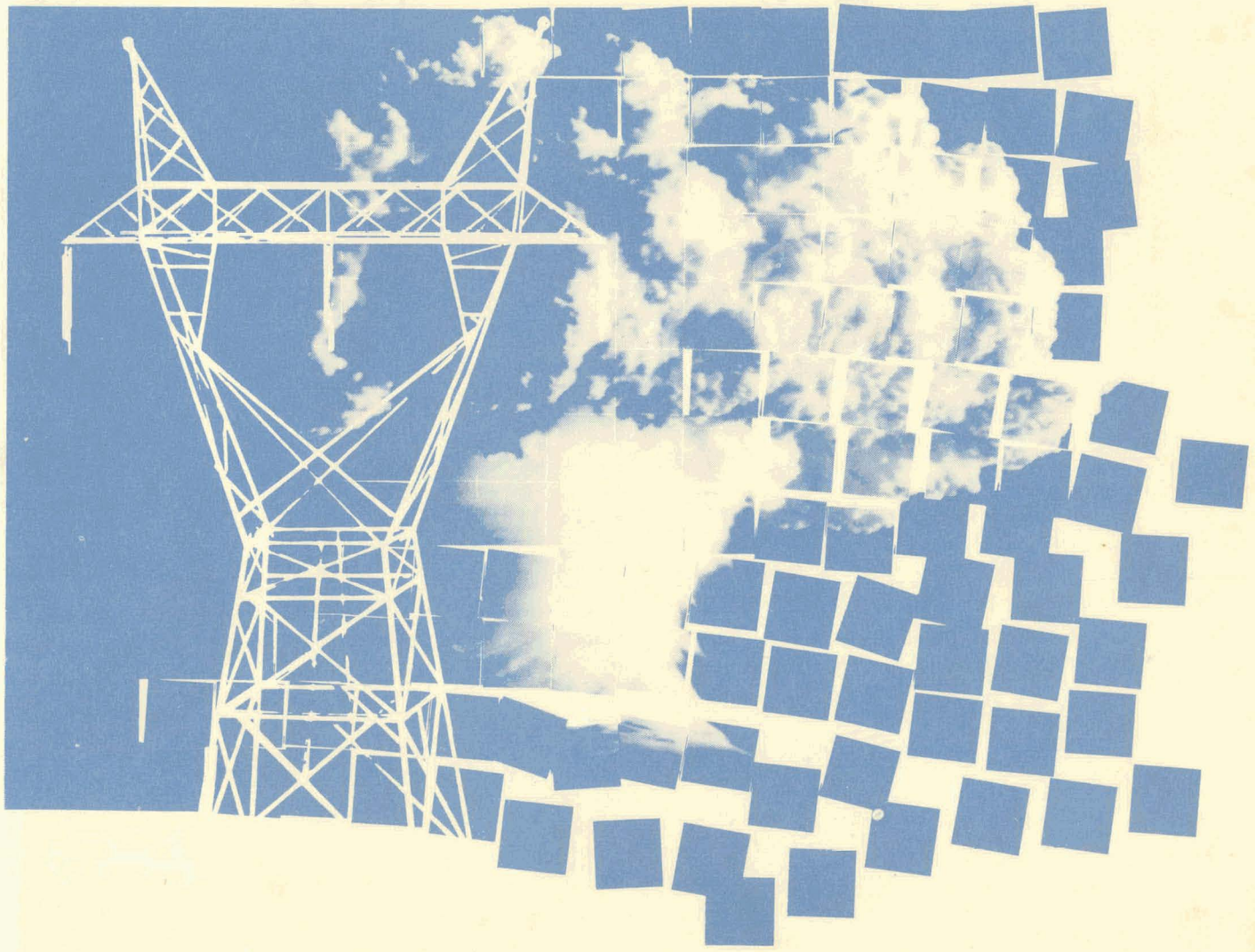
ELECTRIC POWER EMERGENCY HANDBOOK



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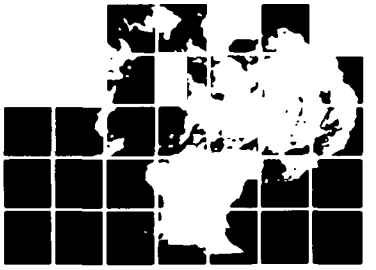

Preface

National mobilization is at best a cumbersome and lengthy process; expansion of production to maximum levels can be delayed through serious imbalances and organizational difficulties. In addition the onset and recognition of a national emergency are likely to occur much faster than mobilization can proceed.

The availability of electric power is critical to national survival and recovery for both military and civil functions, and it is necessary to ensure the supply of electric power during national emergencies. Prudent preparations begin with legal authorization to proceed, an organizational structure, and procedures which outline a general approach. Authority is grounded in various Acts of Congress and Executive Orders. The organization exists in the Emergency Electric Power Administration field structure, although the federal entity has changed in basis and character. Procedures flow from the National Plan, with the EEPA Handbook providing the interpretive guidelines for operating procedures that are unique to electric power. State plans will be measured for consistency with the EEPA Handbook.

The Emergency Electric Power Administration's Emergency Operations Handbook is designed to provide guidance to the EEPA organization. It defines responsibilities and describes actions performed by the government and electric utilities in planning for, and in operations during, national emergencies. The EEPA Handbook is reissued periodically to describe organizational changes, to assign new duties and responsibilities, and to clarify the responsibilities of the government to direct and coordinate the operations of the electric utility industry under emergencies declared by the President. This Handbook is consistent with the assumptions, policies, and procedures contained in the National Plan for Emergency Preparedness.

The survival and recovery of electric power systems are of concern to both the government of the United States and the nation's electric power industry. The Secretary of Energy has been tasked by the President with the responsibility for planning (in conjunction with the Federal Emergency Management Agency) to provide adequate electric power to meet all emergency situations. Electric utilities, which are generally the sole source of electricity, are responsible for maintaining continuity of electric power supply to meet emergency needs. Consequently, the government and industry have formed a voluntary partnership to develop an effective electric power emergency preparedness plan. It is the responsibility of the Secretary of Energy to ensure effective coordination between government and industry in the event of a declared national emergency.

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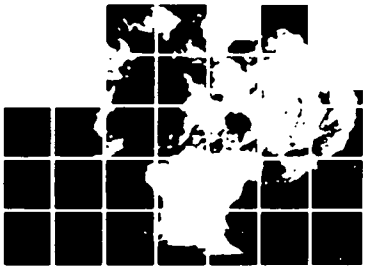

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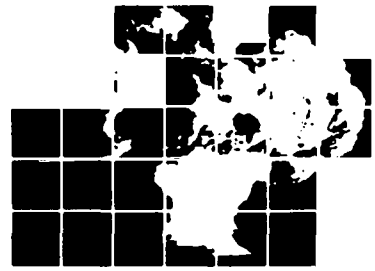


Basic Plan

I. Introduction

Emergencies take many forms: accidents, acts of God, destructive (or coercive) vandalism, international incidents, limited war, general war. Conventional procedures for responding to the first three are available and usable with some confidence for a variety of circumstances. The last three are less likely to occur and are not at all well-defined; unfortunately, these emergencies will be most disruptive and very difficult to deal with.

The purpose of this plan is to provide some insight into the issues and concerns arising from national emergencies and to establish an organizational and technical framework for responding to emergency conditions. It is not the purpose of this plan to be an inflexible collection of rules and regulations. Rather, the rules and regulations referenced herein are provided more in the spirit of guidance. Each EEPA region is recognized as being unique in geographic distribution of facilities, dependence upon energy types and sources, nature and distribution of load, and in the procedural and legal instruments which bind the separate utilities into power pools for reasons of economy and reliability. The secondary purpose of this plan, therefore, is to illuminate these differences and their impact on the development of prudent emergency preparations.

The Basic Plan is succinct, and the bulk of the detail is to be found in the Appendices. EEPA expects to revise the Basic Plan infrequently and the Appendices as necessary.

II. Organization and Responsibilities

A. Legislative Base (full text in Appendix I)

1. Statutory authorities

a. Defense Production Act of 1950, P.L. 774, as amended, authorizes the use of priorities and allocations for materials and facilities; authorizes financial assistance for expansion of productive capacity and supply; provides for the employment of persons of outstanding experience and ability for emergency functions; and allows the use of voluntary agreement to ensure essential production.

b. Federal Civil Defense Act of 1950, P.L. 920 provides for a system of civil defense for the protection from attack of life and property in the United States. The responsibility for civil defense shall be vested jointly in the Federal Government and the several States and their political subdivisions. The Federal Government provides direction, coordination, guidance, and necessary assistance and provides for procurement, by condemnation or otherwise, of material and facilities for civil defense.

c. National Security Act of 1947, P.L. 253, as amended assigns to the Office of Emergency Preparedness the functions of advising the President on the coordination of military, industrial, and civilian mobilization. Among the areas covered are: use of the nation's manpower, material, and industrial resources; maintenance, stabilization, and adjustment of the civilian economy;

unifying federal agency activities concerned with production, procurement, distribution, or transportation of supplies, materials, and products; potential supplies of, and potential requirements for, manpower, resources, and productive facilities; reserves of strategic and critical material and the strategic relocation of industries, services, government, and economic activities.

2. Executive Orders

a. Executive Order 11490, as amended by E.O. 11921, assigns national emergency planning and preparedness functions to the several departments and agencies of the Federal Government.

b. Executive Order 12148 establishes the Federal Emergency Management Agency, defines the Agency's authorities and responsibilities, and transfers the functions of various other federal agencies.

3. Defense Mobilization Orders

a. DMO 3, "Defense Production: Priorities and Allocations Authorities," establishes policy guidance in accordance with Section 101 of Executive Order 10480 and Section 401 of Executive Order 11051; delegates priority and allocation authorities in accordance of Section 201 of Executive Order 10480, as amended; delegates other authorities under the Defense Production Act of 1950, as amended.

b. DMO 4, "Guidance on Priority Use of Resources in Immediate Postattack Period," lists items essential to national survival; provides guidance to Federal, State and local governments on the priority and use of post-attack resources.

c. DMO 11,"General Policies for Strategic and Critical Materials Stockpiling."

B. Federal Agencies

1. Federal Emergency Management Agency

a. Organization: FEMA, an independent agency reporting directly to the President, has incorporated entirely the organization and functions of the Defense Civil Preparedness Agency (DOD), the Federal Disaster Assistance Administration (HUD), and the Federal Preparedness Agency (GSA). FEMA is composed of a headquarters organization in Washington, D.C. and ten Federal regions.

b. Responsibilities: The Federal Emergency Management Council, chaired by the Director of FEMA, establishes overall policy guidance and direction for the national civil preparedness effort. Reponsibilities of FEMA include: coordination of national planning for civil defense and mobilization; emergency resource management; disaster relief and emergency assistance to State and local governments; development and operation of a national civil defense warning and communications system.

2. Emergency Electric Power Administration, Department of Energy

a. Organization: The EEPA organization consists of a small Headquarters group and a widely de-centralized field organization. The EEPA field structure consists of nine geographical power areas whose boundaries are related to coordinated power pools and are contiguous with the National Electric Reliability Council (NERC) Regions, plus Hawaii, Alaska, Puerto Rico, and the Virgin Islands (see Appendix B). The field organization is composed of persons presently employed in the electric power industry. The organization of each power area consists of an EEPA Area Director, assisted by one or more Deputy Directors, and Regional Power Liaison Representatives who are appointed by the Secretary of Energy as Special Government Employees Without Compensation (WOC). The EEPA Area Director, in consultation with the EEPA Administrator, appoints State Power Liaison Representatives and Major Utility Representatives.

b. Responsibilities: EEPA is the federal resource manager for electric power in the event of a declared national emergency. EEPA's responsibilities include: prior planning for emergency preparedness in electric power; allocation of available power during emergency situations; determination of priorities for curtailment and restoration of electric power. EEPA is the claimant agency for all electric power. (See Appendix F.)

C. State and Local Governments

1. Pre-emergency responsibilities: State and local governments are responsible for preparing plans and procedures for disaster preparedness, emergency operations, and state resource management. Such plans should be compatible with federal guidelines and plans. In addition, State and local governments should coordinate with other governmental entities, federal regions, and private utilities in order to ensure efficient operations during a national emergency.

2. Emergency actions: State and local governments will be responsible

for the allocation of electric power within the guidelines and resource categories specified by the Federal Government. In addition, they will be responsible for the local enforcement of curtailment orders as required by national priorities.

D. Electric Utilities. Electric utilities will be responsible for the efficient operation of facilities, damage assessment and reporting and restoration of damaged facilities under the guidance of EEPA. Within their capabilities and operating under federal guidelines, utilities would comply with requests from local, state, and Federal agencies to supply electric power for essential uses, invoking mutual aid agreements and coordinating actions with state and federal officials, as appropriate.

III. Mission and Situation

A. The mission of EEPA is to develop and maintain an adequate mobilization base and organization for electric power capable of meeting defense and essential civilian electric power requirements under a declared national emergency.

B. Situation

1. War (limited or general) with a foreign power would disrupt the normal operation of the American economic system, and an actual attack upon the United States would add physical damage to that disruption. An exchange of nuclear weapons at various intensity levels would greatly increase the damage to production facilities and the economic infrastructure.

a. It would be counterproductive for an enemy to target all of the nearly 3,000 electric utilities in the United States. However, the relatively small number of electric utilities that supply the largest fraction of the nation's bulk power should be considered as high value targets. Blast and collateral damage could disrupt generation, transmission, distribution, and communication systems. Although large generators are relatively impervious to blast effects, buildings and control systems are not. Damage to associated structures and components could render a generator inaccessible or inoperable.

b. Electro-magnetic pulse, associated with high-altitude nuclear detonations, can damage control, communication, and computer systems.

c. Fallout radiation hazard and casualty losses among trained personnel could impede recovery operations.

2. Declared national emergency. General mobilization prior to hostilities or other large-scale emergencies would affect the strategic capabilities of the nation. Both cases would require the allocation of scarce resources and the re-ordering of priorities for the use of industrial production and raw materials in the pursuit of national goals.

3. Recovery and reconstruction will require priority decisions reflecting national interest. Prior planning and identification of system vulnerabilities can substantially reduce the impact of the disruption in manpower, materials, and industrial productive capabilities caused by an enemy attack.

C. Assumptions and Definitions

1. A "declared national emergency" is a declaration by the President of the United States invoking certain emergency authorities granted by Congress in order to deal with circumstances (such as war or major catastrophe) that pose a serious threat to national survival.

2. Emergency electric power refers to all forms of electric power, including the generation, transmission, distribution, and use thereof. The term is applied to all electric power capability, regardless of ownership, except that of plants owned and operated by the Department of Energy and at military bases.

3. The war powers of the Federal Government are supreme, and it is a primary objective of the government to develop a plan to enhance the survival of all states and territories. All pre-attack planning and post-attack decisions on electric power must be directed toward the goals of national survival and recovery.

4. A nuclear attack may cause a breakdown in communications and control, isolating states and regions from the Federal Government and from each other. State and local governments will enforce federal and state laws in support of national objectives. In determining priorities for electric power use, state and local governments would be guided by established federal policies.

5. Subject to emergency controls and regulations, the provision of electric power and the construction, operation, maintenance, and repair of electric power facilities would remain in the hands of owners and operators. The distribution of electric power would continue through normal channels to the extent possible.

IV. Concept of Operations

A. Pre-Emergency Period

1. Develop emergency plans and preparedness programs, to include vulnerability assessments and mitigation of attack effects.

2. Maintain field organization through selection and training of personnel; conduct exercises for training and evaluation.

3. Appoint electric utility personnel as WOC employees.

B. Emergency Period

1. Expand Headquarters staff; activate field organization on a full-time basis.

2. Determine capabilities and requirements for electric power through coordination with state and regional agencies.

3. Allocate power, order wheeling and interconnection, as required.

4. Estimate surviving capacity to support national goals.

5. Establish priorities for the curtailment, allocation, and restoration of electric power.

6. Act as claimant agency for electric power.

C. Lines of Authority

1. The Secretary of Energy has been given certain emergency authorities to be used in the event of a national emergency. The Secretary has in turn delegated certain of those authorities to EEPA Headquarters and field officials.

2. EEPA has the authority to allocate power, to order curtailment of non-essential electric power use, to order wheeling of power and necessary emergency interconnections, and to direct the restoration effort for electric power.

3. Under the direction and guidance of EEPA Headquarters, Area Directors exercise the EEPA authorities within each power area. The Area Director communicates directly (or through a deputy) with the Major Utility Representatives to order load shedding, wheeling, restoration, and interconnection. Close coordination with state and federal regional authorities is necessary to ensure the most productive use of electric power resources in support of national goals.

4. State and local governments could establish priorities for the use of electric power within their respective jurisdictions. They would assist in issuing and would enforce orders curtailing less essential uses of electric power. State and local governments would not assume responsibility for the performance of any function reserved to EEPA unless the required action could not be carried out by EEPA. Nor would the State and local governments assume responsibility for technical direction of electric power generation, transmission, or distribution operations, except those in which they are normally engaged.

If, after curtailment, power were not available to meet all essential needs, the State or local government would determine the order of priority among power users within its jurisdiction. If the conflict affected uses in another jurisdiction, it would refer the matter to the next higher level of government.

5. EEPA/FEMA relationship: FEMA is the coordinator for all national resources and sets general guidelines and priorities for national resource management; EEPA directly controls and manages electric power resources to meet FEMA guidelines.

V. Communications and Control

A. Communications (ref. Appendix G). Electric power communication facilities perform a large number of industry functions including voice communications, teletype, telegraph, remote control and supervision, protective relaying, system load-frequency control, telemetry, alarm, and other information transmission. These functions are provided by utility-owned power line carrier, telephone lines, telephone line carrier, radio and leased common carrier facilities. Such facilities are so integrated with the generation, transmission, and distribution of electric power that they are an integral part of the power system.

The Federal Communications Commission, by Executive Order 11092, has been assigned the responsibility to prepare national emergency plans and develop preparedness programs covering the provision of service by common carriers, broadcast facilities, and the safety and special radio services. The Federal Communications Commission is the claimant agency for all telephone and telegraph common carriers and radio and TV broadcasting companies serving the general public, excluding government-owned and operated telecommunication facilities, and excluding those telecommunication facilities owned

and operated by businesses for their own use.

1. Emergency Communication Requirements

a. In the event of a general war involving an attack on the United States, the EEPA Headquarters organization will be activated at a relocation site and will control emergency actions applying to electric power. However, since an attack would likely interrupt communications between EEPA Headquarters and Area Directors, principal reliance for emergency operations will be placed on the field organization until communications can be restored.

b. The effectiveness of immediate post-attack emergency actions will depend on the ability of Area Directors to communicate with the rest of the field organization. Area Directors must have adequate communication with EEPA Headquarters during the recovery period.

c. Utility-owned and leased communication facilities that are used in daily operations will function as a basic part of emergency communication requirements. To the extent they consider economically justified, electric utilities will provide supplemental, alternate, and standby communication facilities for use under emergency conditions.

d. Communication facilities required solely for carrying out EEPA functions will normally be furnished by the Federal Government (through EEPA), although electric utilities may elect to furnish those that may later be useful for operating functions.

e. A summary of the more essential communication requirements sponsored and supported by EEPA follows:

Between	Utility Furnish	Government Furnish
Utility management and operating facilities	X	
Utility operating facilities	X	
Operating facilities of interconnected utilities	X	
Utilities and local civil defense offices	X	
Utilities and Area Director	X	X
Area Director and State Power Liaison	X	X
Area Director and Regional Power Liaison		X
Area Director and EEPA Headquarters		X

2. EEPA Responsibilities

a. EEPA periodically reviews with electric utilities the capability of their communication facilities to determine if additions are required for the administration of national controls under emergency conditions.

b. EEPA Headquarters periodically reviews, with each Area Director, the emergency communication facilities furnished by the Federal Government to determine additional requirements.

c. Area Directors provide guidance for emergency planning and encourage electric utilities to provide emergency communication facilities required to ensure reliable operation under emergency conditions. EEPA has considered expanding the use of two-way radio and, when required, assists utilities in procuring appropriate frequency assignment from the FCC.

d. EEPA is the claimant agency for the electric power industry's required supporting resources. Utility-owned communication facilities are treated in the same manner as other operating facilities. EEPA will survey electric utility communication requirements, analyze them to determine priorities, and then submit requests to the FCC or other appropriate resource agency.

e. During emergencies, EEPA will evaluate the need for common carrier facilities leased by electric

utilities and will assist in resolving any conflicts that develop in priorities assigned for use, repair, or restoration.

3. Electric Utilities' Responsibilities

a. Analyze communication systems to identify needs and make plans for expansion to ensure reliable interpool and intrapool operations.

b. Assist the EEPA Area Director in analyzing the need for supplemental, alternate, and standby communication for administering national controls under emergency conditions.

c. Maintain communication systems in a readiness condition to ensure reliable service for emergency conditions.

d. Under alert conditions, check the readiness of alternate facilities and place them in operation when requested by the Area Director.

e. Arrange for needed common carrier facilities and radio frequencies, in accordance with existing priority procedures. Priority requirements which are unobtainable will be referred to EEPA, which will evaluate the need and provide the necessary assistance.

4. Warning

Key EEPA personnel will be alerted under emergency conditions through the existing government warning system (NAWAS). The present attack warning system is a mixture of Federal, State, and local networks. NAWAS is a two-way party-line telephone system. It may be used for natural disasters and other peacetime emergencies, as well as for nuclear attack.

The Federal portion of NAWAS connects three National Warning Centers with approximately 945 full-time State and local warning points. Warning officers at the Warning Centers initiate a voice warning message. It takes about one minute for the message to reach the warning points. From the 945 Federally-warned points, further dissemination of the warning is made through police or other radio or telephone networks to reach outlying cities and towns. Each state has its own intra-state warning system. Time to alert the public beyond the NAWAS points varies from a few minutes to more than 20.

5. Problems and Deficiencies

a. The EEPA Communications Plan is presently being revised and will be published as Appendix G of this Handbook. Since EEPA has no organic communication system, it must rely on existing utility and power pool networks and on communication systems operated and maintained by other government agencies. Thus, EEPA communications are vulnerable to preemption and line overload on non-dedicated circuits. The increasing sophistication and sensitivity of modern communications systems make them vulnerable to blast and EMP effects.

b. Studies are necessary at every level of the EEPA organization: to assess the vulnerability of communications systems to wide area nuclear effects; to determine the types of communication facilities needed (voice, teletype, leased line, microwave, radio net, etc.); to prepare plans, procedures, and networks that will afford an adequate emergency communications capability.

c. A flexible and responsive, yet positively-controlled, system of warning, notification, and message authentication will be developed by the EEPA Headquarters staff.

B. Control

1. The succession of authority within EEPA is described in Appendix B.

2. Direction and control of EEPA operations will be carried out through normal EEPA organizational channels. The flow control and guidance will be from Headquarters to the Area Directors to the Major Utility Representatives. Some EEPA areas are divided into sub-areas, with a Deputy Director responsible for the operation of each sub-area.

3. State and Regional Power Liaison Representatives represent the Area Director at the various state and regional levels within the EEPA area. They provide the Area Director with a channel for information and guidance to and from the states and federal regions.

4. If communications are lost, the highest surviving EEPA echelon will assume the full emergency authority and all functions of the EEPA Administrator and continue operations in accordance with existing policies and guidelines until communications are re-established.

VI. Special Concerns

A. Electro-Magnetic Pulse (EMP)

1. Nature of the Threat

The detonation of a nuclear weapon at altitudes above 50 km produces gamma radiation which interacts with the atmospheric level between 20 and 40 km above the earth's surface. This interaction (Compton scattering) in turn produces electrons which are radiated downward from the atmosphere. In effect, the entire atmosphere becomes an antenna, radiating the electro-magnetic pulse.

A nuclear weapon detonated at an altitude of 100 km would affect an area on the ground of 1,200 km radius. A weapon detonated 400 km directly over Kansas would affect nearly the entire United States. The pulse produced by a high-altitude nuclear explosion is one of high intensity, short duration, and large effective radius. It is possible that a missile attack would consist of several precursor warheads to disrupt communication warning systems, followed by the main attack.

2. Effects on Electric Power Systems

a. The problems caused by EMP lie in the high electric field strength (90 kv/m) and the short rise-time (10 nanoseconds). These characteristics can produce very large and fast transient voltages in the long, unshielded conductors of power systems. These transients are like lightening surges but have a much faster rise-time. In addition, EMP would affect large portions of an extended system simultaneously.

b. The high insulation level of transmission lines will probably prevent damage from EMP to the lines. Distribution lines are less robust and more subject to induced faults. In any case, induced voltages at line terminations and junctions will be higher than in long, straight portions, and faults at substations are likely.

c. EMP-induced surges could cause circuit-breakers to open, protecting lines and circuits. However, multiple EMP events could easily cause circuit breakers to lock out, resulting in a sudden loss of load.

d. Solid-state relays are especially vulnerable to damage from EMP surges. Although solid-state devices usually have electro-mechanical backup relays, repeated surges could cause a failure that would trip out the line.

e. EMP-induced transients, both in the power system and in generator control circuits, could result in generator trip-out due to overspeed or underspeed.

f. The components most vulnerable to EMP are the solid-state control and diagnostic computers used in dispatch centers, as well as communication and control systems. Operational malfunction, false indications, memory erasure, and actual physical damage to components can be caused by EMP-induced transients.

3. EEPA and Industry Response

a. Further research is necessary to assess the vulnerability of electric power systems to EMP (especially in view of the increasing interconnection of major power systems), and to develop plans for minimizing the damage caused by both blast effects and EMP.

b. The thrust of industry planning for the EMP threat seems to be reactive and restorative rather than anticipatory. It is difficult to isolate large portions of a power system in advance, and utilities plan to rely on replacement or repair of damaged parts to restore service. However, the potentially large radius of an EMP surge (or several surges) could affect power systems throughout the nation. The consequent demand for spare parts could put a severe strain on inventories. In addition, an attack situation could seriously hamper the transfer of equipment to where it is needed. Planning is necessary to ensure that an adequate supply of spare equipment is maintained, or that it can quickly be obtained in a crisis.

c. Power pools and individual utilities should identify the most essential components of their computer, control, and communication systems and protect them. Fortunately, the most essential equipment is usually the easiest to protect through shielding, filtering, and isolation.

B. Crisis Relocation Planning (CRP)

1. Program Overview

The civil defense concept, "crisis relocation," involves the strategic withdrawal of population from the cities during an international crisis. Crisis relocation

planning and testing is currently the responsibility of the Federal Emergency Management Agency. Metropolitan areas that are likely to be targets during a nuclear war are identified as "risk areas"; they are matched with "host areas" (areas of little target value) which would receive the evacuated population and provide shelter, food, and other services for a period of 2-4 weeks. Some fraction of the metropolitan population (about 20%) would remain to provide needed services--security, fire protection, maintenance. Of these workers, some would live in the city, and some would live just outside the risk area and commute to work.

One part of crisis relocation is referred to as "organizational relocation" and refers to the assignment of people to host areas based on business or plant affiliation rather than census tract. Such a relocation plan would keep skill and management structures intact, provide a certain organizational discipline and pool of usable skills in the host area, and enhance the return to normal operations during a recovery and restoration period. At present, organizational relocational planning is one of several alternatives being considered by FEMA in support of crisis relocation planning.

2. Impact on electric Power

a. Load in the host areas will most likely not increase at the same rate as the population, so that overloading is less of a problem over the short term. In addition, surplus capacity in the risk areas can be transferred to accommodate the increased load. However, crisis relocation followed by a nuclear exchange--with the attendant damage to generation, transmission, and distribution systems--could significantly alter the normal patterns of electric power supply. Both the maintenance of supply to host areas and the restoration of power in damaged areas would be a continuing problem.

b. While some administrative activities could be temporarily suspended--clerical, billing, scheduled maintenance--a certain minimum work force would be required to maintain utility facilities and correct malfuntions.

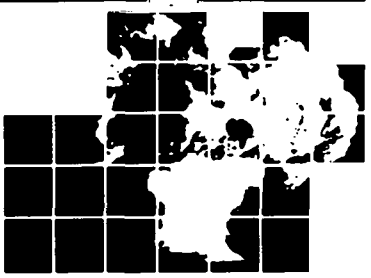
c. Restoration of electric supply or, assuming that the crisis ends short of war, return to normal operations would be of immediate priority.

3. EEPA and Utility Response

a. Both the EEPA organization and utility systems should incorporate crisis relocation into their planning process. Load, capability, and vulnerability studies should be examined to identify probable patterns of load shifting, and to determine where emergency interconnections can best be made if necessary.

b. Electric utilities should establish procedures for ensuring the security, stability, and integrity of systems under conditions of reduced load and reduced personnel manning.

c. Power pools and electric utilities should consider organizational relocation as a method of ensuring both the safety of skilled employees and the speedy restoration of electric power.



EEPA Organization & Responsibilities

I. This Appendix describes the pre-emergency organization and responsibilities of EEPA. Emergency operations are described in Appendix E.

II. Organization

A. Headquarters

The Headquarters organization, in Washington, D.C., is composed of a full-time staff. In an emergency, EEPA Headquarters would be enlarged by the addition of senior executives selected from the utility industry, the Division of Power Supply and Reliability forming the nucleus of the Expanded Organization.

B. Field

The EEPA field structure consists of nine geographical power areas whose boundaries are related to coordinated power pools and are contiguous with the National Electric Reliability Council (NERC) Regions, plus Hawaii, Alaska, Puerto Rico, and the Virgin Islands.

Each Area is managed by an Area Power Director, assisted by one or more deputies and Regional Power Liaison Representatives. In addition, Area Directors are assigned by electric industry personnel serving as EEPA State Power Liaison Representatives--one or more for each state and one each for the District of Columbia, Puerto Rico, and the Virgin Islands--and Major Utility Representatives chosen from each major utility in the EEPA area.

Through this network, preparedness activities of the electric power industry and the Federal, State, and local governments are closely coordinated to ensure effective resource management during periods of declared national emergency.

Responsibilities

A. Headquarters

1. General

The EEPA Headquarters is responsible for the development of emergency plans and preparedness programs and for the maintenance of a field organization in readiness. Readiness activities will consist of the selection and training of competent volunteers who are currently employed in the electric power industry.

2. Administrator

The Administrator of EEPA provides direction and leadership to the emergency preparedness program in electric power. The Administrator supervises and coordinates the emergency planning efforts of a small full-time staff and the WOC personnel serving as principal officials of the EEPA organization. The Administrator provides for an appropriate emergency operating center (EOC) and designates the order of succession to positions in EEPA. As part of preparedness responsibilities, the Administrator makes prior arrangements with other federal agencies concerning electric power emergency functions.

3. Staff

The EEPA staff, under the direction and supervision of the Administrator, develops emergency plans and programs and encourages full readiness in the industry. The staff assists with recruitment and training of personnel; reviews and maintains emergency programs and operating procedures on a current basis; and conducts and/or participates in simulated emergency exercises.

B. Field

Area Directors, Deputy Area Directors, and Regional Power Liaison Representatives are appointed by the Secretary of Energy as "special government employees" on a without-compensation (WOC) basis. They assist the Administrator in carrying out the pre-emergency functions of the EEPA organization. All of the appointees are presently employed in the electric power industry.

Deputy Area Directors are selected from widespread localities within the EEPA areas to ensure that at least one will be available in a post-attack situation. In those areas where one of the ten FEMA Regional Offices is located, a Regional Power Liaison Representative is designated to represent EEPA at these regional offices. He will be selected from the electric utility closest to the FEMA office to which he is assigned.

EEPA State Power Liaison Representatives are designated by the Area Director in consultation with electric utilities and the Administrator of EEPA. If parts of more than one EEPA area lie within a state, the selection and designation of the State Power Liaison Representatives will be made jointly by the Area Directors concerned. Selection of persons for this office should anticipate that at least one of them would be at the State's emergency operating center under emergency conditions.

EEPA Major Utility Representatives are designated by the Area Director. It is left to the discretion of the Area Director to select those utilities of sufficient importance to identify an EEPA Major Utility Representative in advance.

Both State Power Liaison Representatives and Major Utility Representatives will remain electric utility employees while serving in their assigned positions. The designations are made with understanding that the utili where they are employed will m them available in an emergency to devote as much time to their assigned duties, and for as long a period, as the emergency situation requires. The appropriate State emergency preparedness officials should be kept advised of those individuals designated as State Power Liaison Representatives and Major Utility Representatives.

The key to success of emergency preparedness is at the utility level where every company should develop emergency plans in close cooperation with local civil defense plans and with the guidelines of Federal and State governments.

1. Area Director

a. Assist the Administrator in choosing qualified personnel to serve as Deputy Director, State/Regional Power Liaison, Major Utility Representative.

b. Maintain the state of readiness in the EEPA area. Periodic analysis, training, and exercise of personnel and procedures is required to ensure the effective operation of the EEPA organization.

c. Encourage electric utilities to develop and maintain mobilization plans, damage assessment procedures, and damage limiting strategies.

d. Maintain an emergency operating center (EOC), properly equipped with necessary documents, information, plans, data processing resources, and an emergency staff for the direction of operations within the EEPA area.

e. Ensure adequate communications with deputies, State/Regional Liaisons, Major Utility Representatives. Maintain warning and fan-out SOP's.

f. Advise the EEPA Administrator of current preparedness status, problems, deficiencies.

2. Deputy Area Director

a. Assist the Area Director in carrying out preparedness responsibilities.

b. In the absence of the Area Director, assume full responsibility for the duties of the Area Director and report directly to the EEPA Administrator.

c. Maintain and properly equip an alternate EOC and an emergency staff capable of performing the functions of the Area Director should that be required.

3. EEPA Regional Power Liaison Representative

a. Assist the Area Director in coordinating EEPA activities with the Federal Emergency Management Agency.

b. Advise the FEMA Regional Office of electric utility preparedness based on reports of Area Directors in the Region.

c. Advise the Area Director and EEPA Headquarters of FEMA plans affecting electrical power in the Region.

d. Participate in periodic preparedness training exercises.

e. Ensure that an office at the FEMA Regional EOC is equipped with the necessary documents, information, and materials to carry out emergency operations, including provision for direct communication with the Area Director(s).

4. EEPA State Power Liaison Representative

a. Assist the Area Director and serve as liaison on electric power matters at the State EOC.

b. Inform the State emergency planning staff of electric utility preparedness within the State specifically related to the EEPA program.

c. Advise the Area Director and utilities of State plans affecting electric power.

d. Participate in periodic training exercises.

e. Ensure that an office at the State EOC is equipped with the necessary documents, information and materials to carry out emergency operations, including provision for direct communication with the Area Director.

5. EEPA Major Utility Representative

a. Serve as contact at the electric utility for EEPA officials and for the State Power Liaison Representative.

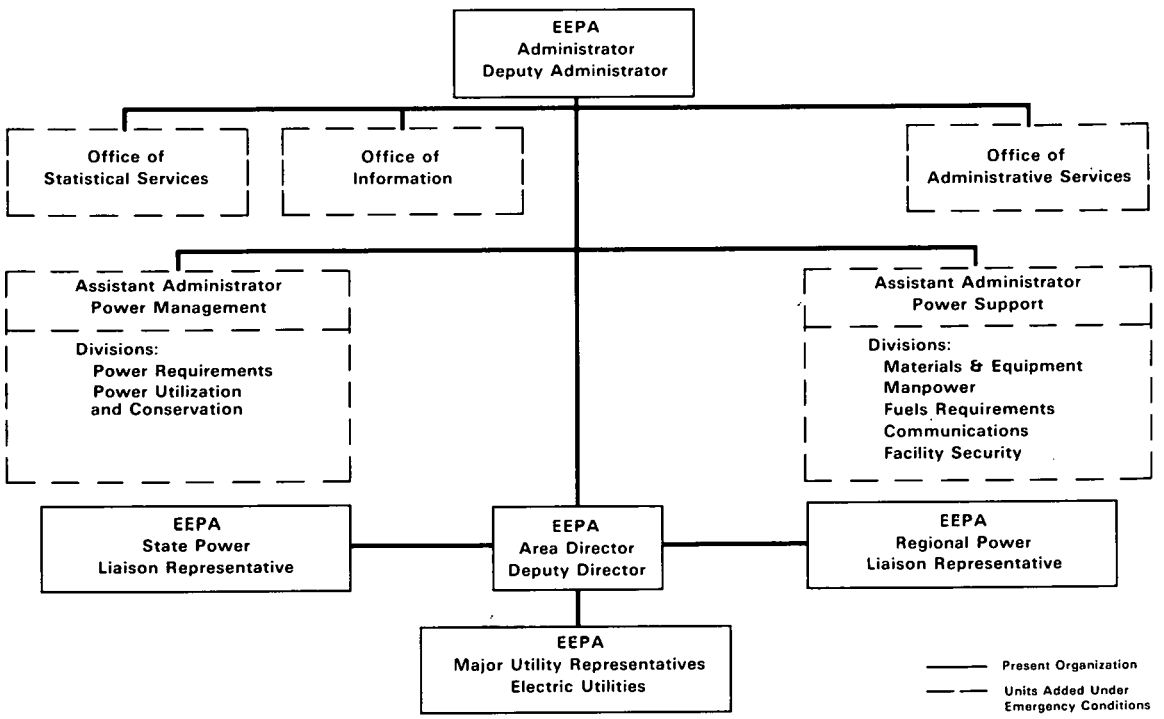
b. Advise the local government emergency planners of electric utility preparedness.

c. Advise the State Power Liaison and the utility represented of local plans affecting electric power.

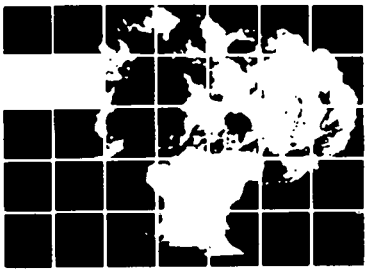
d. Participate in periodic training exercises.

e. Maintain a company EOC equipped with the necessary documents, information, and materials to carry out emergency operations.

Emergency Electric Power Administration
Headquarters and Field Organization



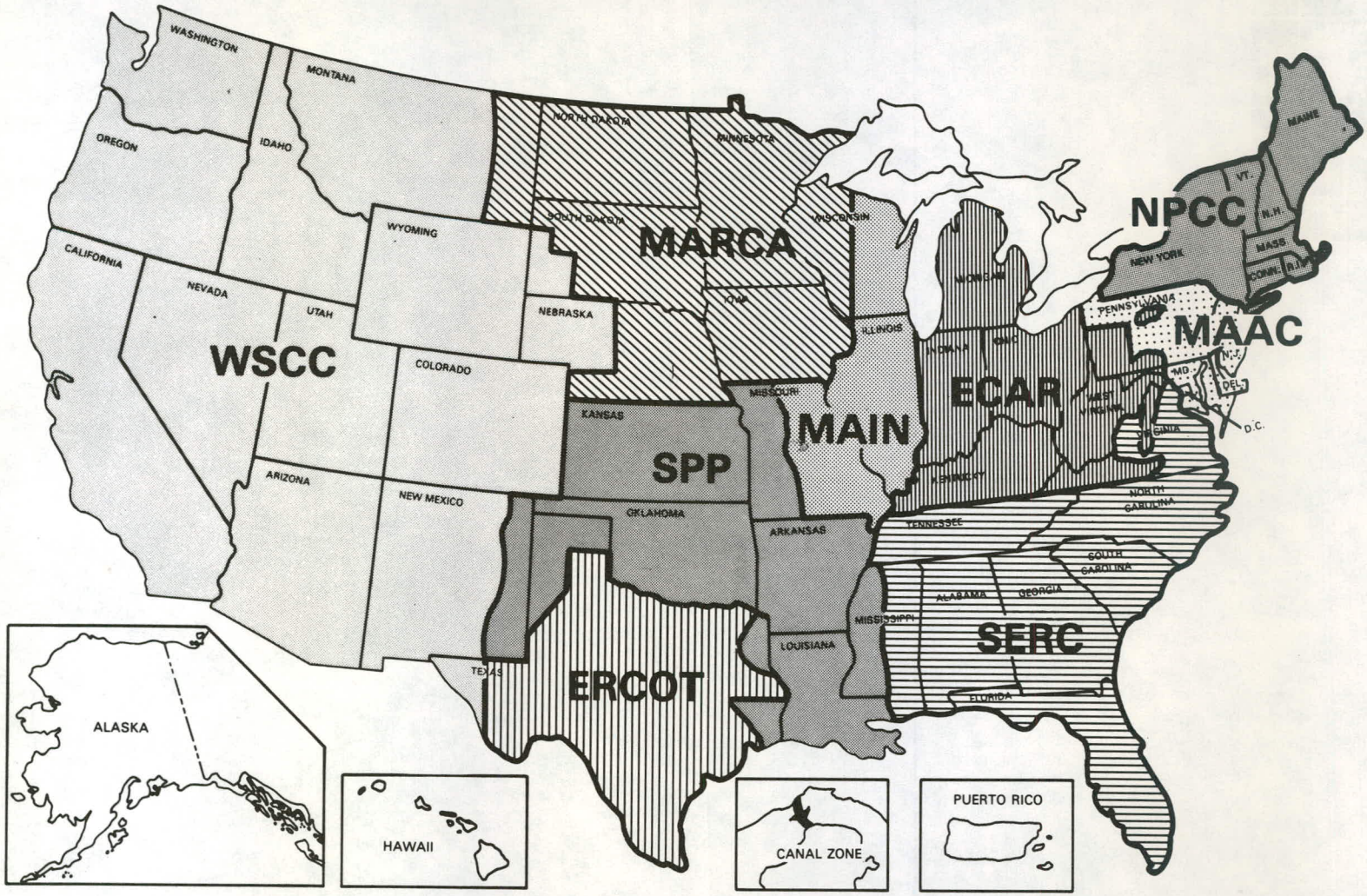
Appendix B



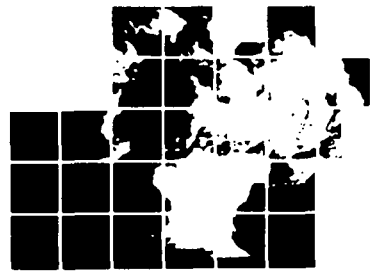
(This Appendix is being developed by an EEPA Task Group)

The Emergency Electric Power Administration is working with the Federal Emergency Management Agency (FEMA) in developing this succession list.

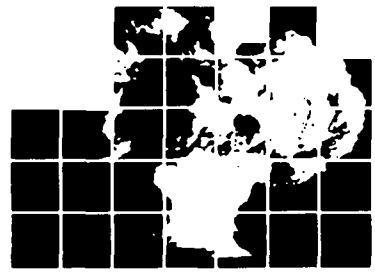
EEPA AREAS


WASHINGTON
MONTANA
OREGON
IDAHO
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
MARCA
WISCONSIN
WYOMING
CALIFORNIA
NEVADA
UTAH
NEBRASKA
WSCC
IOWA
ILLINOIS
COLORADO
MISSOURI
KANSAS
MAIN
SPP
ECAR
ARIZONA
NEW MEXICO
OKLAHOMA
ARKANSAS
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
ALABAMA
GEORGIA
MISSISSIPPI
SERC
LOUISIANA
TEXAS
ERCOT
FLORIDA
NPCC
MAINE
VT.
N.H.
MASS
NEW YORK
CONN.
R.I.
PENNSYLVANIA
MAAC
N.J.
MD.
DEL.
D.C.
VIRGINIA
ALASKA
HAWAII
CANAL ZONE
PUERTO RICO

Appendix C



This roster is periodically updated (January and June of each year) and issued separately.



Increased Readiness

I. Readiness Posture

In order to allow a smooth and timely transition to emergency operations, certain procedures and actions are carried out to plan EEPA in a more responsive condition prior to an actual emergency.

A. Directory of Key Personnel

EEPA Headquarters publishes and distributes a roster of EEPA and FEMA personnel in January and June of each year. The roster contains the name, address, and telephone numbers of Headquarters and field personnel, and information on key personnel in the FEMA Regional offices (see Appendix C for the EEPA Roster).

B. Training and Exercises

EEPA conducts training programs for electric utility personnel periodically. These programs are held in various cities. In addition, simulated exercises are held to give EEPA personnel an opportunity to exercise their skills and to test procedures. EEPA personnel are encouraged to attend education programs provided by FEMA and other preparedness-oriented agencies.

C. Vital Records and Data

It is essential that vital records and other information be available at emergency operating centers. EEPA maintains a complete duplicate file at its national headquarters site as well as statistical information and system maps of individual electric utilities. Area Directors should maintain a vital records file at their EOC's. In most instances, they can supplement these records with carry-in records and materials which will provide the most current information.

II. Emergency Operating Centers

A. Headquarters

EEPA direction and control would have to be performed on a continuous basis during an attack or a declared national emergency. The EEPA Administrator has made provision for three national-level Emergency Operating Centers in accordance with FPC 11. Headquarters personnel will report to the following sites in accordance with pre-emergency instructions:

1.	EEPA Headquarters	Primary
2.	Western Virginia Operations Division	Alternate
3.	Harpers Ferry, West Virginia	Alternate

B. Field Organization

EEPA Area Directors and Deputy Directors should maintain suitable EOC's near their principal business offices. Regional Power Liaison Representatives should arrange for office space in the appropriate FEMA sites listed below:

Region I	Boston, MA, and Maynard, MA
Region II	New York, NY
Region III	Philadelphia, PA, and Olney, MD

Region IV	Atlanta, Ga, and Thomasville, GA
Region V	Chicago, IL, and Battle Creek, MI
Region VI	Dallas, TX, and Denton, TX
Region VII	Kansas City, MO
Region VIII	Denver, CO
Region IX	San Francisco, CA, and Santa Rosa, CA
Region X	Seattle, WA, and Bothell, WA

State Power Liaison Representatives should arrange for space at the State EOC. Major Utility Representatives are assigned to their respective company's EOC's.

C. EOC Standards

EEPA strongly recommends that Area Directors and Deputy Directors choose EOC's based on the following minimum standards:

1. Blast and shock protection

2. EMP shielding

3. Radiation Protection Factor of no less than 40 with 100 a preferable minimum

4. Emergency power, fuel, water and food supplies

5. Accomodation and sanitary facilities for sufficient personnel to allow 24-hour, two-shift operation

6. New construction can be "slanted" to provide increased protection at minimum additional cost. FEMA can provide guidance on slanting techniques, protection factors, and stocking.

III. Readiness Levels and Actions

In the event of a build-up of international tension threatening the security of the United States, partial activation of the EEPA organization may be necessary. Such activation will be as directed by the EEPA Administrator pursuant to a decision by the Secretary of Energy. Full activation of the entire EEPA organization would occur automatically in the event of an attack on the United States.

The checklists on the following pages will be used by all EEPA echelons to place the organization in an advanced state of readiness.

HEADQUARTERS READINESS PREPAREDNESS

(Exercise Code: SPRING FEVER)

Maintain and periodically test emergency mobilization and operation plans.

1. Establish and train an efficient organization for emergency operations.

2. Establish and maintain reliable lines of communication and channels of contact with appropriate emergency preparedness officials.

3. Designate, prepare, and equip suitable protected places for relocation and the conduct of emergency operations.

4. Maintain and protect vital records and have them readily accessible.

5. Analyze the need for increased security measures to provide physical security for facilities.

6. Arrange for receipt and dissemination of emergency warning.

7. Keep next higher echelon advised of readiness status.

COMMUNICATIONS WATCH

(Exercise Code: QUICK STEP)

Review and update emergency readiness plans without public disclosure and minimum internal disclosure.

1. Review emergency mobilization and operations plans and update as necessary:

a. Prepare for installation of temporary barriers, protective lighting, guard shelters, emergency communication facilities, etc.

b. Arrange for guard manpower--local auxiliary police, utility personnel, etc.

2. Ensure reliable communications for emergency operations.

3. Check relocation/operating centers and shelter management arrangements.

4. Check emergency warning and fan-out procedures.

5. Check life-support facilities, food, water, sanitation, etc., of EOC's.

6. Review requirements of next readiness level.

7. Notify next higher echelon of readiness status.

INITIAL ALERT

(Exercise Code: TIGHT REIN)

Check general readiness with minimum public disclosure.

1. Headquarters: Activate National Office Emergency Cadre No. 1. Alert Cadre No. 2 (activate and/or relocate as necessary). Alert Cadre No. 3.

2. Recall key personnel from leave or travel and brief them on emergency assignments and shelter facilties.

3. Man EOC's.

4. Check readiness of:

a. Emergency communications

b. Emergency Operating Center

c. Shelter areas for management and key operations personnel

d. Essential operating equipment

e. Trained radiological and decontamination teams

5. Close all key facilities to unauthorized personnel and provide access control.

6. Correct any deficiencies.

7. Review requirements of next readiness level and prepare to activate emergency plans on short notice.

8. Update records, including emergency action documents, at relocation sites.

9. Notify next higher echelon of readiness status.

ADVANCED ALERT

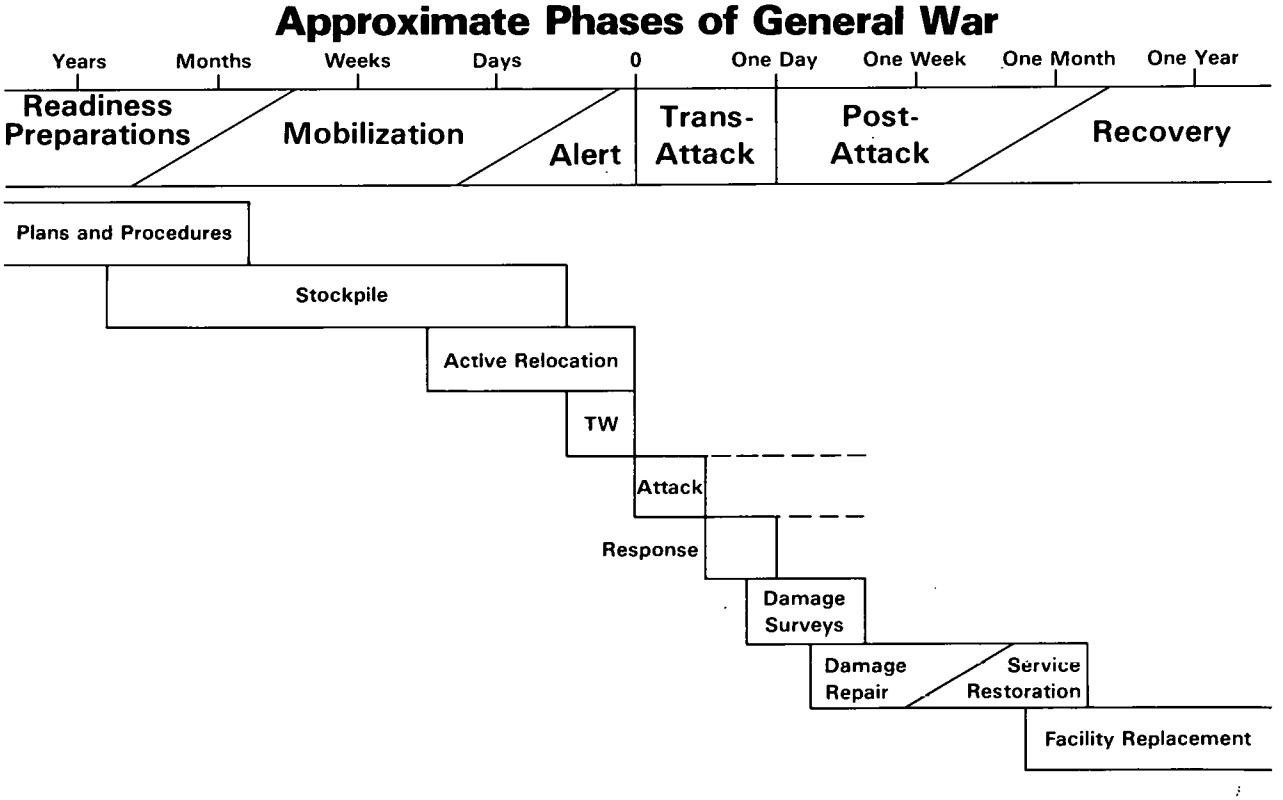
(Exercise Code: FLOOD TIDE)

1. Headquarters: Activate and relocate National Emergency Cadre No. 3 to appropriate EOC's. EEPA field emergency personnel man primary and alternate EOC's.

2. Activate full security plans.

3. Notify personnel with emergency assignments to move automatically to assigned shelter areas in event of an attack warning.

4. Notify next higher echelon when plans are fully activated.



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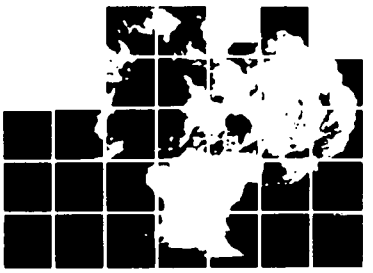


Emergency Operations

I. Emergency Organization

A. EEPA Headquarters

Under emergency conditions, the Headquarters organization will be expanded, as necessary, to implement the plans for ensuring the most effective use of electric power resources. The Secretary of Energy will appoint senior executives from the electric power industry. These new appointees will become full-time Federal Government employees in EEPA and will usually serve on a salary basis under government pay schedules then in effect. If personal or company circumstances should require an official to serve in EEPA without government compensation, he would be allowed to do so pursuant to appropriate legal authority. The full-time members of the pre-emergency headquarters staff may continue to serve in the same capacity or be assigned to assist in another capacity within the expanded organization.

The Administrator will be assisted by the following personnel:

1. Deputy Administrator assists the Administrator and acts for him in case of absence.

2. Assistant Administrator (Power Management) is responsible for determining emergency power requirements, priority and allocation of electric power, and for planning system restoration and/or system expansion to meet national electric power requirements.

3. Assistant Administrator (Power Support) is responsible for claiming materials required by the electric utilities and for allocating such materials among various segments of the industry, including those projects in various stages of planning or construction.

4. Other Staff--Operating divisions under each Assistant Administrator will be assigned portions of the Assistant Administrator's responsibilities.

a. Office of Information

b. Office of Administration

c. Office of Statistics

d. Operating Division

B. EEPA Field Organization

The pre-emergency field organization described in Appendix A will be activated to the extent required by the emergency conditions. Upon activation, EEPA Area Directors and Deputy Directors will become full-time EEPA personnel and will be paid in the same manner as described above for utility executives appointed to positions in EEPA Headquarters.

II. Emergency Actions: Headquarters

A. Give general direction to field operations.

B. Make load and capability studies.

C. Estimate surviving national electric capacity.

1. Attack effects and damage

2. Availabilitiy of supporting resources

3. Essential requirements for electric power

D. Allocate power, order wheeling and interconnection as needed.

E. Establish the order of restoration, repair, expansion, and construction of electric power facilities.

F. Allot material and equipment available to emergency electric power programs.

G. Issue construction authorization to the electric power industry. Coordinate with approved program and authority agency responsible for the allocation of construction materials.

H. Work with appropriate agencies in obtaining and retaining manpower, facilities, and materials for the electric power industry.

I. Act as claimant agency for electric power.

III. Emergency Actions--Field

A. Area Power Director/Deputy Area Director

1. Upon notification by the EEPA Administrator or a declaration of a national emergency, move to the emergency operating center and activate the area organization, employing personnel as necessary.

2. Advise EEPA Headquarters and appropriate Regional, State, and Utility Representatives of damage to electric power facilities, the availability of power, and expected load demands on the system.

3. Order immediate curtailment of nonessential uses of electric power to the extent necessary to ensure system operating security and stability. Enforcement of the Area Director's order will be carried out by State and local governments.

4. In the absence of specific direction on priorities from EEPA Headquarters, direct restoration of electric service in the region, complying--where possible--with civil defense and military requests for essential service.

5. Establish necessary emergency power interconnections.

6. Arrange for the transfer of manpower, equipment, and materials among electric utilities as required to meet power objectives.

7. Requisition essential equipment, materials, and supplies from utility inventories.

8. Submit requests for additional manpower, material, and equipment to EEPA Headquarters or the State Resource Management Organization through the State Power Liaison, as appropriate.

9. If the Area Director is cut off from communication with EEPA Headquarters as a result of an attack, he is authorized to take any action he deems lawful, reasonable, and necessary to maintain power supply in the area. Under such circumstances, the Area Director exercises the full emergency authority which has been delegated to the Secretary of Energy by the President with respect to electric power.

10. The Deputy Director will assist the Area Director with emergency duties.

11. In the absence of the Area Director, the Deputy Director will assume full responsibility for emergency operations in the area and will report directly to the EEPA Administrator.

12. If the Deputy Director is unable to establish communication with the Area Director, he will function as the Area Director in his portion of the power area.

B. Regional Power Liaison Representative

1. Upon notification by the Area Director or the declaration of a national emergency, report to the assigned FEMA Regional EOC as soon as possible.

2. Represent the EEPA Headquarters and the Area Director at the FEMA Regional office on all electric power matters, including requests from the Area Director for adjudication of conflicting requests for essential power supply, materials.

3. Refer to the appropriate Area Director all electric power problems as they occur.

C. State Power Liaison Representative

1. Report to the State EOC upon notification from the Area Director or declaration of a national emergency.

2. Serve as liaison at the State EOC on electric power matters, including the allocation of available electric supply to essential uses and load curtailment within the State.

3. Serve as the point of contact at the State EOC for the electric utilities and the Area Director.

4. Refer to the appropriate Area Director electric power problems that have been raised at the State level.

5. In accordance with priorities and allocations established by the Area Director, serve as liaison to utilities within the state regarding the needs for manpower, equipment, and materials from other utilities.

6. Arrange for required supporting resources for electric utilities from the State government (e.g., removing highway obstructions to allow access to damaged facilities).

D. Major Utility Representative

1. Report to the company EOC upon notification from the Area Director or the State Power Liaison, or upon the declaration of a national emergency.

2. Serve as liaison to local government officials on electric power matters.

3. Keep local government officials informed on the availability of electric power, advise on the allocation of available supply to essential uses and on load curtailment procedures.

4. Refer to the appropriate utility local government requests for restoration of service with the order of priority indicated by local government officials. Unresolvable conflicting requirements should be relayed to the State Power Liaison for adjudication at that level.

5. Refer electric power problems to the State Power Liaison or Area Director as requested by the utility concerned.

6. Execute orders from the Area Director regarding allocation of power, manpower, materials, and other utility resources.

E. State and Local Governments

1. Consult on all electric power matters with the appropriate EEPA Representatives. Inform utilities or the Area Director of essential needs through the Power Liaison Representatives.

2. The State Electric Power Agency issues curtailment orders when the Area Director cannot be reached. Such orders could be for all or any part of the State but should not extend beyond State borders.

3. If, after curtailment, power is not available to meet all essential needs, determine the order of priority among users within their respective jurisdictions. If the conflict affects users in another jurisdiction, refer the matter to the next higher level of government. A local government would refer it to the State; a State government to the Area Director for decision or, in the case of an appeal, to the FEMA Regional Director for adjudication.

4. Local governments issue curtailment orders when the State government or the EEPA Area Director cannot be reached, and they enforce curtailment orders issued by higher authority.

5. Assist in emergency restoration and repair of essential facilities.

6. Permit electric utilities to retain for their use wholly-owned communication facilities and those leased for their exclusive use, subject to Federal regulation.

7. Forward damage reports on electric power facilities to the next higher level of government.

8. Upon activation by the State or local government of its emergency resource management organization, or other organization performing emergency electric power resource functions, direct the officials of such organizations to establish contact with their EEPA counterparts as soon as possible.

F. Electric Utilities

1. Comply with requests from local, State, and Federal agencies for supply of electric power to essential uses.

2. Activate power liaison personnel at local and State governments.

3. Invoke mutual aid agreements, as necessary.

4. Request needed equipment and manpower from other utilities. Actual transfer is subject to approval of the Area Director.

5. Report damage, total remaining capability, and total demand to the Area Director.

6. If electric service cannot be supplied safely to an area, the utility will disconnect all power supply to the area.

7. If power is not available to meet demands, request the Area Director to order curtailment of non-essential uses in the area, and at the same time notify and request the affected government, through the Power Liaison, to enforce the curtailment.

8. If, after curtailment, the supply of power is not sufficient to meet essential needs, obtain a decision on priority of use and proceed accordingly. Conflicts should be submitted for resolution as follows:

a. If the conflict is within the jurisdiction of a single local government, refer to the local government, through the Major Utility Representative, for a decision.

b. If the conflict involves two or more jurisdictions within a State, obtain a decision from the State government. The request may be made either through the State Power Liaison or through the Area Director.

c. If the conflict crosses state lines, refer to the Area Director for a decision.

IV. Guidance on Priorities and Curtailment

The policy of the Federal Government on use of resources during a national emergency is stated in Defense Mobilization Order 4, "Guidance on Priority Use of Resources in Immediate Postattack Period." A copy of this Order is included in Appendix I of this Handbook.

DMO 4 states: "In an immediate postattack period all decisions regarding the use of resources will be directed to the objective of national survival and recovery. In order to achieve this objective, postattack resources will be assigned to activities concerned with the maintenance and saving of lives, immediate military defense and retaliatory operations, and economic activities essential to continue survival and recovery." DMO 4 further states that the guidance it provides, ". . . is designed to achieve a degree of national equity in the use of resources and to assign and conserve resources effectively in the immediate postattack period. Until more specific instructions are available, these are the general guidelines within which managerial judgement and common sense must be used to achieve national objectives under widely differing emergency conditions." The Order lists those activities which are to be accorded priority.

The guidelines set forth in DMO 4 pertain to electric power as well as to other resources. This Appendix is intended to supplement, and in no way modify, the guidance given in DMO 4. If any provision should appear to be inconsistent with the guidance in DMO 4, the latter shall govern.

A. Priority of Electric Power Use

In the event of nuclear attack, electric power that is available for use must be carefully conserved regardless whether any power facilities have been damaged. Electric power use must be restricted to essential facilities, essential local users, and the minimum needs of individual consumers until the continuing supply can be assessed and the supply that will be available for less essential needs can be determined. If the available power supply is inadequate to serve all these needs, the local or State government determines the order of priority. These items are defined as follows:

1. Essential Facilities are:

a. Military establishments engaged in immediate retaliatory or defense operations

b. Electric power, gas, and water utility systems

c. Industrial plants producing or processing essential items

d. Major wholesale establishments storing or distributing essential items

e. Transportation and communications systems providing essential services

2. Essential Local Users are:

a. Civilian organizations engaged in essential civil defense activities including persons, equipment, and facilities providing essential survival care and services to people

b. Military organizations engaged in essential military activities

c. Farmers producing essential food and workers employed in essential facilities or local establishments providing essential items and services to people

d. Individual consumers requiring immediate power supply for individual or family survival

3. Individual Consumers are consumers not included in Essential Local Users or Essential Facilities. These Individual Consumers obtain electric power for authorized uses from local utilities subject to curtailment on use issued by the EEPA Director, Governor or local Government.

B. Curtailment

Curtailment of electric power use for less essential needs may consist of any of a number of specific types of service or may specify certain hours of usage. For uniformity it is suggested that curtailment normally be handled in the following six steps. Modification of these steps may be desirable to fit local conditions. (See page E-10, Sample Curtailment Order.) Enforcement will be by State and local Government. The public will be informed and instructed through any communication media available.

1. Step I--Discontinue

a. All exterior advertising, decorative, and flood lighting

b. All show window lighting

c. All interior display and showcase lighting

d. All comfort air conditioning

e. The use of electric ovens and broilers in home cooking and reduce use of electricity for other home cooking to an absolute minimum

f. The use of all residential electrical appliances except refrigerators, ranges (top only), and television or radio receivers

g. Nonresidential cooking and baking on electrical equipment except for essential staple foods, and reduce nondomestic use of electricity for all cooking and baking to an absolute minimum.

2. Step II-Reduce

a. Elevator service to an absolute minimum

b. Public lighting to the absolute minimum essential for safety

c. Thermostat setting for comfort heating, utilizing electricity to a maximum of 65° daytime and 50° nighttime temperature

d. The use of hot water heated by electricity to minimum requirements

e. General illumination of 50% in all commercial and residential establishments

f. Electric transportation facility heating by 50%

g. The use of radio and television receivers to a minimum necessary to receive civil defense information and instructions

3. Step III--Discontinue the Use of Electricity Except for Preservation of Equipment

a. In all places of amusement

b. In nonessential public places(such as museums, galleries, etc.)

c. In schools other than those with pupils attending pursuant to requirements of the Compulsory Education Law, and institutions of higher learning

4. Step IV--Discontinue the Use of Electricity Except that Necessary for Preservation of Equipment

a. In all commercial wholesale and retail establishments except those engaged in the distribution of controlled-temperature storage of goods, fuel, medical supplies and medicines

b. In all industrial establishments not engaged in the manufacture, processing, or controlled-temperature storage of staple foods, medicines, and medical supplies or directly engaged in defense manufacture

c. In all office buildings not engaged in communications, utilities, police, fire, health, water supply, public works, welfare, and transportation services

5. Step V--Discontinue Defense Industrial Use of Electricity

All industrial establishments directly engaged in defense manufacture, except those engaged in the manufacturing, processing, controlled-temperature storage and distribution of staple foods, fuel and medical supplies, shall be ordered to discontinue the use of electric service.

6. Step VI--Discontinue use of electricity to preferred essential services (essential local users and essential facilities) as defined in I above.

SAMPLE CURTAILMENT ORDER

To: Electric Utility(s)

_____

EEPA State Electric Power Liaison Representative

_____

From: EEPA Area Power Director

Subject: Curtailment of Electric Power

Electric power supply in the area described below is presently inadequate to meet the demands of all consumers.

In order for electric power to be available for the more essential needs, it is hereby directed that electric power be denied for all uses listed in Curtailment Step(s) _____.

This order becomes effective on the date indicated and continues until further notice. It applies to all consumers in the area affected.

_____

AREA POWER DIRECTOR
EEPA AREA _____

Areas affected by this order -

Effective Date of Order _____

CC:- State(s) Governor

The above is an example of an initial order. It would be modified to suit any curtailment increase, decrease, or cancellation.

Claimancy & Restoration

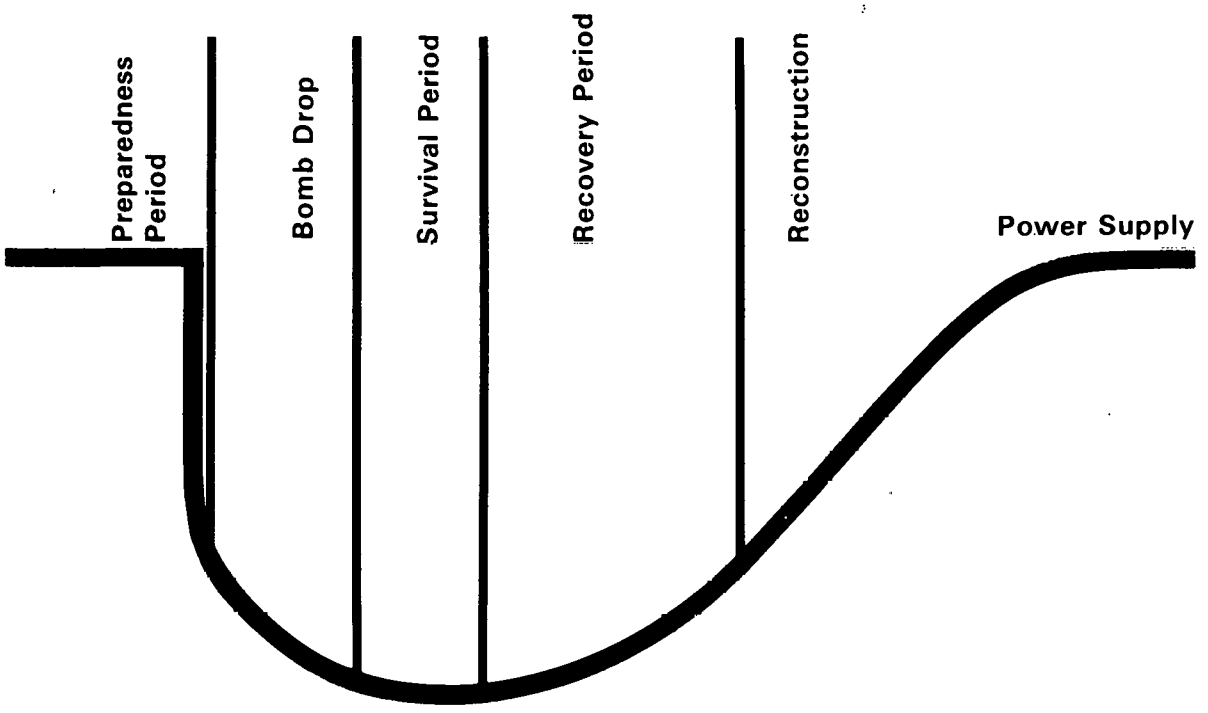
(This Appendix is being developed by an EEPA Task Group)

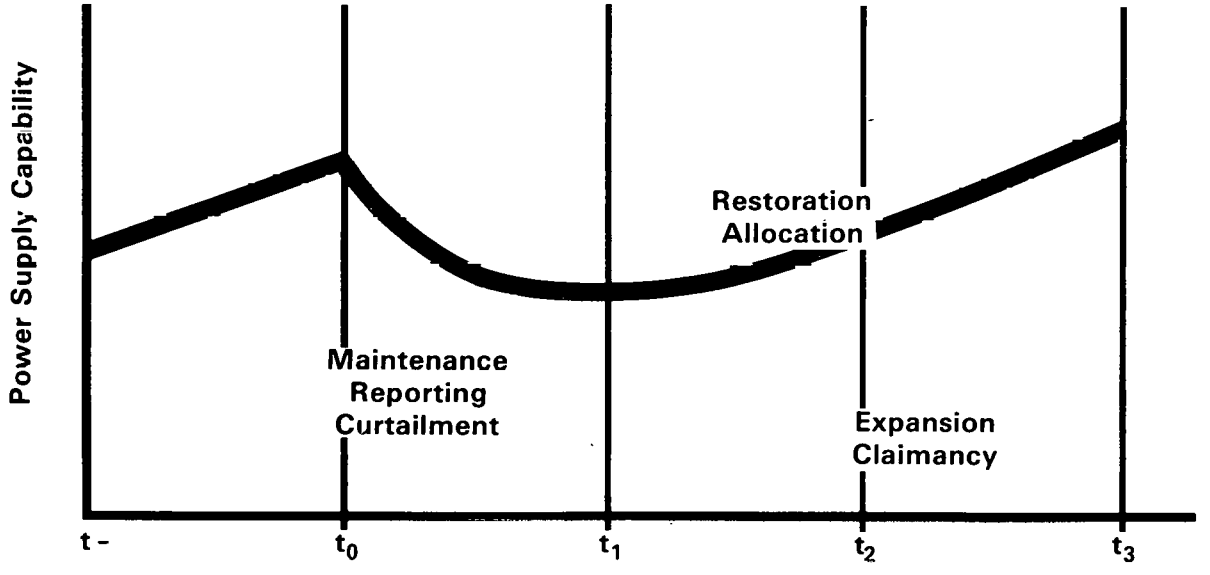
The Emergency Electric Power Administration is working with elements of the Federal Emergency Management Agency (FEMA), Department of Commerce, and the Department of Transportation in developing this section.

CLAIMANCY FUNCTIONS

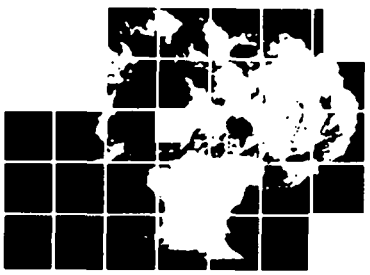
- Determine Requirements
- Submit Needs
- Allocate Available Resources

Power Supply in a National Emergency





Changing Role of DEPA in Resource Management

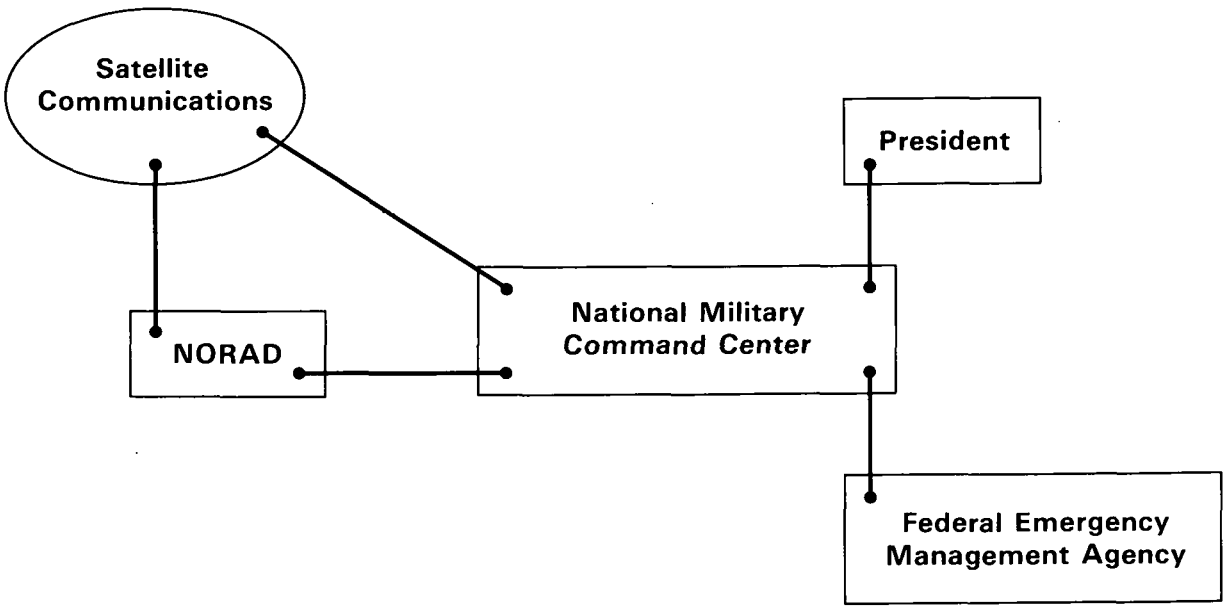


Communications & Warning

(This Appendix is being developed by an EEPA Task Group)

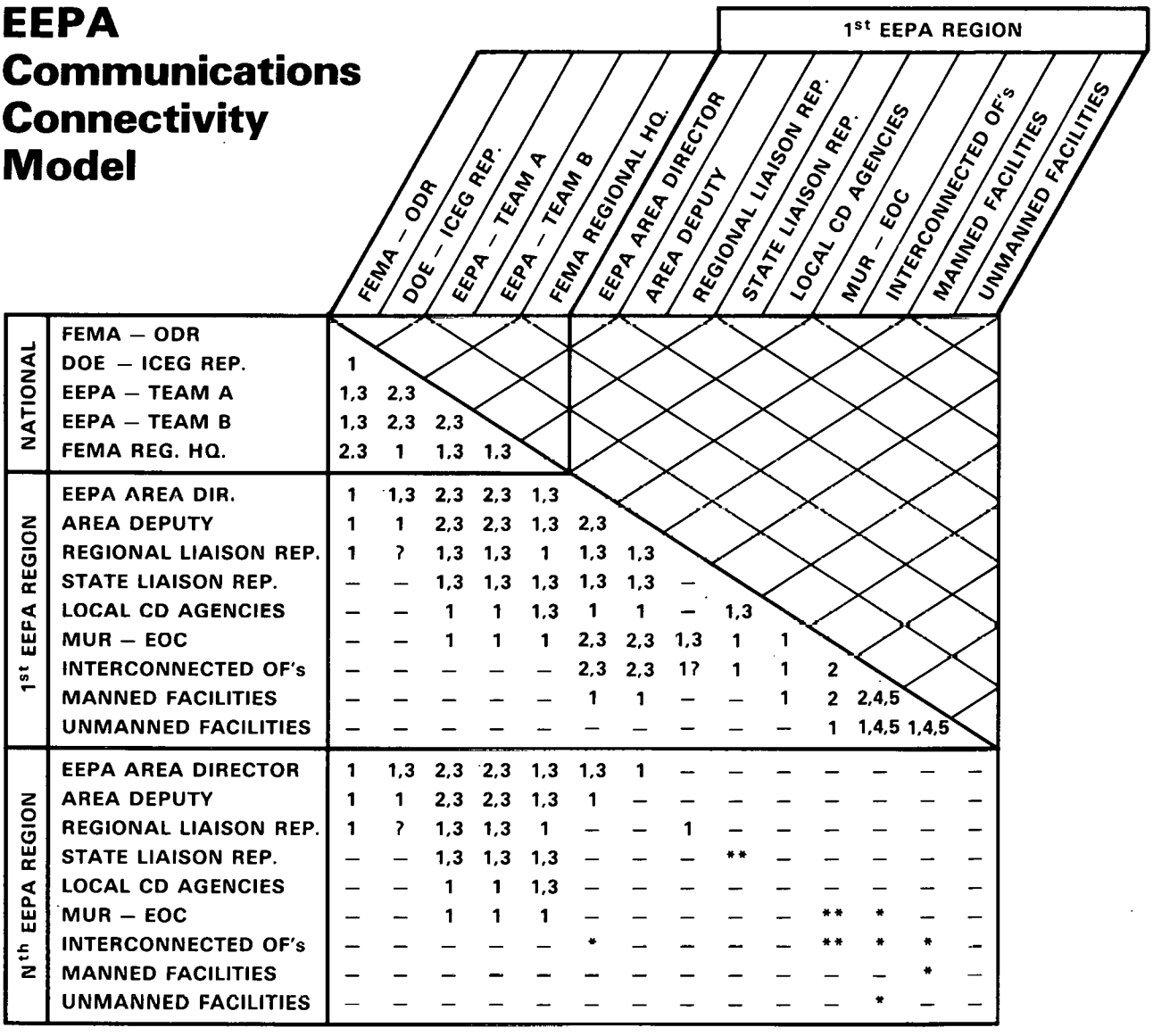
A request has been sent from EEPA Headquarters to the National Electric Reliability Council (NERC) Office requesting assistance in this area. EEPA has drafted a concept paper which will be used to initiate a "pilot" project utilizing conventional communication devices or satellites. It is anticipated that with NERC's cooperation and technical assistance, a viable emergency communications system can be developed from these alternatives. A proposed communications connectivity matrix is included for review. Any network that is devised will of course be established in accordance with the National Communications System (NCS).

Communication and Warning



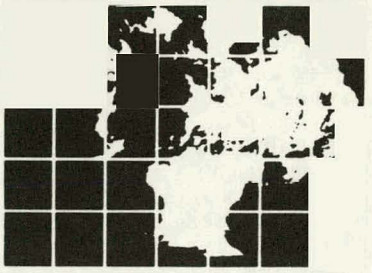
Land Line and Satellite Communications Links

EEPA Communications Connectivity Model



CAT.	SERVICE	PURPOSE
1.	VOICE – INTERMITTENT	REPORT – COORDINATE
2.	VOICE – FULL PERIOD	WARNING/CONTROL/COORDIN.
3.	RECORD – TTY OR FACSIMILE	REPORT – COORDINATE
4.	TELEMETRY	SYS. CONTROL – DIAGNOSTICS
6.	DATA LINK	SYS. CONTROL – MGMT.

*CAT. 2 IF INTERCONNECTED ACROSS EEPA REGION BOUNDARIES.
**CAT. 1 IF CONTIGUOUS STATES AND CONNECTED UTILITIES.



Effects of Nuclear Weapons

This Appendix briefly summarizes several effects of nuclear weapons that are of concern to engineers responsible for the restoration of electrical power following a nuclear attack.* For simplicity, the effects of only a single explosion are considered. The effects of multiple explosions, which would be the case in many scenarios of interest, are much more complex and uncertain and are seldom treated. Reference 1 provides a limited discussion of such multiburst effects, including quantitative estimates of the phenomena.

In the main, the effects of nuclear explosions involve:

- Blast and shock which can produce direct physical damage to buildings, equipment, power distribution systems, and other physical plant assets out to a range of several miles from a megaton burst; can also lead to secondary damage by fires produced by broken gas mains, etc., at even greater range.

- Ejecta and debris from cratering explosions which can cause physical damage to a range of about a mile from a megaton surface burst. Radioactive fallout can impose potentially lethal working conditions hundreds of miles downwind for days and possibly weeks following the explosion.

- Thermal radiation which may cause damage directly or indirectly as a result of fires out to a range of several miles from a megaton explosion.

- Electromagnetic pulse (EMP) which can cause damage to electronics, especially modern electronics, at very great ranges from nuclear explosions. For example, a single high-altitude megaton burst (at say 100 miles) will expose over one-third of the U.S. to fields in excess of 50 k volts/m. Such fields can induce large damaging currents in power lines, telephone lines and other interconnecting links which in turn can cause damage at great ranges (100's of miles) from ground zero.

- Direct nuclear radiation - not particularly relevant for most electric power systems since radiation levels required to cause damage occur at ranges from high yield bursts where blast, shock and thermal effects would be expected to cause severe damage.

The distribution of the bomb's energy among these effects depends on its size and on the details of its design, but a general description is possible.

Blast and Shock

Most damage to cities from large weapons comes from the explosive blast. The blast directs air away from the site of the explosion, producing sudden changes in air pressure (called static overpressure) that can move them suddenly or knock them down. In general, large

*This Appendix draws heavily upon The Effects of Nuclear War, published by the Office of Technology Assessment of the Congress of the United States, Library of Congress Catalog Card Number 79-600080, U.S. Government Printing Office, Washington, D.C. 20402. Other key references are given in the Bibliography.

buildings are destroyed by the overpressure, while people and objects such as trees and utility poles are destroyed by the wind.

For example, consider the effects of a 1-megaton (Mt) air burst on things 4 miles (6 km) away. The overpressure will be in excess of 5 pounds per square inch (psi), which will exert a force of more than 180 tons on the wall of a typical two-story house (see Figure 1). At the same place there would be a hurricane force wind of 160 mph (255 km); while 5 psi is not enough to crush a man, a wind of 180 mph would create fatal collisions between people and nearby objects. Such effects are thought to cause damage to electric power plants that would require on the order of a year to repair in a peacetime economy. Power lines and other above surface components of the electric power network would also likely suffer damage within this radius (see Figure 2).

The magnitude of the blast effect (generally measured in pounds per square inch) diminishes with distance from the center of the explosion. It is related in a more complicated way to the height of the burst above ground level. For any given distance from the center of the explosion, there is an optimum burst height that will produce the greatest overpressure, and the greater the distance the greater the optimum burst height. As a result, a burst on the surface produces the greatest overpressure at very close ranges (which is why surface bursts are used to attack very hard, very small targets such as missile silos or possibly nuclear powerplants), but less overpressure than an air burst at somewhat longer ranges. Raising the height of the burst reduces the overpressure directly under the bomb, but can widen the area at which a given smaller overpressure is produced. Thus, an attack on factories with a 1-Mt weapon might use an air burst at an altitude of

Unreinforced brick house after a nuclear explosion
(1.7 psi peak overpressure)

Unreinforced brick house after a nuclear explosion
(5 psi peak overpressure)

Courtesy of Defense Nuclear Agency

Figure 1

8,000 feet (2,400 m), which would maximize the area (about 28 mi^2 (7,200 hectares) that would receive 10 psi or more of overpressure.

Table 1 shows the ranges of overpressures and effects from such a blast and Figures 3 and 4 illustrate the overpressure range from hypothesized 1 and 25 megaton airbursts over Detroit.

When a nuclear weapon is detonated on or near the surface of the earth, the blast digs out a large crater. Some of the material that used to be in the crater is deposited on the rim of the crater; the rest is carried up into the air and returns to earth as fallout. An explosion that is farther above the earth's surface than the radius of the fireball does not dig a crater and produces negligible immediate fallout.

For the most part, blast kills people by indirect means rather than by direct pressure. While a human body can withstand up to psi of simple overpressure, the winds associated with as little as 2 to 3 psi could be expected to blow people out of typical modern office buildings. Most blast deaths are expected to result from the collapse of occupied buildings, from people being blown into objects, or from buildings or smaller objects being blown onto or into people. Clearly, then, it is impossible to calculate with any precision how many people would be killed by a given blast--the effects would vary from building to building.

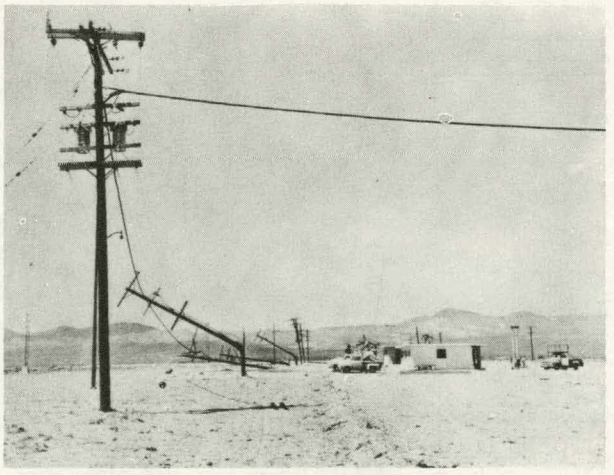


Figure 2 - Collapse of utility poles on line (5 psi peak overpressure, 0.6 psi dynamic pressure from 30-kiloton explosion), Nevada Test Site

Table 1 - Blast Effects of a 1-Mt Explosion 8,000 ft Above the Earth's Surface

Distance from ground zero (stat.miles)	(kilometers)	Peak overpressure	Peak wind velocity (mph)	Typical blast effects
.8	1.3	20 psi	470	Reinforced concrete structures are levelled.
3.0	4.8	10 psi	290	Most factories and commercial buildings are collapsed. Small wood frame and brick residences destroyed and distributed as debris.
4.4	7.0	5 psi	160	Lightly constructed commercial buldings and typical residences are destroyed; heavier construction is severely damaged. Power lines and electrical power plants heavily damaged.
5.9	9.5	3 psi	95	Walls of typical steel-frame buildings are blown away; severe damage to residences. Winds sufficient to kill people in the open.
11.6	18.6	1 psi	35	Damage to structures; people endangered by flying glass and debris.

Direct Nuclear Radiation

Nuclear weapons inflict ionizing radiation on people, animals, and plants in two differnt ways. Direct radiation occurs at the time of the explosion; it can be very intense, but its range is limited. Fallout radiation is received from particles that are made radioactive by the effects of the explosion, and subsequently distributed at varying distances from the site of the blast.

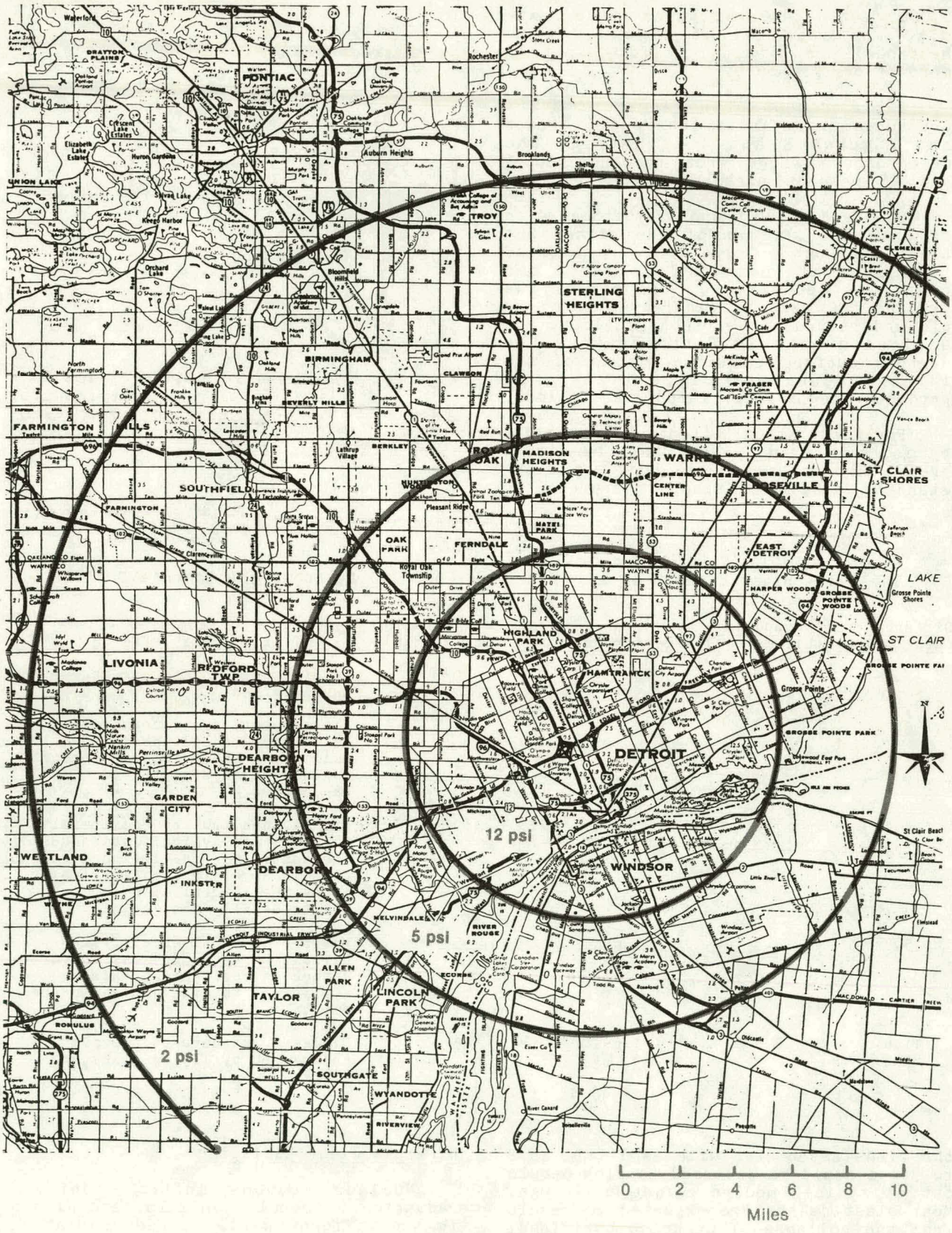

PONTIAC
TROY
BIRMINGHAM
STERLING HEIGHTS
FARMINGTON HILLS
SOUTHFIELD
OAK PARK
FERNDALE
MADISON HEIGHTS
WARREN
ST. CLAIR SHORES
ROSEVILLE
EAST DETROIT
HARPER WOODS
HIGHLAND PARK
HAMTRAMCK
DETROIT
LIVONIA
REDFORD TWP
DEARBORN HEIGHTS
GARDEN CITY
WESTLAND
DEARBORN
INKSTER
WINDSOR
ALLEN PARK
LINCOLN PARK
TAYLOR
ROMULUS
SOUTHGATE
WYANDOTTE
RIVER ROUGH
GROSSE POINTE PARK
12 psi
5 psi
2 psi
0 2 4 6 8 10
Miles

Figure 3

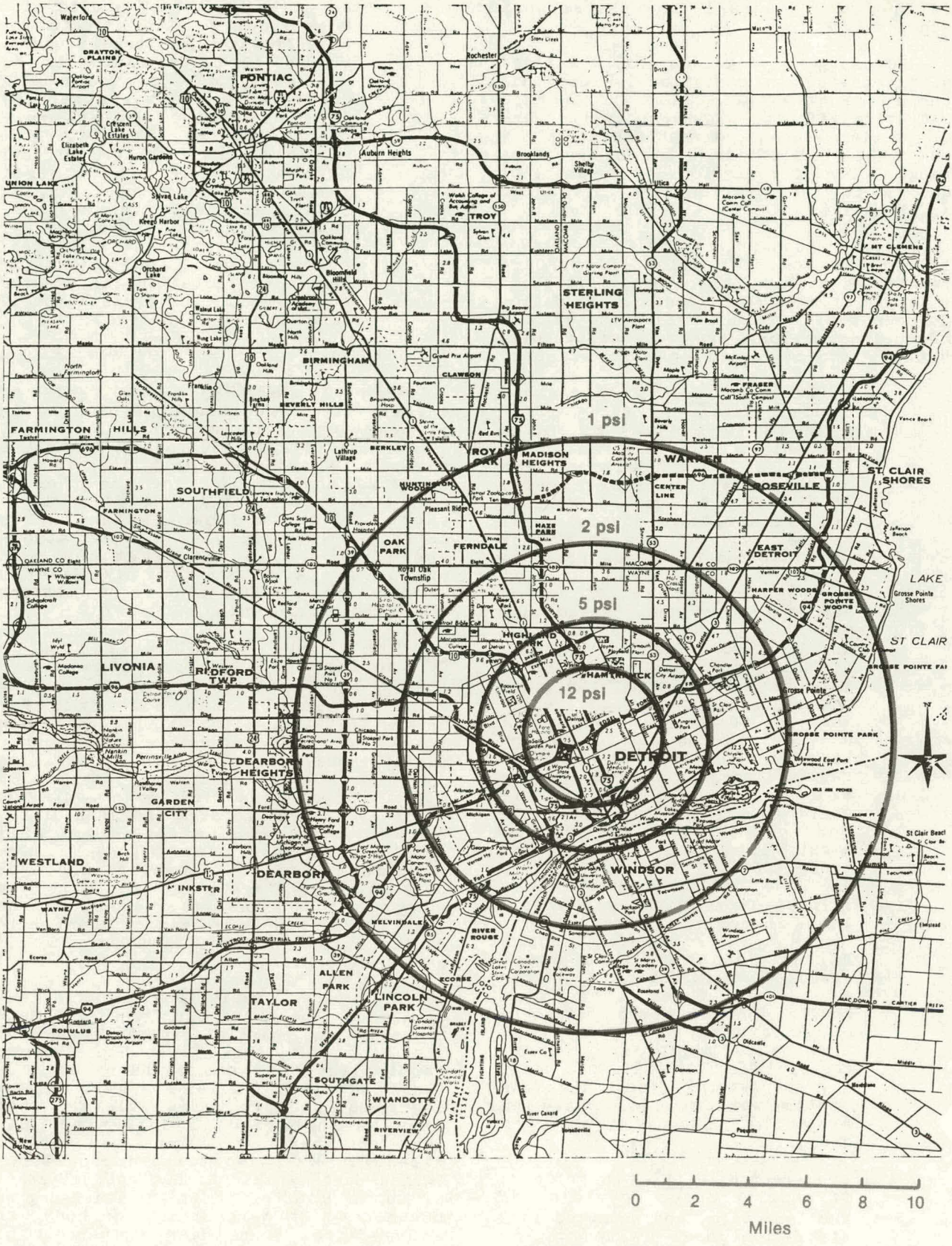

1 psi
2 psi
5 psi
12 psi
DETROIT
PONTIAC
TROY
STERLING HEIGHTS
BIRMINGHAM
FARMINGTON HILLS
SOUTHFIELD
OAK PARK
FERNDALE
ROYAL OAK
MADISON HEIGHTS
WARREN
ST. CLAIR SHORES
ROSEVILLE
EAST DETROIT
LIVONIA
REDFORD TWP
DEARBORN HEIGHTS
GARDEN CITY
WESTLAND
DEARBORN
INKSTER
WAYNE
ALLEN PARK
LINCOLN PARK
TAYLOR
ROMULUS
SOUTHGATE
WYANDOTTE
RIVERVIEW
ECORSE
RIVER ROUGE
MELVINDALE
WINDSOR
GROSSE POINTE PARK
HARPER WOODS
GROSSE POINTE WOODS
ST CLAIR
LAKE
0 2 4 6 8 10
Miles

Figure 4

Fallout is discussed in a subsequent section.

For large nuclear weapons, the range of intense direct radiation is less than the range of lethal blast and thermal radiation effects. However, in the case of smaller weapons, direct radiation may be the lethal effect with the greatest range. Direct radiation did substantial damage to the residents of Hiroshima and Nagasaki.

Human response to ionizing radiation is subject to great scientific uncertainty and intense controversy. It seems likely that even small doses of radiation do some harm. To understand the effects of nuclear weapons, one must distinguish between short- and long-term effects:

- Short Term Effects. A dose of 600 rem within a short period of time (6 to 7 days) has a 90 percent chance of creating a fatal illness, with death occurring within a few weeks. (A rem or "roentgen-equivalent-man" is a measure of biological damage: a "rad" is a measure of radiation energy absorbed; a roentgen is a measure of radiation energy; for our purposes it may be assumed that 100 roentgens produce 100 rads and 100 rem.) The precise shape of the curve showing the death rate as a function of radiation dose is not known in the region between 300 and 600 rem, but a dose of 450 rem within a short time is estimated to create a fatal illness in half the people exposed to it; the other half would get very sick, but would recover. A dose of 300 rem might kill about 10 percent of those exposd. A dose of 200 to 450 rem will cause a severe illness from which most people would recover; however, this illness would render people highly susceptible to other diseases or infections. A dose of 50 to 200 rem will cause nausea and lower resistance to other diseases, but medical treatment is not required. A dose below 50 rem will not cause any short-term effects that the victim will notice, but will nevertheless do long-term damage.

- Long-Term Effects. The effects of smaller doses of radiation are long term, and measured in a statistical way. A dose of 50 rem generally produces no short-term effects; however, if a large population were exposed to 50 rems, somewhere between 0.4 and 2.5 percent of them would be expected to contract fatal cancer (after some years) as a result. There would also be serious genetic effects for some fraction of those exposed. Lower doses produce lower effects. There is a scientific controversy about whether any dose of radiation, however, small, is really safe. The extent of the long-term effects that a nulcear attack might produce are very uncertain. It should be clearly understood, however, that a large nuclear war would expose the survivors, however well sheltered, to levels of radiation far greater than the U.S. Government considers safe.

Thermal Radiation

Approximately 35 percent of the energy from a nuclear explosion is an intense burst of thermal radiation, i.e., heat. The effects are roughly analogous to the effect of a 2-second flash from an enormous sunlamp. Since the thermal radiation travels at the speed of light (actually a bit slower, since it is deflected by particles in the atmosphere), the flash of light and heat precedes the blast wave by several seconds, just as lightning is seen before the thunder is heard.

The visible light will produce "flashblindness" in people who are looking in the direction of the explosion. Flashblindness can last for several minutes, after which recovery is total. A 1-Mt explosion could cause flashblindness at distances as great as 13 miles (21 km) on a clear day, or 53 miles (85 km) on a clear night. If the flash is focused through the lens of the eye, a permanent retinal burn will result. At Hiroshima and Nagasaki, there were many cases of flashlindness, but only one case of retinal burn, among the survivors. On the other hand, anyone flashblinded while driving a car could easily cause permanent injury to himself and to others.

Skin burns result from higher intensities of light, and therfore take place closer to the point of explosion. A 1-Mt explosion can cause first-degree burns (equivalent to a bad sunburn) at distances of about 7 miles (11 km), second-degree burns (producing blisters that lead to infection if untreated, and permanent scars) at distances of about 6 miles (10 km), and third-degree burns (which destroy skin tissue) at distances of up to 5 miles (8 km). Third-degree burns over 24 percent of the body, or second-degree burns over 30 percent of the body, will result in serious shock, and will probably prove fatal unless prompt, specialized medical care is available. The entire United States has facilities to treat 1,000 or 2,000 severe burn cases; a singe nuclear weapon could produce more than 10,000.

The distance at which burns are dangerous depends heavily on weather conditions. Extensive moisture or a high concentration of particles in the air (smog) absorbs thermal radiation. Thermal radiation behaves like sunlight, so objects create shadows behind which the thermal radiation is indirect (reflected) and less intense. Some conditions, such as ice on the ground or low white clouds over clean air, can increase the range of dangerous thermal radiation.

Fires

The thermal radiation from a nuclear explosion can directly ignite kindling materials. In general, ignitible materials outside the house, such as leaves or newspapers, are not surrounded by enough combustible material to generate a self-sustaining fire. Fires more likely to spread are those caused by thermal radiation passing through windows to ignite beds and overstuffed furniture inside houses. A rather substantial amount of combustible material must burn vigorously for 10 to 20 minutes before the room, or whole house, becomes inflamed. The blast wave, which arrives after most thermal energy has been expended, will have some extinguishing effect on the fires. However, studies and tests of this effect have been very contradictory, so the extent to which blast can be counted on to extinguish fire starts remains quite uncertain.

Another possible source of fires, which might be more damaging in urban areas, is indirect. Blast damage to stores, water heaters, furnances, electrical circuits, or gas lines would ignite fires where fuel is plentiful.

Although there are very large uncertainties, significant fire damage from bursts in urban areas might exist out to the 5-10 psi peak overpressure range, i.e., several miles from ground zero of a megaton burst.

It is possible that individual fires, whether caused by thermal radiation or by blast damage to utilities, furnaces, etc., would coalesce into a mass fire that would consume all structures over a large area. This possibility has been intensely studied, but there remains no basis for estimating its probability. Mass fires could be of two kinds: a "firestorm," in which violent inrushing winds create extremely high temperatures but prevent the fire from spreading radially outwards, and a "conflagration," in which a fire spreads along a front. Hamburg, Tokyo, and Hiroshima experienced firestorms in World War II; the Great Chicago Fire and the San Francisco. Earthquake Fire were conflagrations. A firestorm is likely to kill a high proportion of the people in the area of the fire, through heat and through asphyxiation of those in shelters. A conflagration spreads slowly enough so that people in its path can escape, though a conflagration caused by a nuclear attack might take a heavy toll of those too injured to walk. Some believe that firestorms in modern U.S. cities are unlikely because the density of flammable materials ("fuel loading") is too low--the ignition of a firestorm is thought to require a fuel loading of at least 8 lb/ft^2 (Hamburg had 32), compared to fuel loading of 2 lbs/ft^2 in a neighborhood of two-story brick rowhouses. The likelihood of a conflagration depends on the geography of the area, the speed and direction of the wind, and details of building construction. Another variable is whether people and equipment are available to fight fires before they can coalesce and spread.

Electromagnetic Pulse

Electromagnetic pulse (EMP) is an electromagnetic wave similar to radio waves, which results from secondary reactions occurring when the nuclear gamma radiation is absorbed in the air or ground. It differs from the usual radio waves in two important ways. First, it creates much higher electric field strengths. Whereas a radio signal might produce a thousandth of a volt or less in a receiving antenna, an EMP pulse might produce thousands of volts. Secondly, it is a single pulse of energy that disappears completely in a small fraction of a second. In this sense, it is rather similar to the electrical signal from lightning, but the rise in voltage is typically a hundred times faster. This means that most equipment designed to protect electrical facilities from lightning works too slowly to be effective against EMP.

The strength of an EMP pulse is measured in volts per meter (v/m), and is an indication of the voltage that would be produced in an exposed antenna. A nuclear weapon burst on the surface will typically produce an EMP of tens of thousands of v/m at short distances (the 10-psi range) and thousands of v/m at longer distances (1-psi range). Air bursts produce less EMP, but high-altitude bursts (above 19 miles (21 km), produce very strong EMP, with ranges of hundreds or thousands of miles. An attacker might detonate a few weapons at such altitudes in an effort to destroy or damage the communications and electric power systems of the victim. For example, Figure 5 illustrates the coverage of 25-50 kv/m produced by megaton weapons at 100 and 400 km height of burst.

A recently uncovered effect from high altitude nuclear detonations is magneto-hydrodynamic EMP (MHD EMP). It is slowly being understood and quantified so much remains uncertain. It is caused by the interaction of the hot high altitude "fireball" plasma with the

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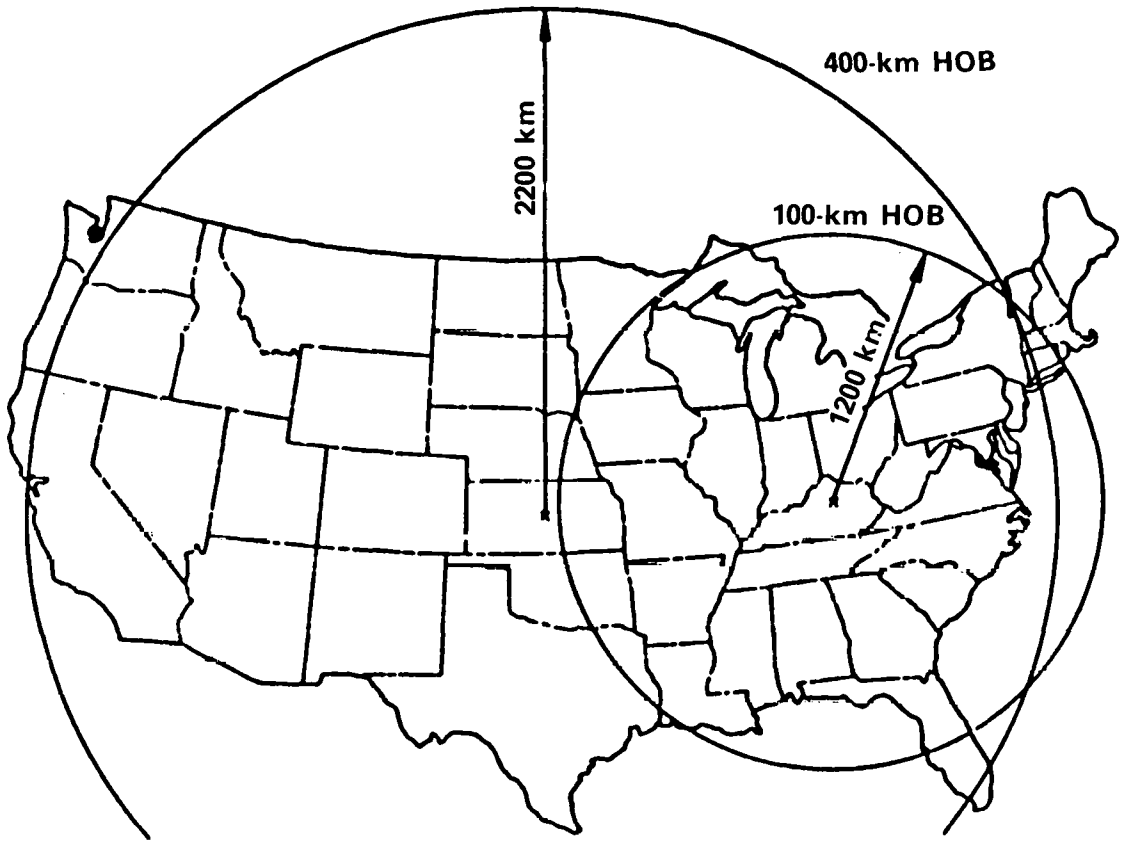


Fig. 5 Typical 25-50 kV/m Area Coverage of EMP for Both a 100-Kilometer and a 400 Kilometer Height of Burst (HOB).

earth's magnetic field causing ionospheric currents to flow and producing perturbations in the earth's magnetic field. This changing field in the presence of the conducting earth acts as a generator producing earth currents and electric potential differences across the earth's surface.

The MHD EMP effect is proportional to the amount of hot plasma produced and its efficiency in interacting with the magnetic field. Bursts in the 200-250 km altitude range are probably most efficient but effects can be produced by bursts from about 150 to 500 km. The frequency of the fields produced are .5-.001 Hz or effectively D.C. Field strengths of about 10 volts/km (± factor of 10) may be expected out to a thousand or so km from the burst. Grounded wire systems, e.g., power grids, phone lines, pipelines, etc., will serve as shorts to this earth potential so large currents may be produced. Being nearly D.C. it readily can enter 60 Hz power systems causing ohmic heating in the wires and most particularly transformers. Only the few very high voltage D.C. transmission systems and heavy duty equipment with large thermal safety factors are immune from this effect.

There are historical instances where natural magnetic perturbations from solar storms and aurora have caused outages in phone systems and power grids. Alaskan power systems have very high outage rates from auroral induced perturbations. D.C. currents of many to tens of amps are regularly noted to flow in their local power system. In the long, low resistance pipeline currents exceeding 200 amps have been measured.

The potential effects of this MHD EMP to the U.S. power grid will be damage to electrical wires and transformers, phone relays, etc. Such damage normally will require equipment replacement, a costly and lengthy repair process.

There is no evidence that EMP is a physical threat to humans. However, electrical or electronic systems, particularly those connected to long wires such as powerlines or antennas, can undergo either of two kinds of damage. First, there can be actual physical damage to an electrical component such as shorting of a capacitor or burnout of a transistor, which would require replacement or repair before the equipment can again be used. Second, at a lesser level, there can be a temporary opera-

tional upset, frequently requiring some effort to restore operations. For example, instabilities induced in power grids can cause the entire system to shut itself down, upsetting computers that must be started again. Base radio stations are vulnerable not only from the loss of commercial power but from direct damage to electronic components connected to the antenna. In general, portable radio transmitter/receivers with relatively short antennas are not susceptible to EMP. The vulnerability of the telephone system to EMP could not be determined.

Fallout

While any nuclear explosion in the atmosphere produces some fallout, the fallout is far greater if the burst is on the surface, or at least low enough for the fireball to touch the ground. The fallout from air bursts alone poses long-term health hazards, but they are trivial compared to the other consequences of a nuclear attack. The significant hazards come from particles scooped up from the ground and irradiated by the nuclear explosion.

The radioactive particles that rise only a short distance (those in the "stem" of the familiar mushroom cloud) will fall back to earth within a matter of minutes, landing close to the center of the explosion. Such particles are unlikely to cause many deaths, because they will fall in areas where most people have already been killed. However, the radioactivity will complicate efforts at rescue or eventual reconstruction.

The radioactive particles that rise higher will be carried some distance by the wind before returning to earth, and hence the area and intensity of the fallout is strongly influenced by local weather conditions. Much of the material is simply blown downwind in a long plume. The map shown in Figure 6 illustrates the plume expected from a 1-Mt surface burst in Detroit if winds were blowing toward Canada. The illustrated plume assumed that the winds were blowing at a uniform speed of 15 mph (24 km) over the entire region. The plume would be longer and thinner if the winds were more intense and shorter and somewhat more broad if the winds were slower. If the winds were from a different direction, the plume would cover a different area. For example, a wind from the northwest would deposit enough fallout on Cleveland to inflict acute radiation sickness on those who did not evacuate or use effective fallout shelters (Figure 7). Thus wind direction can make an enormous difference. Rainfall can also have a significant influence on the ways in which radiation from smaller weapons is deposited, since rain will carry contaminated particles to the ground. The areas receiving such contaminated rainfall would become "hot spots," with greater radiation intensity than their surroundings. When the radiation intensity from fallout is great enough to pose an immediate threat to health, fallout will generally be visible as a thick layer of dust.

The amount of radiation produced by fallout materials will decrease with time as the radioactive materials "decay." Each material decays at a different rate. Materials that decay rapidly give off intense radiation for a short period of time while long-lived materials radiate less intensely but for longer periods. Immediately after the fallout is deposited in regions surrounding the blast site, radiation intensities will be very high as the short-lived materials decay. These intense radiations will decrease relative quickly. The intensity will have fallen by a factor of 10 after 7 hours, a factor of 100 after 49 hours and a factor of 1,000 after 2 weeks. The areas in the plume illustrated in Figures 6 and 7 would become "safe" (by peacetime standards) in 2 to 3 years for the outer ellipse, and in 10 years or so for the inner ellipse.

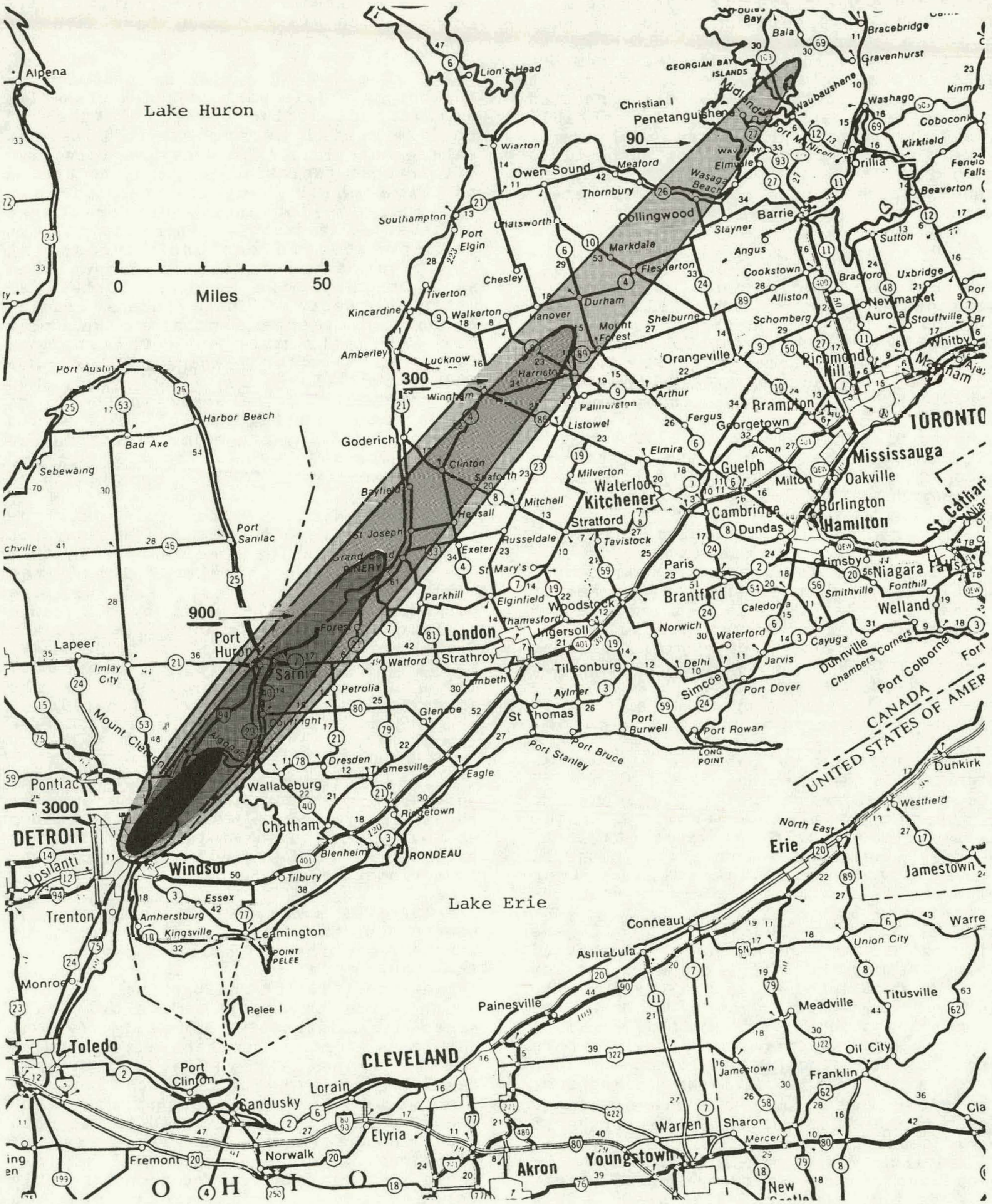
Some radioactive particles will be thrust into the stratosphere, and may not return to earth for some years. In this case only the particularly long-lived particles pose a threat, and they are dispersed around the world over a range of latitudes. Some fallout from U.S. and Soviet weapons tests in the 1950's and early 1960's can still be detected. There are also some particles in the immediate fallout (notably Strontium 90 and Cesium 137) that remain radioactive for years.

The biological effects of fallout radiation are substantially the same as those from direct radiation, discussed above. People exposed to enough fallout radiation will die, and those exposed to lesser amounts may become ill.

There is some public interest in the question of the consequences if a nuclear weapon destroyed a nuclear powerplant. The core of a power reactor contains large quantities of radioactive material, which tends to decay more slowly (and hence less intensely) than the fallout particles from a nuclear weapon explosion. Consequently, fallout from a destroyed nuclear reactor (whose destruction would, incidently, require a high-accuracy surface burst) would not be much more intense (during the first day) or widespread than "ordinary" fallout, but would stay radioactive for a considerably longer time. Areas receiving such fallout would have to be evacuated or decontaminated; otherwise survivors would have to stay in shelters for months.

Uncertainties

The reader is cautioned that there are enormous uncertainties and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Miles
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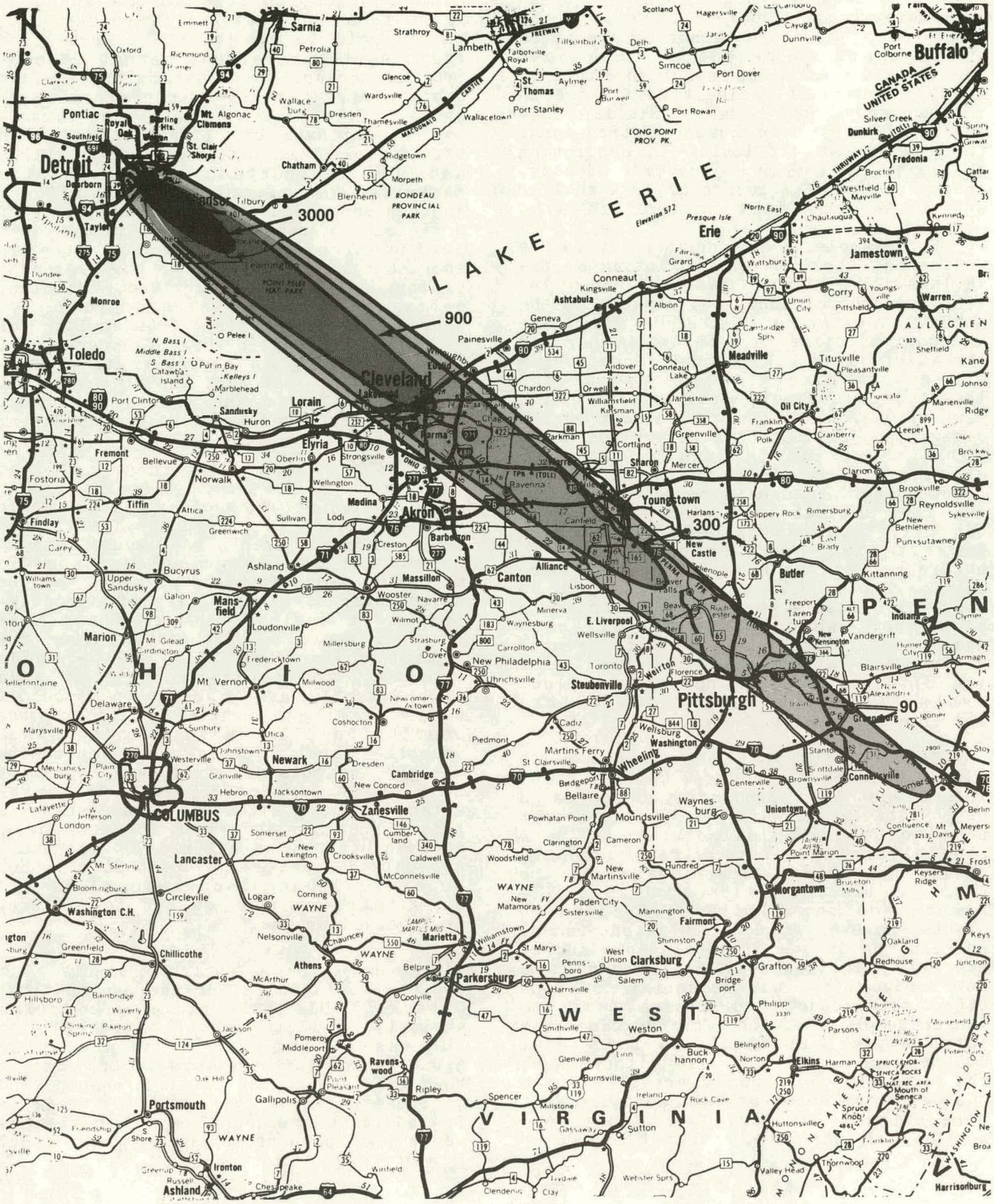
Alpena
Port Austin
Harbor Beach
Bad Axe
Sebewaing
Port Sanilac
Lapeer
Imlay City
Mount Clemens
Pontiac
DETROIT
Ypsilanti
Trenton
Monroe
Toledo
Port Clinton
Sandusky
Fremont
Norwalk
Lorain
Elyria
CLEVELAND
Akron
Youngstown
Warren
Sharon
Painesville
Ashtabula
Conneaut
Erie
North East
Westfield
Dunkirk
Jamestown
Union City
Meadville
Titusville
Oil City
Franklin
New Castle
O H I O
Lake Erie
Pelee I
POINT PELEE
Leamington
Kingsville
Amherstburg
Essex
Windsor
Tilbury
Blenheim
RONDEAU
Chatham
Ridgetown
Wallaceburg
Dresden
Thamesville
Eagle
Port Huron
Sarnia
Petrolia
Courtright
Forest
Grand Bend
Watford
Strathroy
Glencoe
London
St Thomas
Port Stanley
Port Bruce
Aylmer
Tillsonburg
Port Burwell
Delhi
Simcoe
Port Dover
Port Rowan
LONG POINT
Ingersoll
Woodstock
Thamesford
Elginfield
Parkhill
St Mary's
Exeter
Russeldale
Hensall
St Joseph
Bayfield
Seaforth
Clinton
Goderich
Mitchell
Stratford
Tavistock
Kitchener
Waterloo
Milverton
Listowel
Palmerston
Harriston
Wingham
Lucknow
Amberley
Kincardine
Tiverton
Walkerton
Chesley
Hanover
Port Elgin
Southampton
Chatsworth
Owen Sound
Wiarton
Lion's Head
Meaford
Thornbury
Collingwood
Markdale
Flesherton
Durham
Mount Forest
Arthur
Fergus
Elmira
Guelph
Cambridge
Dundas
Hamilton
Burlington
Oakville
Milton
Mississauga
Georgetown
Brampton
TORONTO
Richmond Hill
Markham
Whitby
Aurora
Newmarket
Uxbridge
Stouffville
Bradford
Schomberg
Alliston
Cookstown
Angus
Stayner
Barrie
Orillia
Elmvale
Wasaga Beach
Penetanguishene
Midland
Port McNicoll
Waubaushene
GEORGIAN BAY ISLANDS
Christian I
Bala
Bracebridge
Gravenhurst
Washago
Coboconk
Kirkfield
Beaverton
Sutton
Orangeville
Shelburne
Paris
Brantford
Norwich
Waterford
Caledonia
Jarvis
Cayuga
Dunnville
Smithville
Grimsby
Fonthill
Welland
Niagara Falls
Port Colborne
Chambers Corners
CANADA
UNITED STATES OF AMERICA

Figure 6


3000
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LAKE ERIE
Detroit
Toledo
Cleveland
Akron
Youngstown
Pittsburgh
Buffalo
Erie
COLUMBUS
Sarnia
Windsor
Canton
Wheeling
Parkersburg
Clarksburg
Morgantown
Zanesville
Newark
Lancaster
Chillicothe
Portsmouth
Ashland
Marietta
Mansfield
Sandusky
Lorain
Elyria
Ashtabula
Meadville
Jamestown
Butler
Connellsville
Greensburg
Washington
Steubenville
New Castle
Sharon
Parma
Dunkirk
Fredonia
Chatham
CANADA
UNITED STATES
OHIO
WEST VIRGINIA
Elevation 572

Figure 7

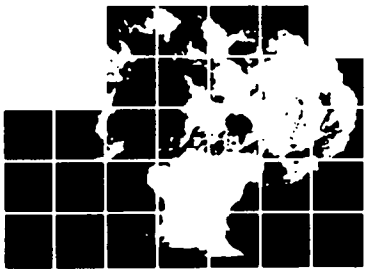
imponderables involved in any effort to assess the effects of a nuclear war, and an effort to look at the entire range of effects compounds them. Many of these uncertainties are obvious ones: if the course of a snowstorm cannot be predicted 1 day ahead in peacetime, one must certainly be cautious about predictions of the pattern of radioactive fallout on some unknown future day. Similar complexities exist for human institutions: there is great difficulty in predicting the peacetime course of the U.S. economy, and predicting its course after a nuclear war is a good deal more difficult.

For example, a key uncertainty is the weather at the time of the attack at the various places where bombs explode. The local wind conditions, and expecially the amount of moisture in the air, may make an enormous difference in the number and spread of fires. Wind conditions over a wider area determine the extent and location of fallout contamination. The time of year has a decisive effect on the damage that fallout does to agriculture--while an attack in January might be expected to do only indirect damage (destroying farm machinery or the fuel to run it), fallout when plants are young can kill them, and fallout just before harvest time would probably make it unsafe to get the harvest in. The time of year also has direct effects on population death--the attack in the dead of winter, which might not directly damage agriculture, may lead to greater deaths from fallout radiation (because of the difficulty of improvising fallout protection by moving frozen dirt) and from cold and exposure.

The question of how rapid and efficient economic recovery would be--or indeed whether a genuine recovery would be possible at all--raises questions that seem to be beyond calculation. It is possible to calculate direct economic damage by making assumptions about the size and exact location of bomb explosions, and the hardness of economic assets; however, such calculations cannot address the issues of bottlenecks and of synergy. Bottlenecks would occur if a key product that was essential for many other manufacturing processes could no longer be produced, or (for the case of a large attack) if an entire industrial sector were wiped out. In either case, the economic loss would greatly exceed the peacetime value of the factories that were actually destroyed. There does not appear to be any reliable way of calculating the likelihood or extent of bottlenecks because economic input/output models do not address the possiblility or cost of substitutions across sectors. Apart from the creation of bottlenecks, there could be synergistic efforts; for example, the fire that cannot be controlled because the blast destroyed fire stations, as actually happened at Hiroshima. Here, too, there is no reliable way to estimate the likelihood of such effects would radiation deaths of birds and the destruction of insecticide factories have a synergistic effect? Another uncertainty is the possibility of organization bottlenecks. In the most obvious instance, it would make an enormous difference whether the President of the United States survived. Housing, defined as a place where a productive worker lives as distinct from shelter for refugees, is another area of uncertainty. Minimal housing is essential if production is to be restored, and it takes time to rebuild it if the existing housing stock is destroyed or is beyond commuting range of the surviving (or repaired) workplaces.

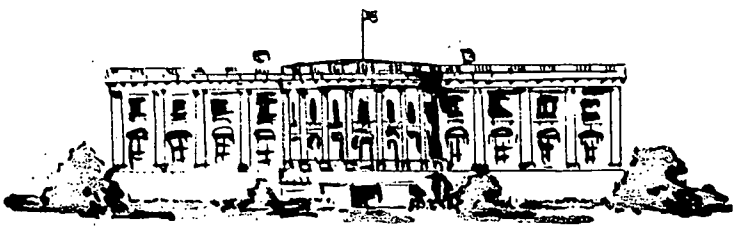
Finally, actual nuclear attacks would not take place in a vacuum. There would be a series of events that would lead up to the attack, and these events could markedly change both the physical and the psychological vulnerability of a population to a nuclear attack. Even more critical would be the events after the attack. Assuming that the war ends promptly, the terms on which it ends could greatly affect both the economic condition and the state of mind of the population. The way in which other countries are affected could determine whether the outside world is a source of help or of further danger. The post-attack military situation (and nothing in this discussion addresses the effects of nuclear attacks on military power) could not only determine the attitude of other countries, but also whether limited surviving resources are put to military or to civilian use.

Moreover, most analyses assume that the war would end after the hypothetical attack. This assumption simplifies analysis, but it might not prove to be the case. How much worse would the situation of the survivors be if, just as they were attempting to restore some kind of economy following a massive attack, a few additional weapons destroyed the new centers of population and of government?

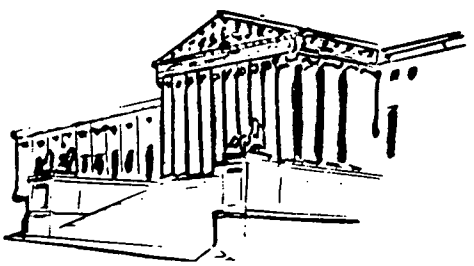


Authorities

THE LEGAL BASIS OF EMERGENCY AUTHORITIES



White House



Courts

Congress

Executive Order 11051 *(dated 9/27/62)*

Prescribing Responsibilities of the Office of Emergency Planning In the Executive Office of the President

Executive Order 11490, as Amended *(dated 10/28/69)*

Assigning Emergency Preparedness Functions to Federal Departments and Agencies

Executive Order 11921, as Amended *(dated 6/11/76)*

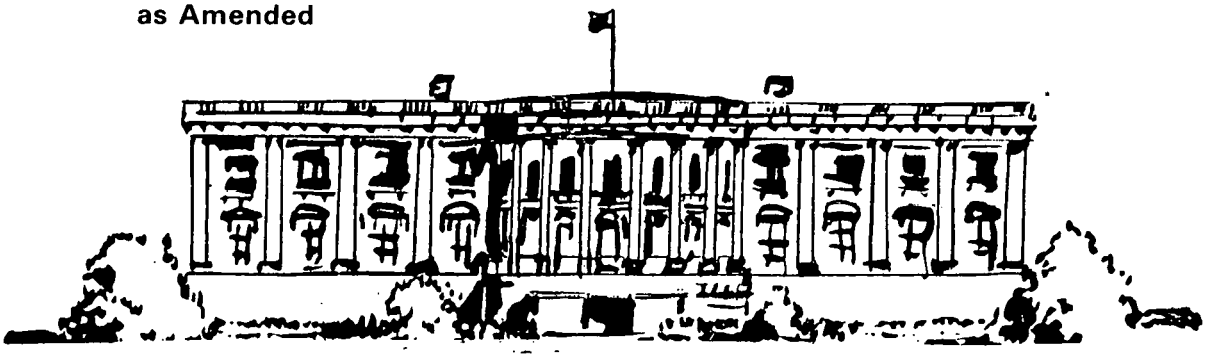
Adjusting Emergency Preparedness Functions to Organizational and Functional Changes in Federal Departments and Agencies

Executive Order 10480 *(dated 8/14/53)*

Further Providing for the Administration of the Defense Mobilization Program (Part II includes delegations for priorities and allocations)

Executive Order 10647 *(dated 11/28/55)*

Providing for the Appointment of "Special Government Employees" Without Compensation Under the Defense Production Act of 1950, as Amended



Authorities

DEFENSE MOBILIZATION ORDER 3

PART 103—DEFENSE PRODUCTION; PRIORITIES AND ALLOCATIONS AUTHORITY (DMO–3)

(1) Policy guidance with regard to the use of the Priorities and allocations authority of title I of the Defense Production Act of 1950, as amended, and

(2) Delegation of such authority to certain officers and agencies.

1. *Purpose.* This order (1) establishes policy guidance in accordance with section 101 of Executive Order 10480 and section 401 of Executive Order 11051, (2) delegates authority in accordance with section 201 of Executive Order 10480, as amended, and (3) delegates other authorities under the Defense Production Act of 1950, as amended.

2. *Cancellation.* This order supersedes Defense Mobilization Order I–7, dated August 14, 1953 (18 F.R. 5386) (redesignated at 18 F.R. 6737, October 23, 1953); Defense Mobilization Order I–7, Amendment 1, Revised, dated November 12, 1954 (19 F.R. 7348); Defense Mobilization Order VII–3, Revised, dated January 10, 1956 (21 F.R. 253); and Defense Mobilization Order VII–3, Supplement 1, dated August 27, 1955 (20 F.R. 6339).

3. *Policies.* a. Authority of title I of the Defense Production Act of 1950, as amended, to control the distribution and use of materials and facilities, shall not be used except to require preference in the performance of contracts and orders and to allocate materials and facilities to accomplish the following:

(1) Direct military and atomic energy programs.

(2) Other programs and activities which are related to the military and atomic energy programs and which are certified by the Department of Defense or the Atomic Energy Commission and specifically authorized by the Office of Emergency Planning.

(3) Deliveries, production, and construction in industry required to fulfill direct military and atomic energy programs and the related programs and activities authorized under (2) above.

(4) The general distribution in the civilian market of materials found to be scarce and critical pursuant to the provisions of section 101(b) of the Defense Production Act of 1950, as amended, and approved by the Director of the Office of Emergency Planning under section 201 (b) of Executive Order 10480, as amended.

(5) Assistance in providing materials and facilities for the restoration of productive capacity damaged or destroyed by a major disaster as defined and determined under the provisions of Public Law 875, 81st Congress (42 U.S.C. 1855):

(a) Whenever the facility to be restored has delivery orders identified by authorized program identification symbols under the defense materials system.

(b) Whenever failure to restore the facility would result in failure to meet a defense delivery schedule.

(c) Whenever failure to restore the facility would prevent the provision of a service necessary to meet a defense delivery schedule.

(d) When and to the extent that assistance is necessary to restore mobilization base capacity for the production of defense items including materials and services covered by the Office of Emergency Planning expansion goals whether or not such goals remain open.

b. The distribution of steel, copper, aluminum and nickel alloys for military and atomic energy and authorized related programs and activities shall assure:

(1) That supplies of these materials are available to those programs and ac-

tivities on time and in proper quantity.

(2) That demands of these programs and activities shall be distributed among suppliers on a generally fair and equitable basis.

(3) That allotments are not made in excess of actual current requirements of these programs and activities.

These criteria shall also apply to the maximum practicable extent to the use of priorities for materials other than steel, copper, aluminum and nickel alloys in support of direct military and atomic energy programs and other authorized programs and activities.

c. The Office of Emergency Planning shall review requirements and issue program determinations approving programs and making allotments of steel, copper, aluminum and nickel alloys to the Department of Defense and the Atomic Energy Commission for direct military and atomic energy programs and related programs and activities that have been authorized and assigned to these agencies for purposes of establishing them as programs eligible for priorities and allocations support, in accordance with the Business and Defense Services Administration regulations issued pursuant to title 1 of the Defense Production Act of 1950, as amended.

d. All agencies now or hereafter designated by the Director of the Office of Emergency Planning to furnish supply and requirements data shall be responsible for the provision of such data and shall be entitled to be heard in connection with the determination of programs by the Director. The evaluation of supply and requirements data and the determination of programs shall be the function of the Director of Economic Affairs of the Office of Emergency Planning with right of appeal to the Director of the Office of Emergency Planning by any designated agency.

e. Exceptions to the foregoing basic policy may be made in the interests of the national defense by or with the authority of the Director of the Office of Emergency Planning.

4. *Delegation of authority.* a. The functions of the Director of the Office of Emergency Planning under title 1 of the Defense Production Act of 1950, as amended, are hereby delegated to those offices and agencies named in section 201 of Executive Order 10480, as amended with respect to the areas of responsibilities designated, and subject to the limitations prescribed in that section.

b. The functions conferred upon the Director of the Office of Emergency Planning by section 310(b) and 311(b) of Executive Order 10480, as amended, to certify the essentiality of loans to the Secretary of the Treasury and the Export-Import Bank of Washington are hereby delegated to the Administrator of General Services to the extent that such loans are a part of and in accordance with the terms of programs certified by the Director of the Office of Emergency Planning pursuant to section 312 of Executive Order 10480.

c. The functions conferred upon the Director of the Office of Emergency Planning by section 304 of Executive Order 10480, as amended, relative to the encouragement of exploration, development and mining of strategic and critical metals and minerals are hereby delegated to the Secretary of the Interior.

d. The functions delegated by this order may be redelegated with or without authority for further redelegation, and redelegations on the date hereof shall continue in effect until rescinded or modified by appropriate authority.

e. Officers and agencies performing the functions delegated by this order or redelegated by, or by authority of, the delegates hereunder shall perform such functions subject to the direction and control of the Director of the Office of Emergency Planning as provided by section 101 of Executive Order 10480, as amended. Such officers and agencies shall furnish such reports on the use of the authority as the Director may require.

[28 FR 12164, Nov. 15, 1963. Redesignated at 40 FR 27218, June 27, 1975]

DEFENSE MOBILIZATION ORDER 4

PART 104—GUIDANCE ON PRIORITY USE OF RESOURCES IN IMMEDIATE POST-ATTACK PERIOD (DMO–4)

1. *Purpose.* This Order (1) states the policy of the Federal Government on use of resources in the period immediately following a nuclear attack on the United States, (2) provides general guidance for Federal, State, and local government officials on activities to be accorded priority in the use of postattack resources, and (3) lists those items essential to national survival in the immediate postattack period.

2. *Cancellation.* Defense Mobilization Order 8500.1, Guidance on Priority Use of Resources in Immediate Postattack Period, dated April 24, 1964 (29 F.R. 5796) is hereby superseded.

3. *General policy.* In an immediate postattack period all decisions regarding the use of resources will be directed to the objective of national survival and recovery. In order to achieve this objective, postattack resources will be assigned to activities concerned with the maintenance and saving of lives, immediate military defense and retaliatory operations, and economic activities essential to continued survival and recovery.

This guidance is designed to achieve a degree of national equity in the use of resources and to assign and conserve resources effectively in the immediate postattack period. Until more specific instructions are available, these are the general guidelines within which managerial judgment and common sense must be used to achieve national objectives under widely differing emergency conditions.

4. *Responsibilities.* As stated in The National Plan for Emergency Preparedness, the direction of resources mobilization is a Federal responsibility. However, in the period immediately following an attack, certain geographical areas may be temporarily isolated, and State and local governments will assume responsibility for the use of resources remaining in such areas until effective Federal authority can be restored. State and local governments will not assume responsibility for resources under the jurisdiction of a Federal agency where the Federal agency is able to function.

As soon as possible after an attack and until specific national direction and guidance on the use of resources is provided, Federal, State, and local officials will determine what resources are available, to what needs they can be applied, how they are to be used, and the extent to which resources are deficient or in excess of survival needs. They will base determinations as to the relative urgency for use of resources primarily upon the importance of specific needs of defense, survival, and recovery.

5. *Priority activities in immediate postattack period.* The following activities are to be accorded priority over all other claims for resources. There is no significance in the order of the listing—all are important. The order in which and the extent to which they are supported locally may vary with local conditions and circumstances. If local conditions necessitate the establishment of an order of priority among these activities, that order shall be based on determinations of relative urgency among the activities listed, the availability of resources for achieving the actions required, and the feasibility and timeliness of the activities in making the most rapid and effective contribution to national survival.

a. The immediate defense and retaliatory combat operations of the Armed Forces of the United States and its Allies: This includes support of military personnel and the production and distribution of military and atomic weapons, materials and equipment required to carry out these immediate defense and retaliatory combat operations.

b. Maintenance or reestablishment of Government authority and control to restore and preserve order and to assure direction of emergency operations essential for the safety and protection of the people. This includes:

(1) Police protection and movement direction;

(2) Fire defense, rescue and debris clearance;

(3) Warnings;

(4) Emergency information and instructions;

(5) Radiological detection, monitoring and decontamination.

c. Production and distribution of survival items and provision of services essential to continued survival and rapid recovery. (For list of survival items, see Appendix 1 to this order.) These include:

(1) Expedient shelter;

(2) Food, including necessary processing and storage;

(3) Feeding, clothing, lodging, and other welfare services;

(4) Emergency housing and community services;

(5) Emergency health services, including medical care, public health and sanitation;

(6) Water, fuel, and power supply;

(7) Emergency repair and restoration of damaged vital facilities.

d. Essential communications and transportation services needed to carry out the above activities.

e. Provision of supplies, equipment, and repair parts to produce and distribute goods needed for the above activities.

6. *Assignment of resources.* Resources required for essential uses, including manpower, will be assigned to meet the emergency requirements of the priority activities indicated above. The principal objectives are to use available resources to serve essential needs promptly and effectively, and to:

a. Protect and to prevent waste or dissipation of resources prior to their assignment to priority activities;

b. Support production of essential goods. Other production will be permitted to continue only from inventories on hand and when there is no emergency

requirement for the resources vital to this production.

c. Support construction for emergency repair and restoration, construction of facilities needed for survival, or the conversion of facilities to survival use, where this can be accomplished quickly. Other construction already under way should be stopped, and no new construction started unless it can be used immediately for essential purposes upon completion.

[29 F.R. 16123, Nov. 10, 1964]

APPENDIX 1

This document contains a list of items considered essential to sustain life at a productive level to assure national survival in an emergency. The list identifies items to which major attention should be given in all phases of preattack planning to insure the availability of basic essentials for a productive economy in the event of a nuclear attack. Supply-requirements studies and assessments for these items will be made to disclose critical deficiencies or other problems that can be anticipated. Revisions will be made as necessary to keep the items as up-to-date as possible.

The items are arranged by seven major groups:

(1) Health Supplies and Equipment.
(2) Food.
(3) Body Protection and Household Operations.
(4) Electric Power and Fuels.
(5) Sanitation and Water Supply.
(6) Emergency Housing and Construction Materials and Equipment, and
(7) General Use Items.

Survival items are defined as "those items without which large segments of the population would die or have their health so seriously impaired as to render them both burdensome and non-productive." The items have been classified into Group A or Group B, with Group A representing end products consumed or used directly by the population, and Group B consisting of those items essential to the effective production and utilization of the Group A items, which are consumed or used directly by the people.

There are no Group B items in the categories of Health Supplies and Equipment, Body Production and Household Operations, and Emergency Housing and Construction Materials and Equipment. All of these items are considered to be consumed directly and any attempt to separate them in to A and B groupings would be too arbitrary to be meaningful.

It is important to keep in mind the fact that while the items listed are the basic essentials necessary for maintaining a viable economy during the first six months following an attack, not all of them would create problems that would require government action preattack to insure adequate supplies. The aforementioned supply-requirements studies will be undertaken to identify the problem areas. In developing supply data, all available production capacity, existing inventories, and possible substitutions will be considered. For example, in analyzing clothing items, all available supplies would be considered from sport to dress shirts, from overalls to dress suits. However, new production would be limited to the simplest form of the basic item which can be produced. The final determination as to which of the items are most critical and which may require preattack actions by the Government, as well as the type of actions which must be taken, can be made only after a comprehensive supply-requirements analysis is completed.

LIST OF ESSENTIAL SURVIVAL ITEMS

I. Health Supplies and Equipment:

GROUP A

1. *Pharmaceuticals:*
Alcohol.
Analgesics, non-narcotic.
Antibiotics and antibacterials.
Antidiabetic agents, oral.
Antihistamines.
Antimalarials.
Atropine.
Blood derivatives.
Carbon dioxide absorbent.
Cardiovascular depressants.
Cardiovascular stimulants.
Corticosteriods.
Diuretics.
General anesthetics.
Hypnotics.
Insulin.
Intravenous solutions for replacement therapy.
Local anesthetics.
Lubricant, surgical.
Morphine and substitutes.
Oral electrolytes.
Oxygen.
Surgical antiseptics.
Sulfa drugs.
Synthetic plasma volume expanders.
Vitamin preparations, pediatric.
Water for injection.

2. *Blood Collecting and Dispensing Supplies:*
Blood collecting and dispensing containers.
Blood donor sets.
Blood grouping and typing sera.
Blood recipient sets.
Blood shipping containers.

3. *Biologicals:*
Diphtheria toxoid.
Diphtheria antitoxin.
Diphtheria and tetanus toxoids and pertussis vaccine.
Gas gangrene antitoxin.
Poliomyelitis vaccine, oral.
Rabies vaccine.
Smallpox vaccine.
Tetanus antitoxin.
Tetanus toxoid, absorbed.
Typhoid vaccine.
Typhus vaccine, epidemic.
Yellow fever vaccine.

4. *Surgical Textiles:*
Adhesive plaster.
Bandage, gauze.
Bandage, muslin.
Bandage, plaster of paris.
Cotton, USP.
Surgical pads.
Stockinette, surgical.
Wadding, cotton sheet.

5. *Emergency Surgical Instruments and Supplies:*
Airway, pharyngeal.
Anesthesia apparatus.
Basin, wash, solution.
Blade, surgical knife.
Brush, scrub, surgical.
Catheter, urethral.
Containers for sterilization.
Chisel, bone.
Drain, Penrose.
Dusting powder.
Forceps, dressing.
Forceps, hemostatic.
Forceps, obstetrical.
Forceps, tissue.
Gloves, surgeon's.
Handles, surgical knife.
Holder, suture needle.
Inhaler, anesthesia, Yankauer (ether mask).
Intravenous injection sets.
Knife, cast cutting.

Lamps, for diagnostic instruments.
Lamps, for surgical lights.
Laryngoscope.
Light, surgical, portable.
Litter.
Mallet, bone surgery.
Needles, hypodermic, reusable.
Needles, suture, eyed.
Otoscope and ophthalmoscope set.
Probe, general operating.
Razor and blades (for surgical preparation).
Retractor, rib.
Retractor set, general operating.
Rongeur, bone.
Saw, amputating.
Saw, bone cutting, wire (Gigli).
Scissors, bandage.
Scissors, general surgical.
Sigmoidoscope.
Speculum, vaginal.
Sphygmomanometer.
Splint, leg, Thomas.
Splint, wire, ladder.
Sterilizer, pressure, portable.
Stethoscope.
Sutures, absorbable.
Sutures, absorbable, with attached needle.
Sutures, nonabsorbable.
Sutures, nonabsorbable, with attached needle.
Syringes, Luer, reusable (hypodermic syringes).
Thermometers, clinical.
Tracheotomy tube.
Tube, nasogastric.
Tubing, rubber or plastic, and connectors.
Vascular prostheses.
Webbing, textile, with buckle.

6. *Laboratory Equipment and Supplies:*

Bacteriological culture media and apparatus.
Balance, laboratory with weights.
Blood and urine analysis instruments, equipment and supplies.
Chemical reagents, stains and apparatus.
Glassware cleaning equipment.
Laboratory glassware.
Microscope and slides.
Water purification apparatus.

GROUP B

None.

II *Food:*

GROUP A

1. *Milk Group.* Milk in all forms, milk products. Important for calcium, riboflavin, protein, and other nutrients.

2. *Meat and Meat Alternate Group.* Meat, poultry, fish, eggs; also dry beans, peas, nuts. Important for protein, iron, and B-vitamins.

3. *Vegetable-Fruit Group,* including. 1. Dark Green and yellow vegetables. Important for Vitamin A. 2. Citrus fruit or other fruit or vegetables. Important for Vitamin C. 3. Other fruits and vegetables, including potatoes.

4. *Grain Products.* Especially enriched, restored, cereal and cereal products, and bread, flours, and meals. Important for energy, protein, iron, and B-vitamins.

5. *Fats and Oils.* Including butter, margarine, lard, and other shortening oils. Important for palatability and food energy; some for Vitamin A and essential fatty acids.

6. *Sugars and Syrups.* Important for palatability and food energy.

7. *Food Adjuncts.* Certain food adjuncts should be provided to make effective use of available foods. These include antioxidants and other food preservatives, yeast, baking powder, salt, soda, seasonings and other condiments. In addition, coffee, tea, and cocoa are important for morale support.

GROUP B

Food containers.
Nitrogenous fertilizers.
Seed and livestock feed.
Salt for livestock.
Veterinary Medical Items:
Anthrax vaccine.
Black leg vaccine.
Hog cholera vaccine.
Newcastle vaccine.

III. *Body Protection and Household Operations:*

GROUP A

1. *Clothing:*
Gloves and mittens.
Headwear.
Hosiery.
Outerwear.
Shoes and other footwear.
Underwear.
Waterproof outer garments.
2. *Personal Hygiene Items:*
Diapers, all types.
Disposable tissues.
First aid items (included on Health Supplies and Equipment List).
Nipples.
Nursing bottles, all types.
Pins.
Sanitary napkins.
Soaps, detergents, and disinfectants.
Toilet tissue.
3. *Household Equipment:*
Bedding.
Canned heat.
Cots.
Hand sewing equipment.
Heating and cooking stoves.
Incandescent hand portable lighting equipment (including flashlights, lamps, batteries).
Kitchen, cooking, and eating utensils.
Lamps (incandescent medium base) and lamp holders.
Matches.
Nonelectric lighting equipment.
Sleeping bags.

GROUP B

None.

IV. *Electric Power and Fuels:*

1. *Electric Power.*

GROUP A

Electricity.

GROUP B

Conductors (copper and/or aluminum), including bare cable for high voltage lines and insulated wire or cable for lower voltage distribution circuits.
Switches and circuit breakers.
Insulators.
Pole line hardware.
Poles and crossarms.
Transformers (distribution, transmission, and mobile).
Tools for live-circuit operations, including rubber protective equipment, and linemen's tools.
Utility repair trucks, fully equipped.
Prime mover generator sets up to 501 kilowatts and 2400 volts, including portable and mobile sets up to 150 kilowatts and 110/220/440 volts, 3-phase, 60-cycle complete with fuel tank and switchgear in self-contained units.

2. *Petroleum Products.*

GROUP A

Gasoline.
Kerosene.
Distillate fuel oil.
Residual fuel oil.
Liquefied petroleum oil.
Lubricating oil.
Grease.

GROUP B

Storage tanks.
Pumps for loading and unloading.
Pressure containers and fittings for liquefied petroleum gas.

3. *Gas.*

GROUP A

Natural gas.
Manufactured gas.

GROUP B

Various sizes of pipe (mostly steel).
Various sizes of valves, fittings, and pressure regulators.
Specialized repair trucks and equipment.

4. *Solid Fuels.*

GROUP A

Coal and coke.

GROUP B

Conveyor belting.
Insulated trail cables.
Trolley feeder wire.
Roof bolts.

V. *Sanitation and Water Supply:*

GROUP A

1. *Water.*
2. *Water Supply Materials:*
a. *Coagulation:*
Ferric chloride.
Ferrous sulfate.
Ferric sulfate.
Chlorinated copperas.
Filter alum.
Hydrated lime.
Pulverized limestone.
Soda ash.
b. *Disinfection Chemicals:*
High-test hypochlorites (70 percent) in drums, cans, ampules.
Iodine tablets.
Liquid chlorine, including containers.
Chlorine compounds (not gas).
c. *Miscellaneous Materials:*
Diatomaceous earth.
Activated carbon.
3. *Chemical Biological, and Radiological (CBR) Detection, Protection, and Decontamination Items:*
Calibrators.
Chemical agent detection kits, air, food, and water.
Dosimeters and chargers.
Potective masks, clothing, helmets.
Survey meters (Alpha, Beta, Gamma).
Warning signs—biological, chemical, and radiological contamination.
4. *Insect and Rodent Control Items:*
a. *Insecticides:*
DDT, water dispersible powder (75 percent).
Lindane powder, dusting (1 percent).
Malathion, liquid, emulsifiable concentrate (57 percent).
Deet (diethyltoluamide) 75 percent in denatured alcohol.
Pyrothrum.
b. *Rodenticides:*
Anticoagulant type, ready-mixed bait.
"1080" (sodium monofluoroacetate) (for controlled use only).
5. *General Sanitation:*
Lye.

GROUP B

1. *General Supplies and Equipment:*
Chemical feeders.
Mobile and portable pressure filters.
Chlorinators (gas and hypochlorites).
Pumps and appurtenances, Hand—Electric—Gasoline—Diesel.
Well-drilling equipment, including well casing, drive pipe and drive points.
2. *Storage and Transport Equipment:*
Lyster bags.
Storage tanks, collapsible and portable.
Storage tanks, rigid, transportable.
Storage tanks, wood stave, knock-down.
3. *Laboratory Equipment and Supplies:*
Membrane filter kits with filters and media.
Chlorine and pH determination equipment.
4. *Sanitation Equipment:*
Hand sprayer, continuous type.
Hand sprayer, compression type.
Hand duster, plunger type.
Spraying equipment for use with helicopter, fixed-wing light aircraft, high-speed fixed-wing attack aircraft, and cargo-type aircraft.

VI. *Emergency Housing and Construction Materials and Equipment.*

GROUP A

Asphalt and tar roofing and siding products.
Builders hardware—hinges, locks, handles, etc.
Building board, including insulating board, laminated fiberboard, hardpressed fiberboard, gypsum board, and asbestos cement (flat sheets and wallboard).
Building papers.
Plastic patching, couplings, clamps, etc. for emergency repairs.
Plumbing fixtures and fittings.
Prefabricated emergency housing.
Rough hardware—nails, bolts, screws, etc.
Sewer pipe and fittings.
Tents and tarpaulins; canvas, plastics, and other similar materials.
Lumber and allied products; Lumber, principally 1-inch and 2-inch, minor quantities of small and large timbers; siding and flooring; plywood; millwork, doors, and windows.
Masonry products—brick, cement, lime, concrete block, hollow tile, etc.
Translucent window coverings.
Water pipe and hose, plus fittings—all types including fire hose.

GROUP B

None.

VII. *General Use Items.*

GROUP A

None.

GROUP B

Batteries, wet and dry cell.
Bulldozers.
Fire fighting equipment.
Light equipment and hand tools (including electric powered) for carpentry, masonry, plumbing, and excavation.
Pipe installation materials and equipment.
Refrigerators, mechanical.
Rigging tools—cables, ropes, tackles, hoists, etc.
Tank railroad cars.
Tank Trucks and trailers.
Tires.
Trenching equipment.
Truck tractors and trailers, including low bed.
Trucks up to five tons (25 percent equipped with power takeoff).
Welding equipment and supplies (electric and acetylene).

[29 FR 15124, Nov. 10, 1964. Redesignated at 40 FR 27218, June 27, 1975]

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Part 322

Delegation of Certain Defense Production Act; Priorities and Allocation Authorities

AGENCY: Federal Emergency Management Agency (FEMA).

ACTION: Final rule.

SUMMARY: This amendment to 44 CFR Part 322 delegates Defense Production Act Title 1, priorities and allocations authority to the Secretary of Transportation in the area of civil transportation services.

EFFECTIVE DATE: August 12, 1980.

FOR FURTHER INFORMATION CONTACT: Clair K. Blong or Charles McIntosh, Resources Management Division (FEMA). Telephone: (202) 566–1324.

SUPPLEMENTARY INFORMATION: This delegation helps the Department of Defense meet its motor carrier services requirements in defense contingencies by providing the Secretary of Transportation with authority to expeditiously carry out his leadership and coordinating roles in the area of civil transportation services. This amendment to 44 CFR Part 322 is not subject to the provisions for notice and public comment in 5 U.S.C. 553 because it involves the military function of the United States.

§ 322.3 [Amended]

Accordingly, 44 CFR, Chapter 1, § 322.3 is amended by renumbering paragraphs (b) through (e) as (c) through (f) and adding a new paragraph (b) as follows:

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(b) The functions conferred upon the Director of the Federal Emergency Management Agency under Title 1 of the Defense Production Act of 1950, as amended, with respect to priorities and allocations for civil transportation services are hereby delegated to the Secretary of Transportation, subject to the limitations prescribed in this regulation.

John W. Macy, Jr.,

Director, Federal Emergency Management Agency.

August 6, 1980.

[FR Doc. 80-24190 Filed 8-11-80; 8:45 am]

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DEFENSE MOBILIZATION ORDER 11

PART 111—GENERAL POLICIES FOR STRATEGIC AND CRITICAL MATERIALS STOCKPILING (DMO–11)

1. *Purpose.* This order sets forth revised policies for the administration of strategic and critical materials stockpiling.

2. *Cancellation.* This order supersedes Defense Mobilization Order 8600.1A (33 FR 19079, Dec. 21, 1968).

3. *Policies.* By virtue of the authority vested in me by Executive Order 11051, the following policies are promulgated to govern the administration of strategic and critical materials stockpiling:

a. *General.* The strategic stockpile shall be so administered as to assure the availability of strategic and critical materials in times of national emergency.

b. *Period covered by stockpiling.* All strategic stockpile objectives for conventional war shall be limited to meeting estimated shortages of materials for the first year of a war.

c. *Stockpile objectives.* Strategic stockpile objectives shall be adequate for supplies of these materials in time of national emergency.

d. *Emergency requirements.* The requirements estimates for use in times of national emergency, where appropriate, reflect specific requirements to the extent available. It shall be assumed that the total requirements will approximate the capacity of industry to consume, taking into account necessary wartime limitation, conservation and substitution measures. Departments and agencies having responsibilities with regard to requirements data on stockpile materials shall review such data and provide, upon his request, the Director of the Office of Emergency Preparedness with information as to all significant changes.

e. *Emergency supplies.* Estimates of supply for the mobilization period shall be based on readily available capacity and known resources in the United States and such other countries as directed by the National Security Council. Departments and agencies having the responsibilities with regard to supply data on stockpile materials shall review such data and provide the Director of the Office of Emergency Preparedness, upon his request, with information as to all significant changes.

f. *Provision for special-property materials.* Arrangements shall be made for the regular availability of objective scientific advice to assist in the evaluation of prospective needs for high temperature and other special-property materials. Such materials shall be stockpiled if reasonably firm minimum requirements indicate the existence of a supply deficit in the event of an emergency.

g. *Supply-requirements reviews.* The supply-requirements balance for any material that is now or may become important to defense shall be kept under continuing surveillance. Supply-requirements data submitted pursuant to paragraphs d. and e. above shall be examined upon receipt. A full-scale review may be undertaken at any time that a change is believed to be taken place that would

have a significant bearing on the wartime readiness position. Priority of review shall be given to materials under procurement.

h. *Procurement policy.* Unfilled objectives shall be attained expeditiously by cash procurement or otherwise as the Director shall deem appropriate. Long-term contracts shall contain termination clauses whenever possible. All feasible measures for meeting materials deficits in an emergency shall be considered. Stockpiling shall be undertaken only when it is clear that it is the best solution.

i. *Maintenance of the mobilization base.* A portion of the mobilization base comprises existing or projected productive capacity the output of which will be relied on to fill defense requirements. All inventories of Government-owned materials held for long-term storage are a part of the mobilization base and should be weighed in determining the need for a relevant portion of the productive segment of the mobilization base. The maintenance of any portion of the productive segment of the mobilization base through stockpile procurement shall be undertaken only within unfilled stockpile objectives.

j. *Upgrading to ready usability.* In order to satisfy the initial surge of abnormal demands following intensive mobilization in a period of national emergency, stockpile objectives of upgraded forms of such materials shall be established for immediate use in such circumstances. For this purpose a minimum readiness inventory shall be provided near centers of consumption. Materials in Government inventories may be upgraded for such stockpiling purposes only when the net cost of such processing including transportation and handling is less than the cost of new material. Materials should be upgraded to forms which will permit the greatest use-flexibility. Surplus materials may be used to pay for the upgrading of the same or other materials required to meet objectives providing that the use of excess materials for this purpose is in conformance with disposal criteria.

k. *Beneficiation of subspecification materials.* Subspecification-grade materials in Government inventories may be beneficiated within the limits of the objectives when this can be accomplished at less cost than buying new material.

l. *Cancellation of commitments.* Commitments for deliveries to national stockpile and Defense Production Act inventories beyond the objectives shall be canceled or reduced when settlements can be arranged which would be mutually satisfactory to the supplier and the Government and which would not be disruptive to the economy or to projects essential to the national security. Such settlements may take into account anticipated profits and cover adjustments for above-market premiums. The settlement of commitments may be made through the payment of cash or through the use of surplus materials. Responsibility with respect to the settlement of commitments in the light of overall interest of the Government rests with the Administrator of General Services who shall keep other agencies advised and consult with them to the extent appropriate.

m. *Retention of other inventories.* Within the limits of unfilled stockpile objectives, stockpile-grade materials in the Defense Production Act and the supplemental stockpile inventories shall be retained for national stockpile purposes.

n. *Disposals.* The Director of the Office of Emergency Preparedness will authorize the disposal of excess materials only after due regard to: (a) Avoidance of serious disruption of the usual markets of producers, processors and consumers, and (b) the protection of the United States against avoidable loss.

In general, excess materials constitute unneeded assets and shall be disposed of as expeditiously as possible.

In making such disposals preference shall be given to materials that deteriorate, that are likely to become obsolete, that do not meet quality standards, or that do not have stockpile objectives.

The Administrator of General Services shall be responsible for disposal of excess materials. He shall advise the Secretary of State and the Assistant to the President for Economic Affairs in advance on all disposal plans.

o. *Government use.* Under such policies and procedures as the Administrator of General Services may prescribe, Government agencies which directly or indirectly use strategic and critical materials shall fulfill their requirements through the use of materials in Government inventories that are excess to the needs thereof. Direct use means use in a Government-owned and operated facility and use in a Government-owned facility which is operated by a contractor for the Government. Indirect Government use means use by prime contractors and all tiers of subcontractors in the production of items being procured by the Government.

4. *Delegation of authority—Preparation of reports.* The Administrator of General Services shall prepare on behalf of the Director of the Office of Emergency Preparedness and forward to him for transmittal to the Congress the reports required by section 304 of the Defense Production Act of 1950, as amended, and section 4 of the Strategic and Critical Materials Stock Piling Act. [38 FR 9507, Apr. 17, 1973; 38 FR 10444, Apr. 27, 1973. Redesignated at 40 FR 27218, June 27, 1975]

THE DEFENSE PRODUCTION ACT OF 1950,[1] AS AMENDED [2]

AN ACT To establish a system of priorities and allocations for materials and facilities, authorize the requisitioning thereof, provide financial assistance for expansion of productive capacity and supply, provide for price and wage stabilization, provide for the settlement of labor disputes, strengthen controls over credit, and by these measures facilitate the production of goods and services necessary for the national security, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act, divided into titles, may be cited as "the Defense Production Act of 1950."

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DECLARATION OF POLICY

SEC. 2. (50 U.S.C. App. 2062) In view of the present international situation and in order to provide for the national defense and national security, our mobilization effort continues to require some diversion of certain materials and facilities from civilian use to military and related purposes. It also requires the development of preparedness programs and the expansion of productive capacity and supply beyond the levels needed to meet the civilian demand, in order to reduce the time required for full mobilization in the event of an attack on the United States or to respond to actions occurring outside of the United States which could result in the termination or reduction of the availability of strategic and critical materials, including energy, and which would adversely affect the national defense preparedness of the United States. In order to insure the national defense preparedness which is essential to national security, it is also necessary and appropriate to assure domestic energy supplies for national defense needs."

In order to insure productive capacity in the event of such an attack on the United States, it is the policy of the Congress to encourage the geographical dispersal of the industrial facilities of the United States in the interest of the national defense, and to discourage the concentration of such productive facilities within limited geographical areas which are vulnerable to attack by an enemy of the United States. In the construction of any Government-owned industrial facilities, in the rendition of any Government financial assistance for the construction,

[1] Public Law 774, 81st Cong., 64 Stat. 798, Sept. 8, 1950, 50 U.S.C. App. § § 2061–2166.
[2] Legislation during the 1951–1975 period that amended or extended the Defense Production Act of 1950 is listed below on 113, followed by a listing of sections of the United States Code affected by this legislation.
[3] Authority to condemn added July 31, 1951; title terminated at the close of June 30, 1953.
[4] Authority terminated at the close of April 30, 1953.
[5] Control of consumer credit terminated June 30, 1952. Control of real estate credit terminated at the close of June 30, 1953.

extended to Aug. 27, 1980, by SJR 175

extended to September 30, 1981 by the Defense Production Act Amendments of 1980.

expansion, or improvement of any industrial facilities, and in the procurement of goods and services, under this or any other Act, each department and agency of the Executive Branch shall apply, under the coordination of the Office of Defense Mobilization, when practicable and consistent with existing law and the desirability for maintaining a sound economy, the principle of the geographical dispersal of such facilities in the interest of national defense. Nothing contained in this paragraph shall preclude the use of existing industrial facilities.

TITLE I—PRIORITIES AND ALLOCATIONS

SEC. 101. (50 U.S.C. App. 2071) (a) The President is hereby authorized (1) to require that performance under contracts or orders (other than contracts of employment) which he deems necessary or appropriate to promote the national defense shall take priority over performance under any other contract or order, and, for the purpose of assuring such priority, to require acceptance and performance of such contracts or orders in preference to other contracts or orders by any person he finds to be capable of their performance, and (2) to allocate materials and facilities in such manner, upon such conditions, and to such extent as he shall deem necessary or appropriate to promote the national defense.

(b) The powers granted in this section shall not be used to control the general distribution of any material in the civilian market unless the President finds (1) that such material is a scarce and critical material essential to the national defense, and (2) that the requirements of the national defense for such material cannot otherwise be met without creating a significant dislocation of the normal distribution of such material in the civilian market to such a degree as to create appreciable hardship.

(c) (1) Notwithstanding any other provision of this Act, the President may, by rule or order, require the allocation of, or the priority performance under contracts or orders (other than contracts of employment) relating to, supplies of materials and equipment in order to maximize domestic energy supplies if he makes the findings required by paragraph (3) of this subsection.

(2) The President shall report to the Congress within sixty days after the date of enactment of this subsection on the manner in which the authority contained in paragraph (1) will be administered. This report shall include the manner in which allocations will be made, the procedure for requests and appeals, the criteria for determining priorities as between competing requests, and the office or agency which will administer such authorities.

(3) The authority granted in this subsection may not be used to require priority performance of contracts or orders, or to control the distribution of any supplies of materials and equipment in the marketplace, unless the President finds that—

(A) such supplies are scarce, critical, and essential to maintain or further (i) exploration, production, refining, transportation, or (ii) the conservation of energy supplies, or (iii) for the construction and maintenance of energy facilities; and

(B) maintenance or furtherance of exploration, production, refining, transportation, or conservation of energy supplies or the construction and maintenance of energy facilities cannot reasonably be accomplished without exercising the authority specified in paragraph (1) of this subsection.

(4) During any period when the authority conferred by this subsection is being exercised, the President shall take such action as may be appropriate to assure that such authority is being exercised in a manner which assures the coordinated administration of such authority with any priorities or allocations established under subsection (a) of this section and in effect during the same period.*

SEC. 102. (50 U.S.C. App. 2072) In order to prevent hoarding, no person shall accumulate (1) in excess of the reasonable demands of business, personal, or home consumption, or (2) for the purpose of resale at prices in excess of prevailing market prices, materials which have been designated by the President as scarce materials or materials the supply of which would be threatened by such accumulation. The President shall order published in the Federal Register, and in such other manner as he may deem appropriate, every designation of materials the accumulation of which is unlawful and any withdrawal of such designation. In making such designations the President may prescribe such conditions with respect to the accumulation of materials in excess of the reasonable demands of business, personal, or home consumption as he deems necessary to carry out the objectives of this Act. This section shall not be construed to limit the authority contained in sections 101 and 704 of this Act.

SEC. 103. (50 U.S.C. App. 2073) Any person who willfully performs any act prohibited, or willfully fails to perform any act required, by the provisions of this title or any rule, regulation, or order thereunder, shall, upon conviction, be fined not more than $10,000 or imprisoned for not more than one year, or both.

SEC. 104. [The authority contained in this section was added by the Defense Production Act Amendments of 1951, 65 Stat. 132, July 31, 1951. The authority was terminated at the close of June 30, 1953, by section 11 of the Defense Production Act Amendments of 1953, 67 Stat. 131, June 30, 1953.]

"SEC. 105. Nothing in this Act shall be construed to authorize the President to institute, without the approval of the Congress, a program for the rationing of gasoline among classes of end-users.

"SEC. 106. For purposes of this Act, 'energy' shall be designated as a 'strategic and critical material' after the date of the enactment of this section: *Provided*, That no provision of this Act shall, by virtue of such designation—

"(1) grant any new direct or indirect authority to the President for the mandatory allocation or pricing of any fuel or feedstock (including, but not limited to, crude oil, residual fuel oil, any refined petroleum product, natural gas, or coal) or electricity or any other form of energy; or

"(2) grant any new direct or indirect authority to the President to engage in the production of energy in any manner whatsoever (such as oil and gas exploration and development, or any energy facility construction), except as expressly provided in sections 305 and 306 for synthetic fuel production.".

TITLE II—AUTHORITY TO REQUISITION AND CONDEMN

[The authority to condemn was added by section 102 of the Defense Production Act Amendments of 1951, 65 Stat. 132–133, July 31, 1951. The title was terminated as the close of June 30, 1953, by section 11 of the Defense Production Act Amendments of 1953, 67 Stat. 131, June 30, 1953.]

* Subsection (c) of sec. 101 added by Public Law 94-163, Energy Policy and Conservation Act of Dec. 22, 1975, sec. 104(a), 89 Stat. 878. Sec. 104(b) of Public Law 94-163 provided further:

(1) The authority to issue any rules or orders under section 101(c) of the Defense Production Act of 1950, as amended by this Act, shall expire at midnight December 31, 1984, but such expiration shall not affect any action or pending proceedings, civil or criminal, not finally determined on such date, nor any action or proceeding based upon any act committed prior to such date.

(2) The expiration of the Defense Production Act of 1950 or any amendment of such Act after the date of enactment of this Act shall not affect the authority of the President under section 101(c) of such Act, as amended by subsection (a) of this section and in effect on the date of enactment of this Act, unless Congress by law expressly provides [illegible]

TITLE III—EXPANSION OF PRODUCTIVE CAPACITY AND SUPPLY

SEC. 301. (50 U.S.C. App. 2091) (a)(1) In order to expedite production and deliveries or services under Government contracts, the President may authorize, subject to such regulations as he may prescribe, the Department of Defense, the Department of Energy, the Department of Commerce, and such other agencies of the United States engaged in procurement for the national defense as he may designate (hereinafter referred to as "guaranteeing agencies"), without regard to provisions of law relating to the making, performance, amendment, or modification of contracts, to guarantee in whole or in part any public or private financing institution (including any Federal Reserve bank), by commitment to purchase, agreement to share losses, or otherwise, against loss of principal or interest on any loan, discount, or advance, or on any commitment in connection therewith, which may be made by such financing institution for the purpose of financing any contractor, subcontractor, or other person in connection with the performance of any contract or other operation deemed by the guaranteeing agency to be necessary to expedite production and deliveries or services under Government contracts for the procurement of materials or the performance of services for the national defense, or for the purpose of financing any contractor, subcontractor, or other person in connection with or in contemplation of the termination, in the interest of the United States, of any contract made for the national defense; but no small-business concern (as defined in section 714(a)(1) of this Act) shall be held ineligible for the issuance of such a guaranty by reason of alternative sources of supply.

"(2) Except as provided in section 305 and section 306, no authority contained in sections 301, 302, or 303 may be used in any manner—

"(A) in the development, production, or distribution of synthetic fuel;

"(B) for any synthetic fuel project;

"(C) to assist any person for the purpose of providing goods or services to a synthetic fuel project; or

"(D) to provide any assistance to any person for the purchase of synthetic fuel."

(b) Any Federal agency or any Federal Reserve bank, when designated by the President, is hereby authorized to act, on behalf of any guaranteeing agency, as fiscal agent of the United States in the making of such contracts of guarantee and in otherwise carrying out the purposes of this section. All such funds as may be necessary to enable any such fiscal agent to carry out any guarantee made by it on behalf of any guaranteeing agency shall be supplied and disbursed by or under authority from such guaranteeing agency. No such fiscal agent shall have any responsibility or accountability except as agent in taking any action pursuant to or under authority of the provisions of this section. Each such fiscal agent shall be reimbursed by each guaranteeing agency for all expenses and losses incurred by such fiscal agent in acting as agent on behalf of such guaranteeing agency, including among such expenses, notwithstanding any other provision of law, attorneys' fees and expenses of litigation.

(c) All actions and operations of such fiscal agents under authority of or pursuant to this section shall be subject to the supervision of the President, and to such regulations as he may prescribe; and the President is authorized to prescribe, either specifically or by maximum limits or otherwise, rates of interest, guarantee and commitment fees, and other charges which may be made in connection with loans, discounts, advances, or commitments guaranteed by the guaranteeing agencies through such fiscal agents, and to prescribe regulations governing the forms and procedures (which shall be uniform to the extent practicable) to be utilized in connection with such guarantees.

(d) Each guaranteeing agency is hereby authorized to use for the purposes of this section any funds which have heretofore been appropriated or allocated or which hereafter may be appropriated or allocated to it, or which are or may become available to it, for such purposes or for the purpose of meeting the necessities of the national defense.

(e)(1)(A) Except as provided in subparagraph(B), the maximum obligation of any guaranteeing agency under any loan, discount, advance, or commitment in connection therewith entered into under this section shall not exceed $38,000,000

"(B) Guarantees which exceed the amount specified in subparagraph (A) may be entered into under this section only if the Committees on Armed Services of the Senate and the House of Representatives have been notified in writing of such proposed obligation and 60 days of continuous session of Congress have expired following the date on which such notice was transmitted to such committees and neither House of Congress has adopted, within such 60-day period, a resolution disapproving such obligation. For purposes of this subparagraph, the continuity of a session of Congress is broken only by an adjournment of the Congress sine die, and the days on which either House is not in session because of an adjournment of more than 3 days to a day certain are excluded in the computation of such 60-day period.".

(2) The authority conferred by this section shall not be used primarily to prevent the financial insolvency or bankruptcy of any person, unless—

(A) the President certifies that the insolvency or bankruptcy would have a direct and substantially adverse effect upon defense production; and

(B) a copy of such certification, together with a detailed justification thereof, is transmitted to the Congress and to the Committees on Banking and Currency of the respective Houses at least ten days prior to the exercise of that authority for such use.

SEC. 302. (50 U.S.C. App. 2092) To expedite production and deliveries or services to aid in carrying out Government contracts for the procurement of materials or the performance of services for the national defense, the President may make provisions for loans (including participations in, or guarantees of, loans) to private business enterprises (including research corporations not organized for profit) for the expansion of capacity, the development of technological processes, or the production of essential materials, including the exploration, development, and mining of strategic and critical metals and minerals, and manufacture of newsprint. Such loans may be made without regard to the limitations of existing law and on such terms and conditions as the President deems necessary, except that (1) financial assistance may be extended only to the extent that it is not otherwise available on reasonable terms, and (2) no such loan may be made in an amount in excess of $ 42,000,000 unless the Committees on Armed Services of the Senate and the House of Representatives have been notified in writing of such proposed loan and 60 days of continuous session of Congress have expired following the date on which such notice was transmitted to such Committees and neither House of Congress has adopted, within such 60-day period, a resolution disapproving such loan. For purposes of this section, the continuity of a session of Congress is broken only by an adjournment of the Congress sine die, and the days on which either House is not in session because of an adjournment of more than 3 days to a day certain are excluded in the computation of such 60-day period.

SEC. 303. (50 U.S.C. App. 2093) (a) To assist in carrying out the objectives of this Act, the President may make provision (1) for purchases of or commitments to purchase metals, minerals, and other materials, for Government use or resale; and (2) for the encouragement of exploration, development, and mining of critical and strategic minerals, metals, and materials: *Provided, however*, That purchases for resale under this subsection shall not include that part of the supply of any agri-

cultural commodity which is domestically produced except insofar as such domestically produced supply may be purchased for resale for industrial uses or stockpiling, and no commodity purchased under this subsection shall be sold at less than the established ceiling price for such commodity (except that minerals, ores, and metals shall not be sold at less than the established ceiling price, or the current domestic market price, whichever is lower) or if no ceiling price has been established, the higher of the following: (i) The current domestic market price for such commodity, or (ii) the minimum sale price established for agricultural commodities owned or controlled by the Commodity Credit Corporation as provided in section 407 of Public Law 439, 81st Congress: *Provided further, however*, That no purchase or commitment to purchase any imported agricultural commodity shall be made calling for delivery more than one year after the expiration of this Act.

(b) Subject to the limitations in subsection (a), purchases and commitments to purchase and sales under such subsection may be made without regard to the limitations of existing law, for such quantities, and on such terms and conditions, including advance payments, and for such periods, but not extending beyond September 30, 1955 as the President deems necessary, except that purchases or commitments to purchase involving higher than established ceiling prices (or if there be no established ceiling prices, currently prevailing market prices) or anticipated loss on resale shall not be made unless it is determined that supply of materials could not be effectively increased at lower prices or on terms more favorable to the Government, or that such purchases are necessary to assure the availability to the United States of overseas supplies.

(c) If the President finds—

(1) that under generally fair and equitable ceiling prices for any raw or nonprocessed material, there will result a decrease in supplies from high-cost sources of such material, and that the continuation of such supplies is necessary to carry out the objectives of the Act; or

(2) that an increase in cost of transportation is temporary in character and threatens to impair maximum production or supply in any area at stable prices of any materials,

he may make provision for subsidy payments on any such domestically produced material other than an agricultural commodity in such amounts and in such manner (including purchases of such material and its resale at a loss without regard to the limitations of existing law), and on such terms and conditions, as he determines to be necessary to insure that supplies from such high-cost sources are continued, or that maximum production or supply in such area at stable prices of such materials is maintained, as the case may be.

(d) The procurement power granted to the President by this section shall include the power to transport and store and have processed and refined any materials procured under this section.

(e) When in his judgment it will aid the national defense, the President is authorized to install additional equipment, facilities, processes, or improvements to plants, factories, and other industrial facilities owned by the United States Government, and to install Government owned equipment in plants, factories, and other industrial facilities owned by private persons.

(f) Notwithstanding any other provision of law to the contrary, metals, minerals, and materials acquired pursuant to the provisions of this section which, in the judgment of the President, are excess to the needs of programs under this Act, shall be transferred to the national stockpile established pursuant to the Act of June 7, 1939, as amended (50 U.S.C. 98–98h), when the President deems such action to be in the public interest.

Transfers made pursuant to this subsection shall be made without charge against or reimbursement from funds available under such act of June 7, 1939, as amended, except that costs incident to such transfer other than acquisition costs shall be paid or reimbursed from such funds, and the acquisition costs of such metals, minerals, and materials transferred shall be deemed to be net losses incurred by the transferring agency and the notes payable issued to the Secretary of the Treasury representing the amounts thereof shall be canceled. Upon the cancellation of any such notes the aggregate amount of borrowing which may be outstanding at any one time under section 304(b) of this Act, as amended, shall be reduced in an amount equal to the amount of any notes so canceled.

(g) When in his judgment it will aid the national defense, the President may make provision for the development of substitutes for strategic and critical materials.

SEC. 304. (50 U.S.C. App. 2094) (a) For the purposes of sections 302 and 303, the President is hereby authorized to utilize such existing departments, agencies, officials, or corporations of the Government as he may deem appropriate, or to create new agencies (other than corporations).

(b) The Secretary of the Treasury is authorized and directed to cancel the outstanding balance of all unpaid notes issued to the Secretary of the Treasury pursuant to this section, together with interest accrued and unpaid on such notes.[7]

[7] Public Law 93–426, Sept. 30, 1974, sec. 2(a), 88 Stat. 1160–1167, repealed the borrowing authority previously authorized by sec. 304 and added Subsections (b) and (c).

(c) Any cash balance remaining on June 30, 1974, in the borrowing authority previously authorized by this section, and any funds thereafter received on transactions heretofore or hereafter entered into pursuant to sections 302 and 303 shall be covered into the Treasury as miscellaneous receipts.[7] See Sec. 711

"SEC. 305. (a)(1)(A) Subject to subsection (k)(1), in order to encourage and expedite the development of synthetic fuel for use for national defense purposes, the President, utilizing the provisions of this Act (other than sections 101(a), 101(b), 301, 302, 303, and 306), and any other applicable provision of law, shall take immediate action to achieve production of synthetic fuel to meet national defense needs.

"(B) The President shall exercise the authority granted by this section—

"(i) in consultation with the Secretary of Energy;

"(ii) through the Department of Defense and any other Federal department or agency designated by the President; and

"(iii) consistent with an orderly transition to the separate authorities established pur-

suant to the United States Synthetic Fuels Corporation Act of 1980.

"(2) This section shall not affect the authority of the United States Synthetic Fuels Corporation.

"(b)(1)(A) To assist in carrying out the objectives of this section, the President, subject to subsections (c) and (d), shall—

"(i) contract for purchases of, or commitments to purchase, synthetic fuel for Government use for defense needs;

"(ii) subject to paragraph (3), issue guarantees in accordance with the provisions of section 301, except that the provisions of section 301(e)(1)(B) shall not apply with respect to such guarantees; and

"(iii) subject to paragraph (3), make loans in accordance with the provisions of section 302, except that the provisions of section 302(2) shall not apply with respect to such loans.

"(2)(A) Except as provided in subparagraph (B) assistance authorized under this subsection may be provided only to persons who are participating in a synthetic fuel project.

"(B) For purposes of fabrication or manufacture of any component of a synthetic fuel project, assistance authorized under paragraph (1)(A)(ii) and paragraph (1)(A)(iii) may be provided to any fabricator or manufacturer of such component.

"(3) The President may not utilize the authority under paragraph (1) to provide any loan or guarantee in accordance with the provisions of section 301 or section 302 in amounts which exceed the limitations established in such sections unless the President submits to the Congress notification of the proposed loan for guarantee in the manner specified under section 307 and such proposed action is either approved or not disapproved by the Congress under such section. For purposes of section 307, any proposal pertaining to a proposed loan or guarantee, notice of which is transmitted to the Congress under this paragraph, shall be considered to be a synthetic fuel action.

"(c)(1) Subject to paragraph (2), purchases and commitments to purchase under subsection (b) may be made—

"(A) without regard to the limitations of existing law (other than the limitations contained in this Act) regarding the procurement of goods or services by the Government; and

"(B) subject to section 717(a), for such quantities, on such terms and conditions (including advance payments subject to paragraph (3)), and for such periods as the President deems necessary.

"(2) Purchases or commitments to purchase under subsection (b) involving higher than established selling prices (or if there are no established selling prices, currently prevailing market prices as determined by the Secretary of Energy) shall not be made unless it is determined that supplies of synthetic fuel could not be effectively increased at lower prices or on terms more favorable to the Government, or that such commitmentes or purchases are necessary to assure the availability to the United States of supplies overseas for use for national defense purposes.

"(3) Advance payments may not be made under this section unless construction has begun on the synthetic fuel project involved or the President determines that all conditions precedent to construction have been met.

"(d)(1) Except as provided in paragraph (2), any purchase of or commitment to purchase synthetic fuel under subsection (b) shall be made by solicitation of sealed competitive bids.

"(2) In any case in which no such bids are submitted to the President or the President determines that no such bids which have been submitted to the President are acceptable, the President may negotiate contracts for such purchases and commitments to purchase.

"(3) Any contract for such purchases or commitments to purchase shall provide that the President has the right to refuse delivery of the synthetic fuel involved and to pay the person involved an amount equal to the amount by which the price for such synthetic fuel, as specified in the contract involved, exceeds the market price, as determined by the Secretary of Energy, for such synthetic fuel on the delivery date specified in such contract.

"(4)(A)(i) With respect to any person, including any other person who is substantially controlled by such person (as determined by the Secretary of Energy), the President, subject to subparagraph (A)(ii), may not award contracts for the purchase of or commitment to purchase more than 100,000 barrels per day crude oil equivalent of synthetic fuel.

"(ii) With respect to any person, including any other person who is substantially controlled by such person (as determined by the Secretary of Energy), the President may not award any contract for the purchase or commitment to purchase of more than 75,000 barrels per day crude oil equivalent of synthetic fuel unless the President submits to the Congress notification of such proposed contract or commitment in the manner specified under section 307 and such proposed action is either approved or not disapproved by the Congress under such section. For purposes of section 307, any proposal pertaining to such a proposed contract or commitment, notice of which is transmitted to the Congress under this subparagraph, shall be considered to be a synthetic fuel action.

"(B) A contract for the purchase of or commitment to purchase synthetic fuel may be entered into only for synthetic fuel which is produced in a synthetic fuel project which is located in the United States.

"(C) Each contract entered into under this section for the purchase of or commitment to purchase synthetic fuel shall provide that all parties to such contract agree to review and to possibly renegotiate such contract within 10 years after the date of the initial production at the synthetic fuel project involved. At the time of such review, the President shall determine the need for continued financial assistance pursuant to such contract.

"(5) In any case in which the President, under the provisions of this section, accepts delivery of any synthetic fuel, such synthetic fuel may be used by an appropriate Federal agency. Such Federal agency shall pay for such synthetic fuel the prevailing market price for the product which such synthetic fuel is replacing, as determined by the Secretary of Energy, from sums appropriated to such Federal agency for the purchase of fuel, and the President shall pay, from sums appropriated for such purpose pursuant to the authorizations contained in sections 711(a)(2) and 711(a)(3), an amount equal to the amount by which the contract price for such synthetic fuel as specified in the contract involved exceeds such prevailing market price.

"(6) In considering any proposed contract under this section, the President shall take into account the socioeconomic impacts on communities which would be affected by any new or expanded facilities required for the production of the synthetic fuel under such contract.

"(e) The procurement power granted to the President under this section shall include the power to transport and store and have processed and refined any product procured under this section.

"(f)(1) No authority contained in this section may be exercised to acquire any amount of synthetic fuel unless the President determines that such synthetic fuel is needed to meet national defense needs and

fuel will be resold by the Government.

"(2) In any case in which synthetic fuel is acquired by the Government under this section, such synthetic fuel is no longer needed to meet national defense needs, and such synthetic fuel is not accepted by a Federal agency pursuant to subsection (d)(5), the President shall offer such synthetic fuel to the Secretary of Energy for purposes of meeting the storage requirements of the Strategic Petroleum Reserve.

"(3) Any synthetic fuel which is acquired by the Government under this section and which is not used by the Government or accepted by the Secretary of Energy pursuant to paragraph (2) shall be sold in accordance with applicable Federal law.

"(g)(1) Any contract under this section including any amendment or other modification of such contract, shall, subject to the availability of unencumbered appropriations in advance, specify in dollars the maximum liability of the Federal Government under such contract as determined in accordance with paragraph (2).

"(2) For the purpose of determining the maximum liability under any contract under paragraph (1)—

"(A) loans shall be valued at the initial face value of the loan;

"(B) guarantees shall be valued at the initial face value of such guarantee (including any amount of interest which is guaranteed under such guarantee);

"(C) purchase agreements shall be valued as of the date of each such contract based upon the President's estimate of the maximum liability under such contract; and

"(D) any increase in the liability of the Government pursuant to any amendment or other modification to a contract for a loan, guarantee, or purchase agreeemnt shall be valued in accordance with the applicable preceding subparagraph.

"(3) If more than one form of assistance is provided under this section to any synthetic fuel project, then the maximum liability under such contract for purposes of paragraphs (1) and (2) shall be valued at the maximum potential exposure on such project at any time during the life of such project.

"(4) Any such contract shall be accompanied by a certification by the Director of the Office of Management and Budget that the necessary appropriations have been made for the purpose of such contract and are available. The remaining available and unencumbered appropriations shall equal the total aggregate appropriations less the aggregate maximum liability of the Federal Government under all contracts pursuant to this section.

"(5) Any commitment made under this section which is nullified or voided for any reason shall not be considered in the aggregate maximum liability for the purposes of paragraph (4).

"(h) For purposes of section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)), no action in providing any loan, guarantee, or purchase agreement under this section shall be deemed to be a major Federal action significantly affecting the quality of the human environment.

"(i) All laborers and mechanics employed for the construction, repair, or alteration of any synthetic fuel project funded, in whole or in part, by a gaurantee or loan entered into pursuant to this section shall be paid wages at rates not less than those prevailing on projects of a similar character in the locality as determined by the Secretary of Labor in accordance with the Act entitled "An Act Relating to the rate of wages for laborers and mechanics employed on public buildings of the United States and the District of Columbia by contractors and subcontractors, 1931 (40 U.S.C. 276a et seq.) and commonly known as the Davis-Bacon Act. Guaranteeing agencies shall not extend guarantees and the President shall not make loans for the construction, repair or alteration of any synthetic fuel project unless a certification is provided to the agency or the President, as the case may be, prior to the commencement of construction or at the time of filing an application for a loan or guarantee, if construction has already commenced, that these labor standards will be maintained at the synthetic fuel project. With respect to the labor standards specified in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 and section 276(c) of title 40.

"(j)(1) Nothing in this section shall—

"(A) affect the jurisdiction of the States and the United States over waters of any stream or over any ground water resource;

"(B) alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any States; or

"(C) confer upon any non-Federal entity the ability to exercise any Federal right to the waters of any stream or to any ground water resource.

"(2) No synthetic fuel project constructed pursuant to the authorities of this section shall be considered to be a Federal project for purposes of the application for or assignment of water rights.

"(k)(1) Subject to paragraph (2), the authority of the President to enter into any new contract or commitment under this section shall cease to be effective on the date on which the President determines that the United States Synthetic Fuels Corporation is established and fully operational consistent with the provisions of the United States Synthetic Fuels Corporation Act of 1980.

"(2) Contracts entered into under this section before the date specified in paragraph (1) may be renewed and extended by the President after the date specified in paragraph (1) but only to the extent that Congress has specifically appropriated funds for such renewals and extensions.

"Sec. 306. (a)(1) At any time after the date of the enactment of this section, the President may, subject to paragraph (2), invoke the authorities provided under this section upon making all the following determinations and transmitting a report to the Congress regarding such determinations:

"(A) a national energy supply shortage has resulted or is likely to result in a shortfall of petroleum supplies in the United States, and such shortage is expected to persist for a period of time sufficient to seriously threaten the adequacy of defense fuel supplies essential to direct defense and direct defense industrial base programs;

"(B) the continued adequacy of such supplies cannot be assured and requires expedited production of synthetic fuel to provide such defense fuel supplies;

"(C) the expedited production of synthetic fuel to provide such defense fuel supplies will not be accomplished in a timely manner by the United States Synthetic Fuels Corporation; and

"(D) the exercise of the authorities provided under subsection (c) is necessary to provide for the expedited production of synthetic fuel to provide such defense fuel supplies.

"(2)(A) Any transmittal under paragraph (1) shall contain a determination by the President regarding the extent of the anticipated shortage of petroleum supplies. If the President determines that such shortage is greater than 25 percent, the authorities invoked by the President under this section shall be effective on the date on which the report required under paragraph (1) is transmitted to the Congress.

"(B) If the President determines that such shortage is less than 25 percent, the transmittal under paragraph (1) shall be made in accordance with section 307 and the authorities under this section shall be effective only as provided under such section. For purposes of section 307, any determination to invoke authorities under this section, notice of which is transmitted to the Congress under this subsection, shall be considered to be a synthetic fuel action.

"(3) No court shall have the authority to review any determination made by the President under this subsection.

"(b)(1)(A) Subject to the requirements of subsection (a), in order to encourage and expedite the development of synthetic fuel for use for national defense purposes, the President, utilizing the provisions of this Act (other than sections 101(a), 101 (b), 801, 802, 803, and 805), and any other applicable provision of law, shall take immediate action to achieve production of synthetic fuel to meet national defense needs.

"(B) The President shall exercise the authority granted by this section—

"(i) in consultation with the Secretary of Energy; and

"(ii) through the Department of Defense and any other Federal department or agency designated by the President.

"(2) This section shall not affect the authority of the United States Synthetic Fuels Corporation.

"(C)(1)(A) To assist in carrying out the objectives of this section, the President, subject to subsections (d) and (e), shall—

"(i) contract for purchases of or commitments to purchase synthetic fuel for Government use for defense needs;

"(ii) subject to paragraph (4), issue guarantees in accordance with the provisions of section 801, except that the provisions of section 801(e)(1)(B) shall not apply with respect to such guarantees;

"(iii) subject to paragraph (4), make loans in accordance with the provisions of section 802, except that the provisions of section 802(2) shall not apply with respect to such loans;

"(iv) have the authority to require fuel suppliers to provide synthetic fuel in any case in which the President deems it practicable and necessary to meet the national defense needs of the United States. Nothing in this paragraph shall be intended to provide authority for the President to require fuel suppliers to produce synthetic fuel if such suppliers are not already producing synthetic fuel or do not intend to produce synthetic fuel;

"(v) have the authority to install additional equipment, facilities, processes, or improvements to plants, factories, and other industrial facilities owned by the Government, and to install Government-owned equipment in plants, factories, and other industrial facilities owned by private persons; and

"(vi) have the authority to undertake Government synthetic fuel projects in accordance with the provisions of paragraph (2).

"(B)(i) Except as provided in clause (ii), assistance authorized under this subsection may be provided only to persons who are participating in a synthetic fuel project.

"(ii) For purposes of fabrication or manufacture of any component of a synthetic fuel project, assistance authorized under paragraph (1)(A)(ii) and paragraph (1)(A)(iii) may be provided to any fabricator or manufacturer of such component.

"(2)(A) The Government, acting through the President, is authorized to own Government synthetic fuel projects. In any case in which the Government owns a Government synthetic fuel project, the Government shall contract for the construction and operation of such project.

"(B) The authority of the Government pursuant to subparagraph (A) to own and contract for the construction and operation of any Government synthetic fuel project shall include, among other things, the authority to—

"(i) subject to subparagraph (C), take delivery of synthetic fuel from such project; and

"(ii) transport and store and have processed and refined such synthetic fuel.

"(C) Any synthetic fuel which the Government takes delivery of from a Government synthetic fuel project shall be disposed of in accordance with subsection (g).

"(D) To the maximum extent feasible, the President shall utilize the private sector for the activities associated with this paragraph.

"(3)(A) Except as provided in subparagraph (B), any contract for the construction or operation of a Government synthetic fuel project shall be made by solicitation of sealed competitive bids.

"(B) In any case in which no such bids are submits to the Congress notification of the determines that no such bids have been submitted which are acceptable to the President, the President may negotiate contracts for such construction and operation.

"(4) The President may not utilize the authority under paragraph (1) to provide any loan or guarantee in accordance with the provisions of section 801 or section 802 in amounts which exceed the limitations established in such sections unless the President submits to the Congress notification of the proposed loan or guarantee in the manner specified under section 307 and such proposed action is either approved or not disapproved by the Congress under such section. For purposes of section 307, any proposal pertaining to a proposed loan or guarantee, notice of which is transmitted to the Congress under this paragraph, shall be considered to be a synthetic fuel action.

"(5) Before the President may utilize any specific authority described under paragraph (1), the President shall transmit to the Congress a statement containing a certification that the determinations made by the President in the transmittal to the Congress under subsection (a)(1) are still valid at the time of the transmittal of such certification.

"(6)(A) No authority contained in paragraphs (1)(A)(i) through (1)(A)(iv) may be utilized by the President unless the use of such authority has been authorized by the Congress in an Act hereinafter enacted by the Congress.

"(B) The President may not utilize any authority under paragraph (1)(A)(v) or paragraph (1)(A)(vi) unless the proposed exercise of authority has been specifically authorized on a project-by-project basis in an Act hereinafter enacted by the Congress and funds have been specifically appropriated by the Congress for purposes of exercising such authority.

"(d)(1) Subject to paragraph (2), purchases and commitments to purchase under subsection (c) may be made—

"(A) without regard to the limitations of existing law (other than those limitations contained in this Act) regarding the procurement of goods or services by the Government; and

"(B) subject to section 717(a), for such quantities, on such terms and conditions (including advance payments subject to paragraph (3)), and for such periods as the President deems necessary.

"(2) Purchases or commitments to purchase under subsection (c) involving higher than established ceiling prices (or if there are no established ceiling prices, currently prevailing market prices as determined by the Secretary of Energy) shall not be made unless it is determined that supplies of synthetic fuel could not be effectively increased

to the Government, or that such commitments or purchases are necessary to assure the availability to the United States of supplies overseas for use for national defense purposes.

"(3) Advance payments may not be made under this section unless construction has begun on the synthetic fuel project involved or the President determines that all conditions precedent to construction have been met.

"(e)(1) Except as provided in paragraph (2), any purchase or commitment to purchase synthetic fuel under subsection (c) shall be made by solicitation of sealed competitive bids.

"(2) In any case in which no such bids are submitted to the President or the President determines that no such bids which have been submitted to the President are acceptable, the President may negotiate contracts for such purchases and commitments to purchase.

"(3) Any contract for such purchases or commitments to purchase shall provide that the President has the right to refuse delivery of the synthetic fuel involved and to pay the person involved an amount equal to the amount by which the price for such synthetic fuel, as specified in the contract involved, exceeds the market price, as determined by the Secretary of Energy, for such synthetic fuel on the delivery date specified in such contract.

"(4)(A) With respect to any person, including any other person who is substantially controlled by such person (as determined by the Secretary of Energy), the President, subject to suparagraph (B), may not award contracts for the purchase of or commitment to purchase more than 100,000 barrels per day crude oil equivalent of synthetic fuel.

"(B) With respect to any person, including any other person who is substantially controlled by such person (as determined by the Secretary of Energy), the President may not award any contract for the purchase of or commitment to purchase more than 75,000 barrels per day crude oil equivalent of synthetic fuel unless the President submits to the Congress notification of such proposed contract or commitment in the manner specified under section 307 and such proposed action is either approved or not disapproved by the Congress under such section. For purposes of section 307, any proposal pertaining to such a propoeed contract or commitment, notice of which is transmitted to the Congress under this subparagraph, shall be considered to be a synthetic fuel action.

"(5) A contract for the purchase of or commitment to purchase synthetic fuel may be entered into only for synthetic fuel which is produced in a synthetic fuel project which is located in the United States.

"(6) Each contract entered into under this section for the purchase of or commitment to purchase synthetic fuel shall provide that all parties to such contract agree to review and to possibly renegotiate such contract within 10 years after the date of the initial production at the synthetic fuel project involved. At the time of such review, the President shall determine the need for continued financial assistance pursuant to such contract.

"(7) In any case in which the President, under the provisions of this section, accepts delivery of any synthetic fuel, such synthetic fuel may be used by an appropriate Federal agency. Such Federal agency shall pay for such synthetic fuel the prevailing market price for the product which such synthetic fuel is replacing, as determined by the Secretary of Energy, from sums appropriated to such Federal agency for the purchase of fuel, and the President shall pay, from sums appropriated for such purpose, an amount equal to the amount by which the contract price for such synthetic fuel as specified in the contract involved exceeds such prevailing market price.

"(8) In considering any proposed contract under this section, the President shall take into account the socioeconomic impacts on communities which would be affected by any new or expanded facilities required for the production of the synthetic fuel under such contract.

"(f) The procurement power granted to the President under this section shall include the power to transport and store and have processed and refined any product procured under this section.

"(g)(1) No authority contained in this section may be exercised to acquire any amount of synthetic fuel unless the President determines that such synthetic fuel is needed to meet national defense needs and that it is not anticipated that such synthetic fuel will be resold by the Government.

"(2) In any case in which synthetic fuel is acquired by the Government under this section, such synthetic fuel is no longer needed to meet national defense needs, and such synthetic fuel is not accepted by a Federal agency pursuant to subsection (e)(7), the President shall offer such synthetic fuel to the Secretary of Energy for purposes of meeting the storage requirements of the Strategic Petroleum Reserve.

"(3) Any synthetic fuel which is acquired by the Government under this section and which is not used by the Government or accepted by the Secretary of Energy pursuant to paragraph (2), shall be sold in accordance with applicable Federal law.

"(h)(1) Any contract under this section, including any amendment or other modification of such contract, shall, subject to the availability of unencumbered appropriations in advance, specify in dollars the maximum liability of the Federal Government under such contract as determined in accordance with paragraph (2).

"(2) For the purpose of determining the maximum liability under any contract under paragraph (1)—

"(A) loans shall be valued at the initial face value of the loan;

"(B) guarantees shall be valued at the initial face value of such guarantee (including any amount of interest which is guaranteed under such guarantee);

"(C) purchase agreements shall be valued as of the date of each such contract based upon the President's estimate of the maximum liability under such contract;

"(D) contracts for activities under subsection (c)(1)(A)(v) shall be valued at the initial face value of such contract;

"(E) Government synthetic fuel projects pursuant to subsection (c)(1)(A)(vi) shall be valued at the current estimated cost to the Government, as determined annually by the President; and

"(F) any increase in the liability of the Government pursuant to any amendment or other modification to a contract for a loan, guarantee, purchase agreement, contract for activities under subsection (c)(1)(A)(v), or Government synthetic fuel project pursuant to subsection (c)(1)(A)(vi) shall be valued in accordance with the applicable preceding subparagraph.

"(3) If more than one form of assistance is provided under this section to any synthetic fuel project then the maximum liability under such contract for purposes of paragraphs (1) and (2) shall be valued at the maximum potential exposure on such project at any time during the life of such project.

"(4) Any such contract shall be accompanied by a certification by the Director of the Office of Management and Budget that

for the purpose of such contract and are available. The remaining available and unencumbered appropriations shall equal the total aggregate appropriations less the aggregate maximum liability of the Federal Government under all contracts pursuant to this section.

"(5) Any commitment made under this section which is nullified or voided for any reason shall not be considered in the aggregate maximum liability for the purposes of paragraph (4).

"(i) For purposes of section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)), no action in providing any loan, guarantee, or purchase agreement under this section, shall be deemed to be a major Federal action significantly affecting the quality of the human environment.

"(j) All laborers and mechanics employed for the construction, repair, or alteration of any synthetic fuel project funded, in whole or in part, by a guarantee or loan entered into pursuant to this section shall be paid wages at rates not less than those prevailing on projects of a similar character in the locality as determined by the Secretary of LABOR in accordance with the Act entitled "An Act relating to the rate of wages for laborers and mechanics employed on public buildings of the United States and the District of Columbia by contractors and subcontractors and for other purposes", approved March 3, 1931 (40 U.S.C. 276a et seq.) and commonly known as the Davis-Bacon Act. Guaranteeing agencies shall not extend guarantees and the President shall not make loans for the construction, repair or alteration of any synthetic fuel project unless a certification is provided to the agency or the President, as the case may be, prior to the commencement of construction or at the time of filing an application for a loan or guarantee, if construction has already commenced, that these labor standards will be maintained at the synthetic fuel project. With respect to the labor standards specified in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 and section 276(c) of title 40.

"(k)(1) Nothing in this section shall—

"(A) affect the jurisdiction of the States and the United States over waters of any stream or over any ground water resource;

"(B) alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any State; or

"(c) confer upon any non-Federal entity the ability to exercise any Federal right to the waters of any stream or to any ground water resource.

"(2) No synthetic fuel project constructed pursuant to the authorities of this section shall be considered to be a Federal project for purposes of the application for or assignment of water rights.

"(l) renewals and extensions of contracts entered into under this section shall be made only to the extent that Congress has specifically appropriated funds for such renewals and extensions, unless the President certifies that the determinations under section 306(a)(1) remain in effect for purposes of the use of such authority.

REPORTS

SEC. 106. Beginning one year after the effective date of this part, and annually thereafter, the President shall submit a report to the Congress on actions taken under sections 305 and 306 of the Defense Production Act of 1950.

SEC. 501. (a) For purposes of this section, the term "synthetic fuel action" means any matter required to be transmitted, or submitted to the Congress in accordance with the procedures of this section.

"(b) The President shall transmit any synthetic fuel action (bearing an identification number) to both Houses of the Congress on the same day. If both Houses are not in session on the day on which any synthetic fuel action is received by the appropriate officers of each House, such synthetic fuel action shall be deemed to have been received on the first succeeding day on which both Houses are in session.

"(c)(1) Except as provided in paragraph (2) and in subsection (e), if a synthetic fuel action is transmitted to both Houses of Congress, such synthetic fuel action shall take effect at the end of the first period of 30 calendar days of continuous session of the Congress after the date on which such synthetic fuel action is received by such Houses, unless between the date on which such synthetic fuel action is received and the end of such 30 calendar day period, either House passes a resolution stating in substance that such House does not favor such action.

"(2) A synthetic fuel action described in paragraph (1) may take effect prior to the expiration of the 30-calendar-day period after the date on which such action is received, if each House of Congress approves a resolution affirmatively stating in substance that such House does not object to such synthetic fuel action. Except as provided in subsection (e), in any such case, such synthetic fuel action shall take effect on the date on which such resolution is approved.

"(d) For purposes of subsection (c)—

"(1) continuity of session is broken only by an adjournment of the Congress sine die; and

"(2) the days on which either House is not in session because of an adjournment of more than 3 days to a day certain are excluded in the computation of the 30-calendar-day period.

"(e) Under provisions contained in a synthetic fuel action, any provision of such synthetic fuel action may take effect on a date later than the date on which such synthetic fuel action otherwise would take effect, if such action is not disapproved, pursuant to the provisions of this section.

"(f) This section is enacted by the Congress—

"(1) as an exercise of the rulemaking power of the Senate and the House of Representatives, respectively, and as such it is deemed a part of the rules of each House, respectively, but applicable only with respect to the procedure to be followed in that House in the case of resolutions described by subsection (g) of this section, and it supersedes other rules only to the extent that it is inconsistent with such rules; and

"(2) with full recognition of the constitutional right of either House to change the rules (so far as they relate to the procedure of that House) at any time, in the same manner and to the same extent as in the case of any other rule of the House.

"(g)(1) For purposes of subsection (b), the term 'resolution' means a resolution of either House of the Congress described in paragraph (2) or paragraph (3).

"(2) A resolution the matter after the resolving clause of which is as follows: "That the does not object to the synthetic fuel action numbered received by the Congress on 19 ", the first blank space therein being filled with the name of the resolving House and the other blank spaces being appropriately filled. Any such resolution may only contain a reference to one synthetic fuel action.

resolving clause of which is as follows: 'That the does not favor the synthetic fuel action numbered received by the Congress on , 19 ', the first blank space therein being filled with the name of the resolving House and the other blank spaces therein being appropriately filled. Any such resolution may only contain a reference to one synthetic fuel action.

"(4) A resolution once introduced with respect to a synthetic fuel action shall immediately be referred to a committee (and all resolutions with respect to the same synthetic fuel action shall be referred to the same committee) by the President of the Senate or the Speaker of the House of Representatives, as the case may be.

"(5)(A) If the committee to which a resolution with respect to a synthetic fuel action has been referred has not reported it at the end of 20 calendar days after it was received by the House involved, it shall be in order to move either to discharge the committee from further consideration of such resolution or to discharge the committee from further consideration of any other resolution with respect to such synthetic fuel action which has been referred to the committee.

"(B) A motion to discharge may be made only by an individual favoring the resolution, shall be highly privileged (except that it may not be made after the committee has reported a resolution with respect to the same synthetic fuel action), and debate thereon shall be limited to not more than one hour, to be divided equally between those favoring and those opposing the resolution. An amendment to the motion shall not be in order, and it shall not be in order to move to reconsider the vote by which the motion was agreed to or disagreed to.

"(C) If the motion to discharge is agreed to or disagreed to, the motion may not be renewed, nor may another motion to discharge the committee be made with respect to any other resolution with respect to the same synthetic fuel action.

"(6)(A) When the committee has reported (or has been discharged from further consideration of) a resolution, it shall be at any time thereafter in order (even though a previous motion to the same effect has been discharged or) to move to proceed to the consideration of the resolution. The motion shall be highly privileged and shall not be debatable. An amendment to the motion shall not be in order, and it shall not be in order to move to reconsider the vote by which the motion was agreed to or disagreed to.

"(B) Debate on the resolution referred to in subparagraph (A) of this paragraph shall be limited to not more than 5 hours, which shall be divided equally between those favoring and those opposing such resolution. A motion further to limit debate shall not be debatable. An amendment to, or motion to recommit, the resolution shall not be in order, and it shall not be in order to move to reconsider the vote by which such resolution was agreed to or disagreed to, except that it shall be in order—

"(i) to offer an amendment in the nature of a substitute, consisting of the text of the resolution described in paragraph (2) with respect to a synthetic fuel action, for a resolution described in paragraph (3) with respect to the same synthetic fuel action; or

"(ii) to offer an amendment in the nature of a substitute, consisting of the text of a resolution described in paragraph (3) with respect to a synthetic fuel action, for a resolution described in paragraph (2) with respect to the same such synthetic fuel action.

"(C) The amendments described in clauses (i) and (ii) of subparagraph (B) shall not be amendable and shall be debatable under the 5-minute rule in the House of Representatives by the offering of pro forma amendments.

spect to the discharge from committee or the consideration of a resolution and motions to proceed to the consideration of other business, shall be decided without debate.

"(B) Appeals from the decision of the Chair relating to the application of the rules of the Senate or the House of Representatives, as the case may be, to the procedure relating to a resolution shall be decided without debate.

"(8) Notwithstanding any of the provisions of this subsection, if a House has approved a resolution with respect to a synthetic fuel action, then a motion to recommit shall not be in order nor shall it be in order to consider in that House any other resolution with respect to the same synthetic fuel action.

"SEC. 308. (a) For purposes of this Act, the term 'Government synthetic fuel project' means a synthetic fuel project undertaken in accordance with the provisions of section 306(c).

"(b)(1)(A) For purposes of this Act, the term 'synthetic fuel' means any solid, liquid, or gas, or combination thereof, which can be used as a substitute for petroleum or natural gas (or any derivatives thereof, including chemical feedstocks) and which is produced by chemical or physical transformation (other than washing, coking, or desulfurizing) of domestic sources of—

"(i) coal, including lignite and peat;

"(ii) shale;

"(iii) tar sands, including those heavy oil resources where—

"(I) the cost and the technical and economic risks make extraction and processing of a heavy oil resource uneconomical under applicable pricing and tax policies; and

"(II) the costs and risks are comparable to those associated with shale, coal, and tar sand resources (other than heavy oil) qualifying for assistance under section 305 or section 306; and

"(iv) water, as a source of hydrogen only through electrolysis.

"(B) Such term includes mixtures of coal and combustible liquids, including petroleum.

"(C) Such term does not include solids, liquids, or gases, or combinations thereof, derived from biomass, which includes timber, animal and timber waste, municipal and industrial waste, sewage, sludge, oceanic and terrestrial plants, and other organic matter.

"(2)(A) For purposes of this Act, the term 'synthetic fuel project' means any facility using an integrated process or processes at a specific geographic location in the United States for the purpose of commercial production of synthetic fuel. The project may include only—

"(i) the facility, including the equipment, plant, machinery, supplies, and other materials associated with the facility, which converts the domestic resource to synthetic fuel;

"(ii) the land and mineral rights required directly for use in connection with the facilities for the production of synthetic fuels;

"(iii) any facility or equipment to be used in the extraction of a mineral for use directly and exclusively in such conversion;

"(I) which—

"(aa) is co-located with the conversion facility or is located in the immediate vicinity of the conversion facility; or

"(bb) if not co-located or located in the immediate vicinity, is incidental to the project (except in the event of a coal mine where no other reasonable source of coal is available to the project); and

"(II) which is necessary to the project; and

"(iv) any transportation facility, electric powerplant, electric transmission line or other facility—

"(I) which is for the exclusive use of the project;

"(II) which is incidental to the project; and

except that transportation facilities used to transport synthetic fuel away from the project shall be used exclusively to transport synthetic fuel to a storage facility or pipeline connecting to an existing pipeline or processing facility or area within close proximity of the project.

"(B)(i) Such term may also include a project which will result in the replacement of a significant amount of oil and is—

"(I) used solely for the production of a mixture of coal and combustible liquids, including petroleum, for direct use as a fuel, but shall not include—

"(aa) any mineral right; or

"(bb) any facility or equipment for extraction of any mineral;

"(II) used solely for the commercial production of hydrogen from water through electrolysis; and

"(III) a magnetohydrodynamic topping cycle used solely for the commercial production of electricity.

magnetohydrodynamic technology shall only be eligibe for guarantees under section 805 or section 806.

"(C) For purposes of this paragraph—

"(i) the term 'exclusive' means for the sole use of the project, except that an incidental by-product might be used for other purposes;

"(ii) the term 'incidental' means a relatively small portion of the total project cost; and

"(iii) the term 'necessary' means an integrated part of the project taking into account considerations of economy and efficiency of operation.

"(C) For purposes of section 805 and section 806, the term 'United States' means the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and any other territory or possession of the United States.".

SEC. 702. (50 U.S.C. App. 2152) As used in this Act—

(a) The word "person" includes an individual, corporation, partnership, association, or any other organized group of persons, or legal successor or representative of the foregoing, and includes the United States or any agency thereof, or any other government, or any of its political subdivisions, or any agency of any of the foregoing: *Provided*, That no punishment provided by this Act shall apply to the United States, or to any such government, political subdivision, or government agency.

(b) The word "materials" shall include raw materials, articles, commodities, products, supplies, components, technical information, and processes.

(c) The word "facilities" shall not include farms, churches or other places of worship, or private dwelling houses.

(d) The term "national defense" means programs for military and atomic energy production or construction, military assistance to any foreign nation, stockpiling, space, and directly related activity.

(e) The words "wages, salaries, and other compensation" shall include all forms of remuneration to employees by their employers for personal services, including, but not limited to, vacation and holiday payments, night shift and other bonuses, incentive payments, year-end bonuses, employer contributions to or payments of insurance or welfare benefits, employer contributions to a pension fund or annuity, payments in kind, and premium overtime payments.

(f) The term "defense contractor" means any person who enters into a contract with the United States for the production of material or the performance of services for the national defense.

SEC. 711. (50 U.S.C. App. 2161) (a) (1) Except as provided in paragraph (2), there are hereby authorized to be appropriated such sums as may be necessary and appropriate for the carrying out of the provisions and purposes of this Act including sections 302 and 303 and for payment of interest under subsection (b) of this section, but excluding sections 305 and 306 [by the President and such agencies as he may designate or create. Funds made available] pursuant to this paragraph for the purposes of this Act may be allocated or transferred for any of the purposes of this Act, with the approval of the Bureau of the Budget, to any agency designated to assist in carrying out this Act. Funds so allocated or transferred shall remain available for such period as may be specified in the Acts making such funds available.

(b) Interest shall accrue on (1) the cumulative amount of disbursements to carry out the purposes of sections 302 and 303 (except for storage, maintenance, and other operating and administrative expenses), plus any unpaid accrued interest, less the cumulative amount of any funds received on transactions entered into pursuant to sections 302 and 303 and any net losses incurred by an agency in carrying out its functions under sections 302 and 303 when the head of the agency determines that such net losses have occurred; and (2) the current market value of the inventory of materials procured under section 303 as of the first day of each fiscal year commencing with the first fiscal year beginning July 1, 1975. At the close of each fiscal year there shall be deposited into the Treasury as miscellaneous receipts, from any amounts appropriated under this section, an amount which the Secretary of the Treasury determines necessary to provide for the payment of any interest accrued and unpaid under this subsection. The rate of such interest shall be determined by the Secretary of the Treasury, taking into consideration the average market yield during the month preceding each fiscal year on outstanding marketable obligations of the United States with one year remaining to maturity."

[1] Public Law 93-426, Sept. 30, 1974, sec. 3, 88 Stat. 1167, added subsection (b) of sec. 711.

"(2) (A) There are hereby authorized to be appropriated without fiscal year limitation not to exceed $3,000,000,000 to carry out the provisions of section 305 until the date on which the authority of the President under such section ceases to be effective in accordance with section 305(k)(1). Subject to subparagraphs (B) and (C), all such funds shall remain available until expended.

"(B) Such funds may be expended to carry out section 305 after such date only if such funds were obligated by the President before such date, or are required to be retained as a reserve against a contingent obligation incurred before such date.

"(C) Any sums appropriated pursuant to this paragraph which have not been expended or obligated pursuant to subparagraph (B) as of the date determined under section 305(k)(1) or are not required to be retained as a reserve against a contingent obligation as specified in subparagraph (B), shall be transferred to the Energy Security Reserve and made available to the Secretary of the Treasury for the United States Synthetic Fuels Corporation pursuant to section 195 of the United States Synthetic Fuels Corporation Act of 1980.

"(3) There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of section 305(k)(2).".

SEC. 717. (a) Title I (except section 104), title III, and title VII (except sections 708,[16] 714 and 719) of this Act, and all authority conferred thereunder shall terminate at the close of September 30, 1981.[17] Section 714 of this Act, and all authority conferred thereunder, shall terminate at the close of July 31, 1953. Section 104, title II, and title VI of this Act, and all authority conferred thereunder, shall terminate at the close of June 30, 1953. Title IV and V of this Act, and all authority conferred thereunder, shall terminate at the close of April 30, 1953.

(b) Notwithstanding the foregoing—

(1) The Congress by concurrent resolution or the President by proclamation may terminate this Act prior to the termination otherwise provided therefor.

(2) The Congress may also provide by concurrent resolution that any section of this Act and all authority conferred thereunder shall terminate prior to the termination otherwise provided therefor.

(3) Any agency created under this Act may be continued in existence for purposes of liquidation for not to exceed six months after the termination of the provision authorizing the creation of such agency.

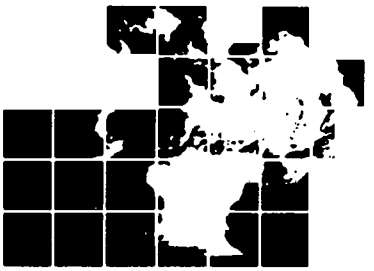
(c) The termination of any section of this Act, or of any agency or corporation utilized under this Act, shall not affect the disbursement of funds under, or the carrying out of, any contract, guarantee, commitment or other obligation entered into pursuant to this Act prior to the date of such termination, or the taking of any action necessary to preserve or protect the interests of the United States in any amounts advanced or paid out in carrying on operations under this Act, or the taking of any action (including the making of new guarantees) deemed by a guaranteeing agency to be necessary to accomplish the orderly liquidation, adjustment, or settlement of any loans guaranteed under this Act, including actions deemed necessary to avoid undue hardship to borrowers in reconverting to normal civilian production; and all of the authority granted to the President, guaranteeing agencies, and fiscal agents, under section 301 of this Act shall be applicable to actions taken pursuant to the authority contained in this subsection.

Notwithstanding any other provision of this Act, the termination of title VI or any section thereof shall not be construed as affecting any obligation, condition, liability, or restriction arising out of any agreement heretofore entered into pursuant to, or under the authority of, section 602 or section 605 of this Act, or any issuance thereunder, by any person or corporation and the Federal Government or any agency thereof relating to the provision of housing for defense workers or military personnel in an area designated as a critical defense housing area pursuant to law.

(d) No action for the recovery of any cooperative payment made to a cooperative association by a Market Administrator under an invalid provision of a milk marketing order issued by the Secretary of Agriculture pursuant to the Agricultural Marketing Agreement Act of 1937 shall be maintained unless such action is brought by producers specifically named as party plaintiffs to recover their respective share of such payments within ninety days after the date of enactment of the Defense Production Act Amendments of 1952 with respect to any cause of action heretofore accrued and not otherwise barred, or within ninety days after accrual with respect to future payments, and unless each claimant shall allege and prove (1) that he objected at the hearing to the provisions of the order under which such payments were made and (2) that he either refused to accept payments computed with such deduction or accepted them under protest to either the Secretary or the Administrator. The district courts of the United States shall have exclusive original jurisdiction of all such actions regardless of the amount involved. This subsection shall not apply to funds held in escrow pursuant to court order. Notwithstanding any other provision of this Act, no termination date shall be applicable to this subsection.

[16] Authority of the President to approve certain voluntary agreements made permanent, May 18, 1971, by 85 Stat. 88.

[17] The Defense Production Act was grated two simple extensions as follows: to July 80, 1974, P.L. 93-323, (88 Stat. 280) and to September 30, 1974; P.L. 93-367, (88 Stat. 419). Final extension of the act was to June 30, 1975, by P.L. 93-426, (88 Stat. 1166).



References

1. The Effects of Nuclear War, Office of Technology Assessment, Congress of the United States, Library of Congress Card Number 79-600080, U.S. Government Printing Office, Washington, D. C. 20402, 1979.

2. Effects of Nuclear Weapons, Glasstone and Dolan, eds., U.S. Department of Defense and Department of Energy, Washington, D.C., 1977.

3. Review of Nuclear Weapons Effects, H. L. Brode, Ann. Rev. Nuclear Science, Volume 18, p. 153, 1968.

4. Effects of Electromagnetic Pulse on a Power System, Oak Ridge National Laboratory Report ORNL 4836, Dec. 1972.

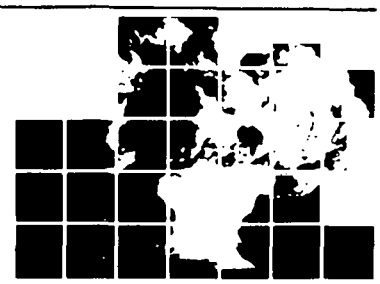
5. Power System EMP Protection Final Report, Oak Ridge National Laboratory Report ORNL 4958, March 1975.

6. Effects of Nuclear Electromagnetic Pulse (EMP) on Synchronous Stability of the Electric Power System, Oak Ridge National Laboratory, ORNL 4919, Nov. 1975.

7. A Program to Counter the Effects of Nuclear Electromagnetic Pulse in Commercial Power Systems, Oak Ridge National Laboratory, ORNL-TM-3552, Part 1.

8. Feasibility of Isolating Vulnerable Equipment of the Electric Power System from Sources of EMP, Final Report, by E. K. Stanek, for the Defense Civil Preparedness Agency (DOD), DCPA 01-76-C-0290. March, 1978.

9. Prototype Plans for Production and Maintenance of Electric Power in Crisis Relocation, Final Report, by D. O. Daniel and J. E. Minor for the Defense Civil Preparedness Agency (DOD), DCPA 01-74-C-0336. August, 1975.



State Plan (s)

These plans are issued separately by each individual State Civil Defense Office.

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