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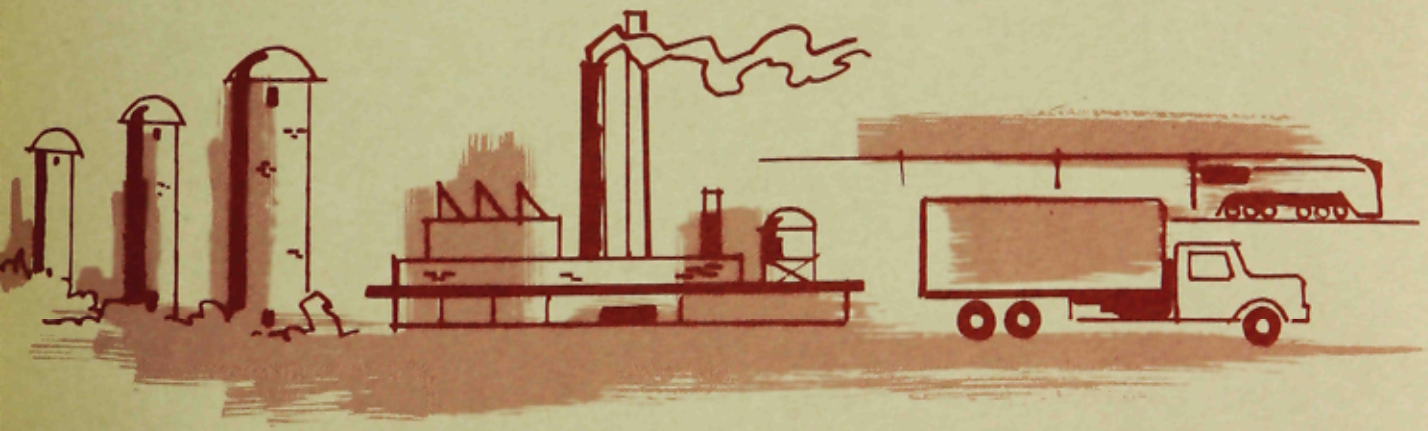
UIDE TO CIVIL DEFENSE MANAGEMENT IN THE FOOD INDUSTRY



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U.S. DEPARTMENT OF AGRICULTURE • AGRICULTURAL MARKETING SERVICE

FOREWORD

The history of mankind and the records of his wars clearly demonstrate that food is a prime weapon, a prime target, and the prime element of survival.

We in this Nation often take agricultural abundance for granted. And we take for granted, too, the highly complex and efficient food processing, storage and distribution mechanisms by which the food industry converts raw farm products into the finest foods available in the world, and puts them in our markets, stores, and eating places with such regularity.

We can be sure that the food facilities and equipment of the food industry, as well as the highly-trained and specialized know-how to operate them, would be prime targets that could be substantially damaged or destroyed should we ever have a nuclear attack upon the United States.

The better we understand the dangers and train ourselves to do those things which will add to our capability for survival, the greater deterrent we create against a possible enemy's belief that he could destroy our food industry.

This Guide contains the essence of what the food industry needs to do to increase its ability to survive and to maintain continuity of food processing and distribution. Many of the things which this booklet points up can be done with little or no expenditure of funds, but they are actions which should be taken *now*.

Our best survival insurance for the food industry is to know the dangers of a possible attack, to take reasonable precautions to enhance our survival, and to plan how to get back into operation quickly following an attack.

Orville L. Freeman

Orville L. Freeman,
Secretary of Agriculture.

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INTRODUCTION

It is impossible to foresee when mankind will be relieved of the threat of nuclear warfare. The new dimension of destruction which burst upon the world in 1945 has grown more imposing through the years. Masters of defense are hard-pressed to devise antidotes for the staggering power of nuclear weapons.

The tremendous scope of these weapons and their multiple effects do not render the cause of survival hopeless, however. Effective defenses against some of the effects of nuclear attack are available. Even though a full-scale attack would cause many casualties, this Nation and its people have in their hands and hearts the tools to survive.

The most important tools are an ability to face the threat squarely, the determination to prepare for it, and a unity of purpose. Nowhere is it more important that these tools be utilized than in the food industry, whose continued operation in an emergency certainly would be one of the most critical ingredients in the Nation's ability to survive.

Despair would be a natural reaction in the wake of overwhelming nuclear disaster. But businessmen generally, and food plant operators particularly, could not afford the luxury of abandoning their responsibilities under such circumstances. The continuation of post-attack food plant operations is essential not only to the welfare of the owners, employees and their families, but also to the well-being of the community and the Nation.

Few industries have the opportunity to serve the national emergency planning effort in as basic a way as the food industry. In the recovery period following a nuclear attack, the people would be most concerned with survival, food and shelter. The ability of the food industry to recover quickly from the effects of attack and resume its feeding of the population would be one of the best assurances for survival and recovery.

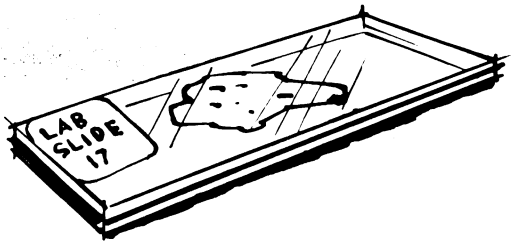
It should be obvious, therefore, that there is a pressing need in the food industry for careful survival planning and continuing cooperation with the local, State and Federal governments in preparing a national survival program. This Guide is designed to encourage and assist the food plant operator in carrying out those survival preparations which are essential to his own welfare, his community's and the Nation's.

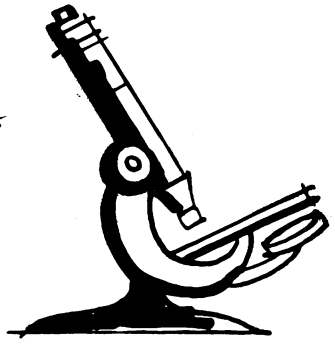
Throughout this Guide, references will be made to "food plants," "food concerns" and "food companies." These terms mean any concern engaged in the processing, storage, or distribution of food. The information in this Guide is directed at that phase of the food industry's operations which precedes the retailing of food products. It is this phase—the processing and handling of the food from the farm gate through the wholesaler—that is the concern of the U.S. Department of Agriculture's Agricultural Marketing Service (AMS). The emergency distribution of food to consumers will be primarily the States' responsibilities, with assistance from the Federal Government as necessary.

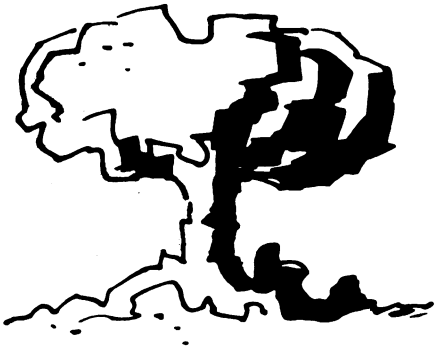
While this Guide deals to a great extent with the concept of sizable emergency forces in a food facility, it should not be assumed that it is designed solely for the large processor with a variety of facilities and bountiful resources. On the contrary, the steps outlined are actions which should be taken in some degree by all food concerns, large and small, regardless of geographic location. Each food plant manager must, in the final analysis, determine the feasibility and value of each step in his own operation. If he has a small company—and the majority of the Nation's food processing firms are small—his preparations will necessarily be less elaborate than those of a large company operating many plants throughout the country. However, the principles of preparedness in this Guide apply to all companies.

No matter how small or how remote a food plant may be from a probable enemy target, the manager should give serious thought to each of the areas of preparation outlined in this Guide. If his study does nothing more than convince him that he is well prepared in certain respects, this knowledge will enable him to plan more confidently for the future, and to direct his emergency preparedness efforts to areas which need further attention.

PART I. ORIENTATION TO CIVIL DEFENSE PLANNING IN THE FOOD INDUSTRY







EFFECTS OF ATTACK BY MODERN WEAPONS

While fallout radiation from nuclear weapons is considered to be by far the major threat, the range and versatility of modern weaponry are greater than at any time in history. Potential enemies have capability in biological and chemical weapons as well. Should all-out war occur, these might be used against this country in conjunction with a nuclear attack.

In industrial defense planning, consideration should be given to the full range of possibilities in an attack, even though such consideration becomes increasingly difficult as delivery systems grow more efficient and penetrating year by year. The fact that such efficiency does exist makes the planning steps outlined in this Guide more urgent for the individual and collective security of the American food industry.

An all-out nuclear attack upon this Nation most probably would be launched by intercontinental ballistic missiles, long-range bombers, and possibly submarine-based missiles. These direct attacks probably would be combined with subversive or sabotage operations, the possible use of biological or chemical warfare agents and psychological warfare.

Although the dangers of attack from biological or chemical agents have increased substantially in recent years because of the increasingly insidious types of agents available, the means by which food plant managers can protect their personnel and their products remain standardized.

The new dimension which has added an uncertain and awesome element to the prospect of all-out war is the threat of nuclear attack. The tremendous damage created by nuclear weapons, plus the fact that scientists still are learning about the weapons and their effects, underscores the need for organized preparations to defend the Nation's people and industries against such an attack. An intelligent defense against the threat of nuclear attack must be preceded by an understanding of the threat.

A nuclear explosion produces four types of destructive forces—blast, heat, initial radiation, and residual radiation, generally called radioactive fallout. The first three occur almost instantaneously at the moment of explosion. While protective measures can reduce the area of damage from these phenomena, little can be done to avoid them at very close range. These initial effects are devastating, but they are geographically limited. The delayed effect, radioactive fallout, in an all-out nuclear attack could blanket much larger areas of the country. Thus, it poses a broader, longer lasting threat to the Nation as a whole. Fallout can be just as deadly as the initial effects of the bomb, but a variety of measures can be taken to protect the people until the hazard has dissipated by the decline of radioactivity with the passage of time.

The area of severe destruction resulting from blast, heat, and initial radiation will vary with the size of the nuclear weapon, the height of the explosion, and to some extent, with the terrain and atmospheric conditions. The size of the weapon is measured in terms of the amount of energy released, compared with the energy released by TNT. For instance, a one-kiloton nuclear bomb produces the same amount of energy as the explosion of 1,000 tons of TNT. A one-megaton bomb has explosive power equivalent to 1,000,000 tons of TNT.

Earlier nuclear weapons were measured in kilotons, but the power of weapons now goes to bombs of many megatons. A five-megaton weapon exploded on the ground would cause severe destruction to residential buildings for a radius of 6 miles from the point of detonation. Similar destruction from a 20-megaton weapon would extend to a radius of nearly 10 miles. The heat from a ten-megaton bomb exploded on the ground might set fire to easily-ignitable materials within a radius of 15 to 20 miles on a clear day. If the bomb exploded several miles above the surface, the area of fire damage would be somewhat greater.

A five-megaton weapon exploded on the ground would leave a crater about half a mile across and 200 feet deep. As the fireball rises, it draws up the thousands of tons of pulverized and some vaporized matter which has been contaminated by the radioactive residue of the explosion. As this material reaches the cold upper air, the vaporized portion condenses, just as rain or snow, and starts falling back to earth along with the dust-like material. It is called fallout.

From the ground one cannot tell which way the fallout will be blown from the point of explosion. The contaminated area will be determined by the high-altitude winds which may be moving in a different direction from ground-level winds. The heavier particles of fallout will reach the ground a few miles from the explosion about half an hour after it occurs. Fallout will begin on an area 20 miles away in about an hour, and 100 miles away probably in 4 to 6 hours. A food plant's distance from the point of nuclear explosion therefore determines to a great extent the amount of time its employees have in which to take protective action.

The early fallout, which contains the major radiation danger, descends in less than 24 hours. Less dangerous lighter particles, called delayed fallout, will sift down at a diminishing rate for years. Those who can remain in adequately protected shelter areas until the early, heavy fallout has lost its strength—at least for a period of 2 days to 2 weeks or longer—will survive. Fallout loses about 90 percent of its strength in the first 2 days.

Fallout particles emit several types of radiation, but the most dangerous ones are gamma rays, like X-rays. Gamma rays have greater penetration power than other types, and over-exposure to them can cause sickness or death.

Radiation exposure is measured in units called roentgens. During the average lifetime, every human being receives about 10 roentgens of nuclear radiation from natural sources. Exposure to more than 300 roentgens over a period of a few days—a dose which unprotected persons might receive after a nuclear attack—would cause sickness in the form of nausea, and possibly death. Death would be certain if a person were to receive an exposure of 1,000 roentgens over a period of a few days.

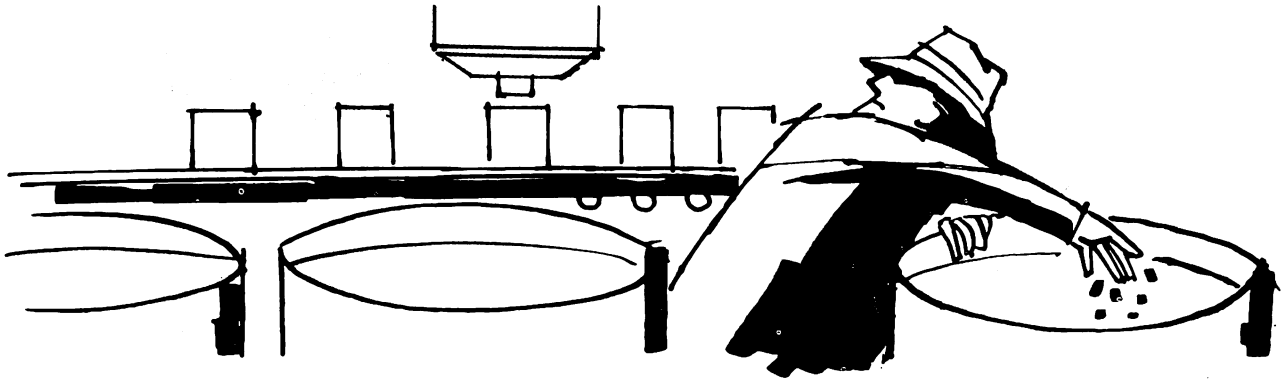
The purpose of fallout shelters is to provide shielding against gamma radiation. Since the rays do have an enormous penetration ability, the most practical way to protect against them is to place a sufficient amount of mass between the fallout and the people to be protected. This shielding may be furnished by any type of material that places mass between the source of radiation and the people, but the more dense the material the better its protection. The Office of Civil Defense, Department of Defense, recommends planned fallout shelters which furnish a protection factor of at least 40. This means that a person in such a shelter would be exposed at a maximum to only $\frac{1}{40}$th of the fallout intensity outside the shelter. Even without planned fallout shelters, however, there are many ways to improvise shelter, especially in industrial buildings.

One principle should be kept in mind regarding protection against fallout: Any protection is better than none.

Raw and finished foods are especially susceptible to radiation hazards during processing and storage. While they are not damaged by radioactive rays, as human cells are, they may be rendered inedible—at least temporarily—if the radioactive fallout particles actually become mixed in with them. Food containing a high concentration of fallout particles should not be eaten until the radioactivity has decreased to tolerable limits.

Food plant managers should start thinking about fallout protection immediately, for their people and their food and food products. Detailed information on the types of protective measures they can take may be obtained from local, State or Federal civil defense officials, or from U.S. Department of Agriculture State and County Defense Boards.

ATTACK BY SABOTAGE



Because of the characteristics of food manufacturing processes, and the nature of certain foods and their ingredients, many segments of the food industry are extremely vulnerable to introduction of biological and chemical agents.

In addition to the threat of sabotage to food facilities through fire, explosion or mechanical methods, company officials should consider the possibility that chemical, biological, or even radiological agents could be used to contaminate sufficient food to impair the health or endanger the lives of large numbers of people throughout the country. Many quality control procedures in the food industry today are not adequate protection against chemical, biological, or radiological warfare.

Although susceptibility to sabotage varies greatly with the particular aspect of the industry or even the manufacturer, these generalizations can be made:

Processes such as canning may be considered safe from harmful biological agents unless there is tampering with the process itself. Processes involving use of open collection, mixing, holding and storage tanks and sumps are particularly susceptible to sabotage. Ingredients used in processing such as sugar, water, shortening, baking powder, leavening agents, chocolate, gelatin, starch and similar substances offer particular hazards as carriers of biological or chemical agents. Fatty foods present special problems with regard to chemical warfare. Materials transported in tank cars or trucks are especially susceptible to sabotage during transportation. Minor ingredients such as spices, flavors, glutamate, food color, concentrates and preservatives could be used as carriers for chemical agents.

Where large amounts of air are brought into contact with the food, such as in pneumatic transfer of flour, spray drying or dehydration, that food may also be vulnerable to sabotage.

Since water is used extensively in most food processes, and since it is frequently susceptible to contamination, special precautions should be taken to guard against sabotage of water supplies. Plant managers should assess the vulnerability of their processes, materials and products to sabotage, and take protective measures.

THE NATIONAL CIVIL DEFENSE PROGRAM

Intensive studies of enemy attack capabilities and the effects of direct attack with modern weapons and sabotage make it clear that a nationwide program of civil defense preparedness is essential to national survival, and that fallout protection is the best method of saving more lives at the least cost in event of a nuclear attack. Also, fallout shelters can be made available in the shortest time.

The National Civil Defense Program, therefore, is oriented primarily to one objective—protection of every American against radioactive fallout. The priority elements in the program include:

1. **Shelters equipped and provisioned to furnish fallout protection for every citizen,**
2. **Warning and communication methods to alert the Nation to attack and to provide emergency information,**
3. **A system for detecting and reporting the intensity of radioactive fallout, and**
4. **Organization and training in civil defense techniques with emphasis on shelter management and shelter living.**

SHELTERS

The key effort in the National Civil Defense Program is the establishment of a nationwide system of fallout shelters. As the first step the Federal Government has made a national fallout shelter survey to determine the amount of shelter space which already exists in major buildings all over the country. This national fallout shelter survey has uncovered over 104 million shelter spaces in existing facilities, many of which are located in business and industrial establishments.

The minimum fallout "protection factor" for public shelters is 40. This means that the radiation measurement inside the shelter would be $\frac{1}{40}$th—or $2\frac{1}{2}$ percent of the radiation measurement outside the shelter. Also, in order to qualify as a public shelter the space must accommodate 50 people or more (with a net space of 10 square feet per person with ventilation of 3 cubic feet per minute per person; or 500 cubic feet per person without mechanical ventilation) and have a storage capacity for supplies and equipment of approximately $1\frac{1}{4}$ cubic feet per person.

Facilities which are needed and which meet these minimum requirements and which are licensed will be marked and stocked with shelter supplies by the Federal Government for use as public shelters.

Therefore, *as applies only to existing construction* facilities offering protection factors of 40 to 99 or more will be approved for marking and provisioning as public shelters by the Federal Government.

Supplies provided by the Federal Government include a special austere food ration of 10,000 calories per person, metal containers for 14 quarts of water per person, medical and sanitation items, and radiation detection and measuring instruments.

Local civil defense directors have the final decision in determining the need for licensing, marking, and stocking shelters.

WARNING

The backbone of the civil defense warning system is the National Warning System (NAWAS), which links the OCD National Warning Center at NORAD headquarters and seven OCD warning centers at NORAD regions with 500 warning points in the continental United States. Once it has been determined that attack is probable or imminent, OCD warning centers disseminate an air raid warning and supplemental information to the 500 warning points. They, in turn, relay the warning and the warning time to approximately 3,500 secondary warning points, which pass the warning to local officials responsible for warning the public.

There are two civil defense warning signals, the (1) "ALERT" and (2) "TAKE COVER" sounded on outdoor warning devices. The "ALERT" signal is a 3- to 5-minute steady blast or tone, meaning "attack is probable—take action as directed by local government." The "TAKE COVER" signal is a 3-minute wailing tone or a series of short blasts meaning "attack is imminent—take cover immediately in the best available shelter."

RADIOLOGICAL DEFENSE

Radiological monitoring is an indispensable service to all civil defense organizations and their operations. In the event of a nuclear attack, trained monitors will be required to furnish information essential for human protection. Monitoring services will be required from the period shortly after a nuclear attack until the radiological hazard from fallout diminishes to the point that normal activities may be resumed without significant danger.

A minimum of 150,000 monitoring stations is required across the United States to provide effective service at Federal, State and local levels of government,

and rapid progress is being made toward attaining this goal. An average of four trained monitors is required for each station.

Radiological detection instruments are being placed in all public fallout shelters and individuals are being trained in radiological monitoring for determining when it is safe for occupants to leave shelters.

TRAINING AND EDUCATION

The Office of Civil Defense maintains three schools for instructing civil defense officials and training instructors in management of shelters and radiological defense. Currently six courses are given: Shelter Management (Instructor), Radiological Monitoring for Instructors, Radiological Defense Officer, Civil Defense Management, Planning and Operations, and Elements of a Shelter System Capability.

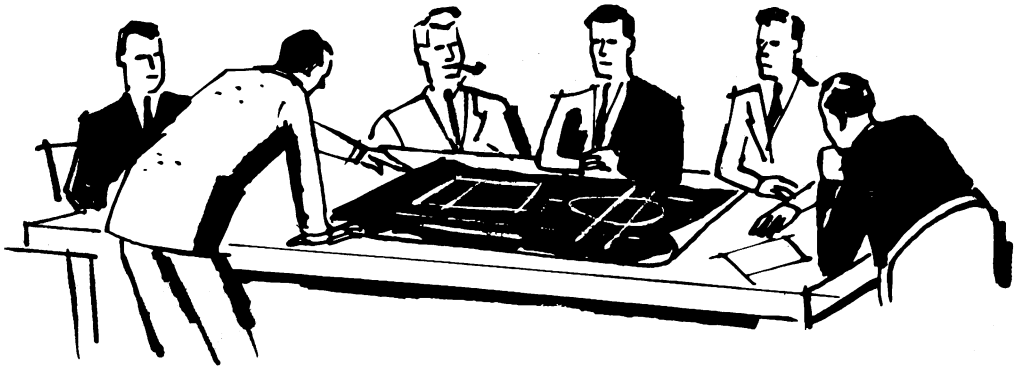
The Federal Government has prepared and packaged a wide variety of materials and items for use by instructors in training government officials and volunteer auxiliaries in their home States.

The U.S. Department of Agriculture, in addition to providing information and guidance to the food industry in preparing for civil defense, provides information and training for the rural population for survival in a nuclear attack. Other Federal agencies conduct courses on subjects for which they are normally responsible. For example, in the Department of Health, Education, and Welfare the Food and Drug Administration trains in prevention of sabotage of food and food processing, the Public Health Service provides training for medical self-help to enable individuals to meet emergency health needs if professional assistance is unavailable for prolonged periods, and the Office of Education conducts a civil defense adult education program designed to develop knowledge and understanding of plans for civil defense and to encourage participation in civil defense with emphasis on the fallout shelter program. In addition, guidance and instructional materials have been provided to carry out civil defense instruction in public schools and colleges.

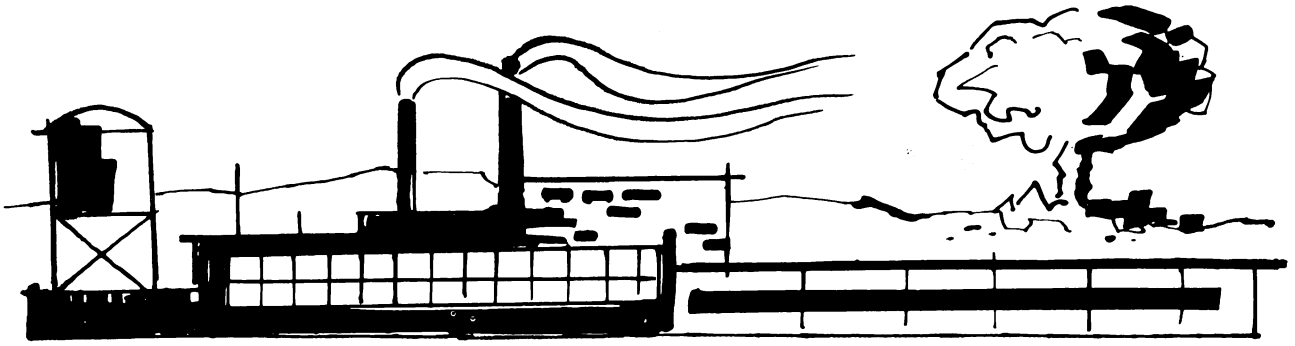
Special courses in shelter design and analysis are being given at various schools throughout the country to acquaint architects and engineers with a new technology. Upon successful completion of the course, these architects and engineers are certified by the Department of Defense, and are capable of evaluating shelter in existing structures as well as designing shelter in new construction.

The National Civil Defense Program is sponsored by the Federal Government through the Department of Defense, Office of Civil Defense, and with the cooperation of State and local civil defense officials. The full participation of all industries is essential. Cooperation of food plant managers is not only a prudent means by which they can insure protection of their employees and plants, but is a serious public responsibility as well.

INDUSTRIAL CIVIL DEFENSE PREPAREDNESS



If the United States is ever attacked by nuclear weapons, the Nation's survival will depend largely upon how well our industrial community can survive and recover from the blow. The role of industry in civil defense and post-attack recovery is intimately connected with the survival of the people as well as the survival of our free enterprise system—our way of life.



Industry cannot survive by instinct and determination alone. The enormous devastation which could be created by nuclear holocaust demands intelligent action by all industries to meet the threat to their existence. The program of civil defense for industry was designed to provide guidance and coordination for the national industrial preparedness effort.

Although a system of fallout shelters is the foundation upon which civil defense measures are based, readying fallout shelters is by no means the only preparedness action to be taken. It is clear that fallout shelters must be created and made ready before other civil defense actions will have much meaning.

Every company should develop civil defense plans in close cooperation with the local civil defense director. It is his job to coordinate emergency planning among departments of local government, to guide and help industry in preparing for civil defense, and to arrange for training of civil defense coordinators and committee members at OCD schools.

It is clear that there can be no one plan which will meet the requirements of all companies and plants. However, with information gathered from Hiroshima and Nagasaki, from the A-bomb and H-bomb tests, and from the thinking of many industrial executives who have already made certain disaster preparations within their companies and plants, there have evolved elements of an industrial civil defense program which can be tailored to fit each company and plant situation.

Ideally, to plan and administer a company civil defense program, management should designate corporate and plant civil defense coordinators, establish a civil defense advisory committee composed of representatives of various departments of the company, issue appropriate policy statements and administrative directives to establish the company civil defense program, and publish the company civil defense plan in a manual.

Industrial leaders—planning for civil defense emergencies—in addition to providing shelters for employees and the public, should: plan for the movement of employees to shelter; train employees in shelter management; arrange for receipt and dissemination of warning; establish a control center and communications system; develop emergency shutdown procedures; organize and train the plant protective services and employees for self-help including radiological monitoring; enroll the industrial protective services and other skilled units into appropriate departments of local government as auxiliaries; protect vital records and documents; plan for executive succession and continuity of management—this may require amendment of corporate by-laws and regulations; prepare for emergency repair and restoration of facilities; join with other plants in the neighborhood to set up an industrial mutual aid association; establish a security system for protection against espionage and sabotage; inform and educate employees in methods of personal and home survival; and provide leadership, support and assistance to government in preparing for community survival.

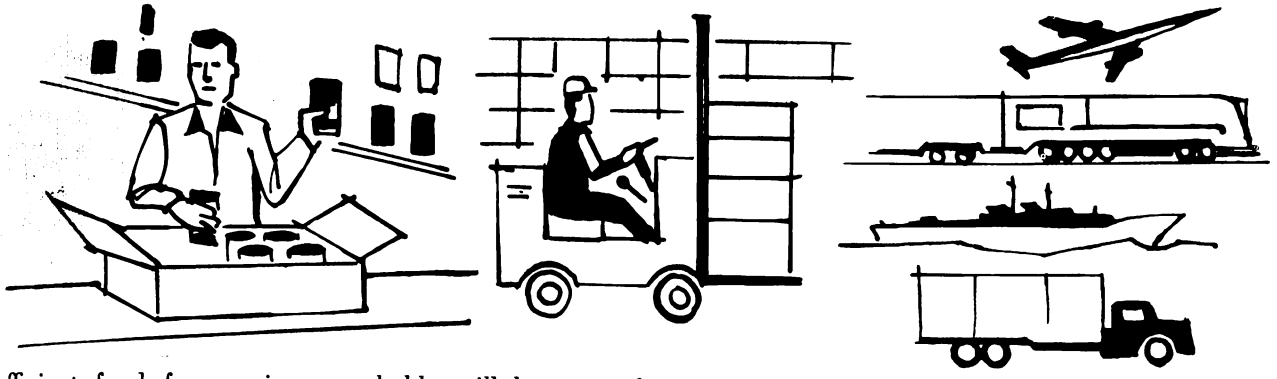
Industries must take the initiative and carry the load in providing for their survival. Government can, and will, give technical and other assistance, and will cooperate in every way possible; but industry itself, in cooperation with government, must make and put into effect its own civil defense plans.

In a nuclear emergency, the facilities of local governments will be taxed beyond capacity. The ability of industrial plants to survive will be directly dependent upon the advance training and preparations which they have devoted to survival techniques.

Under Executive Order No. 10998 of February 16, 1962, the U.S. Department of Agriculture is responsible for providing civil defense information and assistance to the companies throughout the Nation representative of the food industry.

Preparing for civil defense in industry—saving lives of employees and protecting corporate property—is no luxury; it is good insurance. All industries are urged to participate, for their own welfare and for the sake of the Nation.

GOVERNMENT PLANS FOR POST-ATTACK FOOD PROCESSING, STORAGE, AND DISTRIBUTION



Sufficient food for survivors probably will be on hand throughout the Nation following a nuclear attack, but the principal problem will be moving it from storage or the processing plant to consumer areas where and when it is needed. Emergency food management preparedness, therefore, is directed at three basic objectives:

1. Conservation and orderly use of surviving food supplies.

2. Processing of raw food stocks into the form suitable for consumption or reduction of perishability.

3. All possible assistance in maintaining the orderly distribution of food for the surviving population, our military requirements, and those of our allies.

The responsibility for emergency food management has been assigned by the Secretary of Agriculture to USDA's Agricultural Marketing Service. The AMS job is to work with the food industry in planning means of conserving food. getting it processed and distributed properly following a nuclear attack, and helping in post-attack maintenance or restoration of processing, storage, handling and distribution facilities to keep food moving.

The responsibilities of AMS extend from the farm gate through the wholesaler level in the distribution chain. By agreement with individual States, a part of these responsibilities will be shared by some State governments, but States will be primarily concerned with mass-feeding and with distribution of food at the retail level, development of consumer rationing programs and other plans necessary to assure equitable distribution of consumers' supplies.

As is the case with AMS, other agencies of the U.S. Department of Agriculture have been assigned emergency duties which parallel their regular functions. In anticipation of communications difficulties in a post-attack period, USDA State and County Defense Boards have been established to function independently if necessary. The executive directors of the Agricultural Stabilization and Conservation Service State offices are chairmen of the USDA State Defense Boards. County ASCS office managers serve as chairmen of USDA County Defense Boards. Members of the boards at both levels include locally situated employees of major agencies of the Department.

The food industry's role in a national emergency is a relatively simple one—to continue processing, storing and distributing food to meet the Nation's needs. The Government, even with all the facilities at its disposal, cannot produce, process, store and distribute the food. These tasks can be accomplished only by determined and effective efforts of farmers and food processing and handling concerns. But the Government can help the food industry to meet the challenges posed by the emergency, and this is the purpose of the food management program.

The emergency program will consist of four principles of food management:

1. ***Conservation.*** A temporary "freeze" will be placed on food sales and deliveries in the immediate post-attack period, to prevent unwise usage while the Government and food industry take stock of the situation. This freeze may be expected to continue until it is determined how much food is available, how long it would last, when and where more can be obtained, when and where processing materials and services can be obtained, and what kind of emergency actions have to be taken to cope with dislocations and stoppages. A considerable list of foods will be exempt from this principle, particularly foods in imminent danger of spoilage for which the best conservation would be immediate use.

2. ***Using perishables first.*** Conservation of canned foods and other non-perishables will be emphasized while perishables such as fresh meats, fish, milk and produce are available. An effort will be made to preserve perishables which exceed immediate needs,

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so that the drain on other non-perishable stocks will be eased. Special efforts will be made to conserve foods which are produced or processed in only a few locations or are imported.

3. ***Limiting consumption.*** It is virtually certain that food consumption will have to be limited, at least for a time, following an all-out attack. Plans call for State and local governments to initiate rationing as soon as distribution is resumed. A tentative National Emergency Food Consumption Standard has been developed to serve as a guide in food distribution and consumption. Such limits on distribution are also essential to prevent hoarding.

4. ***Alternate marketing and supply systems.*** An all-out attack is certain to leave the food industry with a confusing combination of shortages and excesses. There may be grain without mills, and elsewhere, mills without grain. There may be slaughter plants without labor, and labor whose plants are destroyed. One of the biggest jobs of both Government and industry will be to match the surviving resources so that they can be utilized efficiently.

None of these principles will become actualities automatically. Their realization in an emergency will require diligent planning, and the planning should be started immediately. There will be no time to plan when the warning sounds. Those in the food industry, and county and State government officials should become acquainted with the USDA State and County Defense Boards and their activities. These boards are the officials from whom the food industry and farmers will hear most directly and most often in emergency planning and post-attack operations.

PART II. CIVIL DEFENSE PREPARATIONS IN THE FOOD INDUSTRY

PLANNING

If a food company's disaster preparedness program is to be effective, its planning and preparation must be given the same degree of attention as other corporate activities. In a multi-plant operation, planning should be conducted on both a corporate and a plant basis. Guidelines for protection of the people and property should be developed at the corporate level, with the details worked out by individual plants with the help of civil defense officials in plant communities.

One of the first steps in planning and organizing should be the appointment of a single individual at the corporate level to provide coordination and direction of the overall disaster preparedness program, and a counterpart official in each plant to direct its phase of the program. In a small plant, the manager may do his own planning. The civil defense coordinator must have the administrative and organizational responsibility for making the plan work, for the plan will be of no value unless the personnel of the company or the plant are subsequently organized and trained to carry it out.

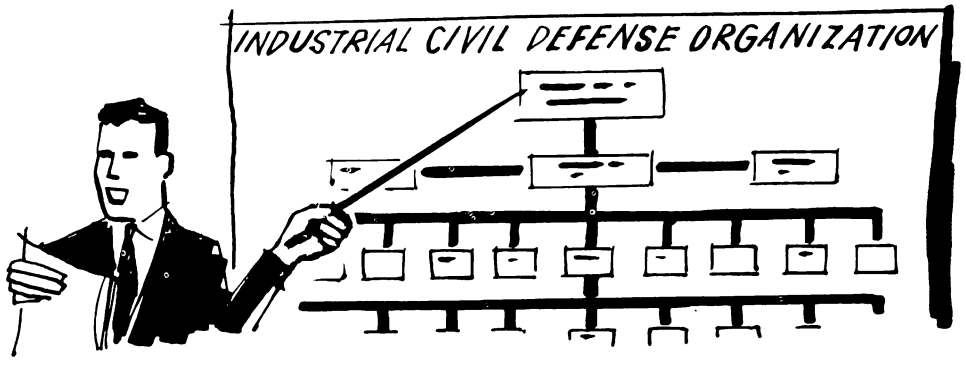
The second step should be the appointment of a civil defense advisory committee, representing both employees and management, to assist the civil defense coordinator and to insure that the plan and organization receive the active cooperation of all elements in the company.

Under guidance of the company civil defense coordinator and his advisory committee, company officials next should assess the vulnerability of the facilities and the company's capability for meeting a disaster. Such a survey includes analysis of the probable threats to plant and personnel, the significance of geographical location, the industrial processes employed by the company, the capability of plant protective organizations to minimize damage, and the amount of protection available for personnel. This analysis will indicate the proper size and makeup of the company's emergency organization and the employee training programs needed.

A key factor in the effectiveness of the civil defense plan will be the shelter provisions. The kind of shelter protection needed will depend upon the plant's proximity to likely target areas. How much is provided may depend upon the budget, the type of present plant construction, availability of shelter in nearby buildings, and other variables. Certainly, each company will want to provide the best shelter for its people that circumstances will allow.

The emergency plan also should include provisions for close mutual assistance with neighboring plants and local civil defense officials. All planning should be performed in conjunction with the local civil defense director.

When the plan has been set down on paper, the civil defense coordinator for the plant should see that it gets an official stamp of approval. It is best to have it published and distributed to all personnel as a policy directive from the food plant manager, thus assuring that it will receive the attention it deserves.



A company's civil defense plan will be no better than the organization which is to put it into effect. After a company civil defense coordinator has been designated and an advisory committee selected, all companies should organize and train small groups of employees for specialized emergency services, such as firefighting, rescue, police, first aid, chemical and biological defense and radiological monitoring to safeguard the building and its occupants in time of attack or other major disaster. The framework of an effective disaster control or self-help organization is already in existence in most large buildings and industrial plants. For example, most plants already have organized and trained fire brigades, guard services, rescue teams, first aid and welfare groups.

In order to be prepared for self-help the problem is simply one of enlarging and extending already organized groups. Industrial physicians or nurses become responsible for first-aid and medical self-help, police responsible for maintenance of order, firemen for fire control, etc., with the addition of perhaps a few teams concerned with radiological monitoring, chemical and biological defense, and rescue.

This organization should be formed in two steps. The first is preparation of the company's regular plant protective services to perform emergency duties corresponding to their peacetime responsibilities. Such services, necessary to both peacetime and emergency operation, are communications, police, fire, rescue, health, engineering and welfare services. The second step is establishment of emergency services for which there is no normal counterpart. These include warning, radiological monitoring, decontamination, wardens, shelter management, alternate headquarters, continuity of management, and records protection.

When all of the company's trained specialists have been assigned to the emergency groups for which they are best fitted, such groups can be expanded to the desired strength by auxiliaries—employees selected on the basis of experience and qualifications and trained in established in-plant training courses to perform specific emergency duties. An inventory of employee experiences and interests will bring out many skills useful to the protective functions.

In smaller companies, the civil defense organization will need to be adapted to the smaller number of officials and organizational units.

Present directors of the regular plant protective services should be given the responsibility for the corresponding emergency services. For the added services, it will probably be necessary to train new leaders. Personnel for the posts should be chosen on the basis of experience and qualifications, then trained at the various civil defense training schools.

The company's emergency organization should not replace the normal plant protective forces. It should be designed so as to expand existing protective groups to meet large-scale disasters. The extent of the expansion will have to be determined by the study of plant vulnerability and by special characteristics which may have a bearing on the makeup of the protective organization. The civil defense coordinator must be sure that his emergency services are adequate to meet any special problems which are likely to arise.

The plant's emergency groups should be prepared to help community civil defense preparations as well as their own organization. They will be able to serve as auxiliaries in the local government's emergency organization, thus giving the community a built-in capability for disaster action on a broad scale.

Any plant is capable of organizing for its own self-protection, provided that management supplies leadership and a chain of command for emergency planning and emergency action.

In many ways the average industrial plant is like a small community. The plant protection or emergency organization resembles the organization structure of the local government.

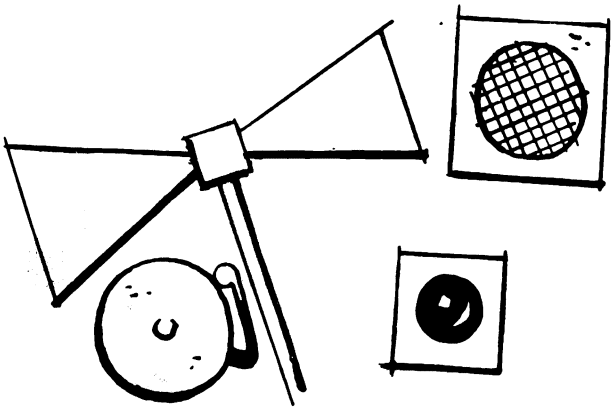
Each of the plant protective groups requires special training. Every possible use should be made of civil defense training courses, and test exercises held periodically to assure the operational efficiency of the groups.

Training will be facilitated if reciprocal agreements are arranged with the community civil defense director and other industrial civil defense organizations in the area. In this way, one plant might specialize in the teaching of a certain course, while a second plant teaches a different specialty. Such an arrangement reduces the duplication of effort, training materials and instructor personnel. Local government departments frequently assist by providing instruction and training for plant protective groups such as police and fire. Other courses in civil defense skills are offered by State and local civil defense officials.

Aside from the special training conducted for specialists in the protective services, all employees should be trained in such protective techniques as plant shutdown procedures, movement to shelter, firefighting, and rescue work. Employee training should be conducted on a regular basis through both demonstrations and drills.

All plant media should be used to provide employees with basic civil defense information. Through a combination of this information and regular training in emergency functions, the employee will serve as a source of civil defense education for his family.

WARNING



Since the company's emergency organization will need all available time in a disaster situation, arrangements should be made for local authorities to give the plant the civil defense warning by the fastest means and for disseminating it quickly to all employees.

There are two civil defense warning signals. The first, a long, steady sound on warning devices is the ALERT signal—notice that attack is probable. Upon this warning, employees should take whatever protective actions the company's emergency plans call for. The second warning signal, a wailing or series of short blasts on warning devices, is the TAKE COVER signal—notice that attack is imminent. Upon this warning, employees should seek the best available cover.

The most effective means of receiving the warning can be developed by company officials with the cooperation of the local civil defense office. Many firms use a "bell and light" system which telephone companies make available to industrial subscribers and other key installations.

The plant's next consideration is to relay the warning to all office buildings, plants, laboratories, and other places where employees are located. The community warning system may suffice, but where buildings are spread over a wide area or located beyond hearing distance, or where the noises of industrial processes obscure the sound of warning devices, a separate inplant warning system may be needed. In some instances, public address systems can be used. Or, it may be necessary to install special bells, whistles, public address system, or other devices to provide a distinctive sound. Whatever the method, it is essential that civil defense warnings can reach all employees at all times while they are in the plant.

Employees need to be told how they will be warned of impending attack, what the civil defense warning signals mean and what actions are to be taken upon receipt of the warning signal.

Warning devices should be tested periodically to insure that they are in working order, and used in the plant's civil defense exercises and drills.

COMMUNICATIONS

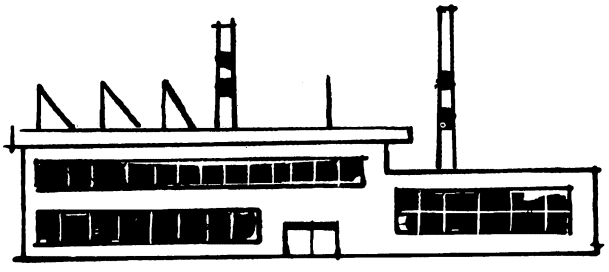
Along with the warning system, the adequacy of the company's inplant and outside communication facilities also should be appraised. Ideally, each food plant should have a control center capable of maintaining constant communication with plant employees, with other nearby plants, with the nearest government

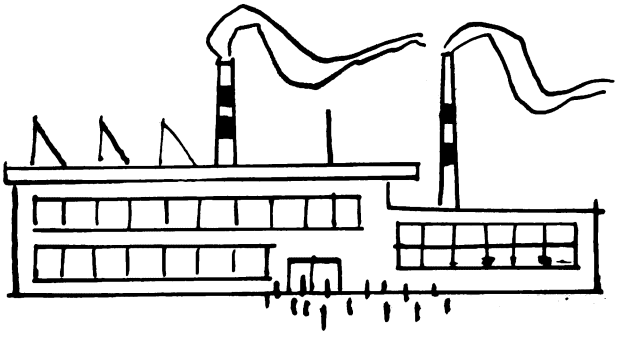
control center, and with the appropriate USDA Defense Board. Communications should also be provided between the control center and each plant shelter area.

Location of the control center and the nature of the emergency communications need to be determined on the basis of the company's attack assumptions. An underground installation with good fallout protection and some blast protection makes the best center.

In designing the communications network, consider the needs of employees during a long period of shelter occupancy. News of families and events in the outside world will be of the utmost importance to confined employees. The only means they will have of receiving such information is through the company control center, properly connected with other local informational outlets.

EMERGENCY SHUTDOWN AND START-UP PROCEDURES





Emergency procedures to shut equipment down and start it up again will be of particular concern to food industry plants in likely target areas. The handling and storage of raw materials and finished products which will be desperately needed in the post-attack period will present special problems.

Orderly, speedy shutdown in an emergency will be vital. Plans should include procedures for a routine shutdown in the event time is available. But there needs to be an alternate plan for a "crash" shutdown where attack is imminent and shutdown is required for the safety of personnel. It is the "crash" type of shutdown that is most likely to involve loss of food products, raw materials and damage to equipment; plant managers need to use the utmost ingenuity to minimize such losses. In some larger industries, it may be possible to operate some control equipment from shelter areas.

Attention should be given to particular plant hazards such as ammonia, gas or electric lines which might start fires or otherwise endanger personnel confined in shelter areas.

The shutdown and start-up plans should define clearly the responsibilities for emergency procedures. Post detailed instructions for easy reference, and rehearse all employees involved.

Periodic exercises need not involve actual shutdown of equipment. A simulated shutdown drill can be devised, with valves, switches and equipment tagged to denote that they have been closed down. Time studies of the operation will determine how successful it would have been in an actual emergency.

FALLOUT SHELTERS IN FOOD FACILITIES

Among all of a company's emergency preparations to save lives, providing effective fallout shelter—a place to go in the event of a nuclear attack—for its employees is the most important. The National Civil Defense Program has placed foremost emphasis on establishing a nationwide system of fallout shelters. As the result of a national shelter survey more than 104 million shelter spaces, many of them located in business and industrial establishments, have been identified and are being marked and stocked as official public shelters.

Industrial and business leaders should take the initiative in protecting their most productive asset—their employees. Building owners and food plant managers should cooperate with Government in the National Shelter Survey, Marking and Stocking Program by allowing all buildings to be surveyed, and their shielding capacity (protection factor) assessed by architects and engineers who are working under contract with the Army Corps of Engineers or the Navy Bureau of Yards and Docks. This information is necessary so the Federal Government may know how much adequate fallout protection there is throughout the country and determine how much more is needed.

Food plant managers should enter into agreement to allow use as public shelter of space in food facilities which meets Federal protection criteria and is needed, by signing the "Fallout Shelter License or Privilege" form.

Shelters in buildings which cannot be opened to the public in time of emergency cannot be stocked at Federal expense. In this case, equip and stock shelters for employees with basic essentials—food, water, medical and first aid supplies, and radiation, sanitation, ventilation, air-filtering, firefighting, emergency power and communications equipment.

Buildings that do not offer adequate fallout protection may be improved by modification or by additional construction to bring them up to the minimum standards. Include fallout shelters in the designs and specifications for all new plants and structures.

In some cases, specially constructed shelters may need to be provided at appropriate locations in the plant for employees who must perform shutdown procedures requiring several hours or days duration.

A directory of architects and engineers qualified in fallout shelter analysis is available to anyone requiring technical assistance in achieving the recommended protection factor for additional construction in existing buildings or in designing shelters in new plants.

Strenuous effort should be made to provide adequate fallout protection for all employees on the premises of each plant. If this is not possible, additional shelter spaces may be found in nearby buildings or facilities. Make arrangements for using such spaces with local civil defense officials.

Industry can assist local government authorities in marking and stocking public fallout shelters. The finding, marking and stocking of public fallout shelters is a tremendous nationwide logistical undertaking, placing a severe burden on local government authorities. Business and industrial firms can be of great assistance by obtaining shelter signs from local government and installing such signs in their plants in accordance with specifications provided by the Army Corps of Engineers or the Navy Bureau of Yards and Docks.

Local governments are responsible for moving shelter supplies from Federal warehouses to public shelters. Business and industrial firms can assist local government in accelerating the movement of these supplies by picking up shelter supplies at Federal warehouses and transporting and placing them in their own plant shelters. In some cities, this has been accomplished by volunteer services of the trucking industry or by use of transportation provided by a variety of business and industrial firms.

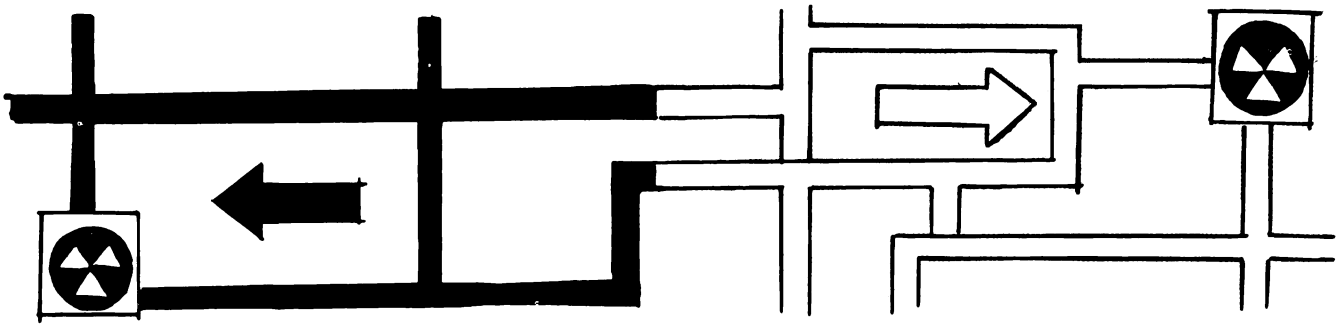
Urge employees to arrange shelter for themselves and their families by preparing home shelters or by assuring that they and their families have predetermined access to community shelters. This is especially important if the attack should come at night or on holidays when they are not at the workplace. Provide them with guidance and assistance on how to establish group shelters in their residential areas and in their homes. Be sure to coordinate your efforts with those of local governments.

In addition to having a place to go, employees must know how to live in a shelter, and what to expect and to do when it is possible to leave shelter. In cooperation with local civil defense officials, food companies should educate employees in these aspects of survival. In addition, inform employees about the community civil defense program so they will know what to do and be ready to help should an attack occur either while at work or at home.

MOVEMENT OF EMPLOYEES TO SHELTERS

While fallout shelters are the most practical and effective way to save lives in a nuclear attack, their value will be contingent upon the emergency organization's ability to get employees into them in the time available. The problem may be a simple one in a small food plant, but it quickly becomes complex as the size of the operation increases.

Under any circumstances, a plant's civil defense program must include a detailed plan for the movement of all employees quickly and safely into assigned shelter areas. Effective operation of the movement plan should be the responsibility of the plant manager,



assisted by supervisory personnel, plant police and wardens, and the civil defense coordinator. The movement must be designed to cope with any special physical characteristics of the plant, with the locations of employees at various times, and many other variables. Don't overlook the possibility that adjustments or modifications in plant facilities or procedures may greatly facilitate the movement schedule.

Once the best movement system has been developed, the process of educating and drilling employees should begin. Workers must understand that their welfare hinges directly upon teamwork and that the survival of each is inseparable from that of his fellow workers.

Drills should be supervised to insure that the movement can be made before fallout is likely to arrive. If it takes too long, the plan needs still more work.

Although shelter areas may be occupied by employees during plant exercises and drills, such plant shelter areas will be occupied by non-employees only in the event of a civil defense emergency. They will not be used for tests or emergency drills involving entrance into the buildings by the general public.

SHELTER MANAGEMENT

The effectiveness of industrial shelters will depend largely upon the willingness of management to provide and equip shelter space for its employees, and the way in which the shelters are managed. The extended confinement of a large group of diverse personalities in cramped quarters under trying conditions can lead to situations requiring unique managerial skills and training.

Business and industrial leaders should immediately organize and train for the management and use of shelters.

A company shelter manager should be designated and trained to handle staffing and management of shelters throughout the company. In addition, a shelter manager and deputy shelter manager should be designated for each shelter area in all plants and office buildings.

Regardless of size, each plant shelter ought to be staffed with fire prevention and control officers, plant police, radiological monitors, personnel trained in first aid and medical self-help, and others who can handle the rationing of food and water, supervise sanitation procedures and perform other duties required during shelter occupancy.

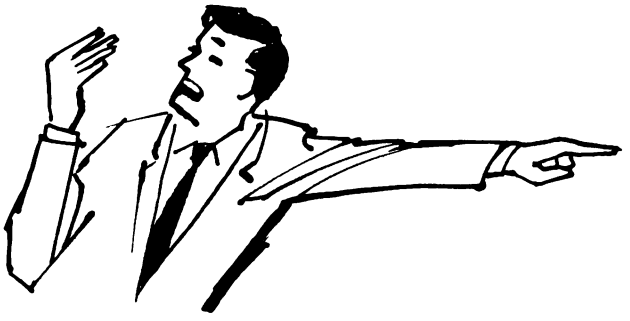
Only those who have shelter management training should be appointed to the critical position of shelter manager. In most cases, shelter managers will be supervisory employees. Assistants should be selected from the plant protective services. Companies may contact local or State civil defense officials for advice as to where potential shelter managers and staff members can receive special training.

Numerous training sessions will allow the shelter manager and his staff to build a mutual respect for one another. The staffing needed in each shelter will depend upon the size and configuration of the shelter. Six or eight people could effectively manage a 50-person, one-room shelter, but much larger staffs are

necessary to manage shelters comprised of several rooms or several floors.

As soon as shelters are marked, company officials should seek the help of civil defense officials in organizing shelter management teams and selecting qualified personnel to receive formal training.

EVACUATING THE PLANT



Because of the size and nature of some food processing companies, plant managers may find it virtually impossible to provide adequate fallout shelter for all employees. When a plant has no area that can be adapted for effective protection, then it must make plans to get its employees quickly and safely to the nearest public shelter, or to any excess shelter of the neighboring companies.

Shelter outside the plant will necessarily require orderly and swift movement of employees. Therefore, the company's civil defense coordinator should plan with community officials—or those of nearby plants—for the necessary shelter space and for the best route for getting employees to it.

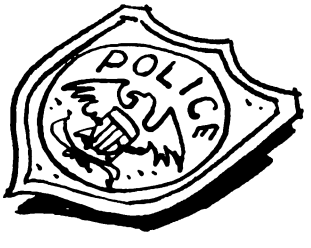
He must make standby transportation arrangements. If the designated shelter area is nearby, employees may be able to walk. If vehicles are required, they must be available in adequate numbers at the proper time.

The procedure for evacuating the plant and moving employees to designated shelter areas outside of the plant should, like other employee emergency activities, be the subject of periodic drills and exercises.

PLANT POLICE PROTECTION

Many food plants have a guard or security force in existence. Whether the force is composed of one individual or a sizable group, it probably will need to be expanded for emergencies by the addition of trained auxiliaries. In smaller companies, which have no peacetime security problems, someone should be designated to head the police service in emergencies.

The emergency security function includes the protection of personnel and property, protection of food stocks, prevention of panic and looting, and assistance in the effective operation of other emergency services.



The food processing industry—because of the characteristics of the manufacturing processes—is extremely vulnerable to chemical or biological warfare. Hence, one of the major police functions will be the prevention of subversive operations and infiltration of the plant by enemy agents. The emergency plan should call for close attention to effective screening of personnel, control of entrances and exits, protective barriers and proper lighting. While protection against enemy agents is primarily the task of the Federal Government, there is much which the industry can do to protect itself.

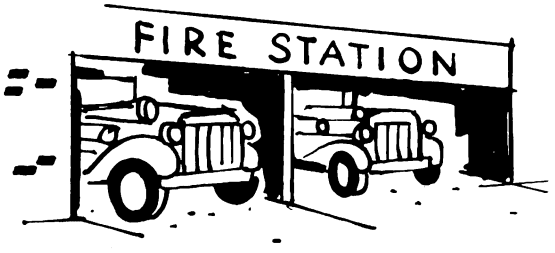
Panic and hysteria may accompany a civil defense emergency. These can be prevented by firm, confident leadership. Employees must know what to expect in an emergency and they must have competent, understanding guidance. This is true in the plant shutdown

procedures, movement of personnel to shelters, and during shelter occupancy itself. At least one person trained in police functions should be assigned to each shelter to maintain order, enforce regulations, and otherwise assist the shelter manager.

Moreover, the entire food industry is vulnerable from another standpoint—possession of consumable food which may be the target of looting. Local law enforcement agencies will do what they can to protect food supplies, but their forces may be too thinly spread to meet all needs. Food companies themselves will have to assume the initial responsibility for protection of their products as well as their facilities. Therefore, plans should be made to augment plant police personnel and enroll them as auxiliaries to local law enforcement agencies.

While other plant protective groups will share the responsibility for avoiding panic through good organization and effective leadership, they will look to the plant police to provide the authority and assistance necessary to keep emergency activities proceeding smoothly.

PLANT FIRE CONTROL



The plant needs trained personnel to handle fire and decontamination problems without relying on community fire departments. Demands upon municipal firemen in a damaged area are almost certain to be greater than they can handle.

Guidance from municipal fire officials regarding acquisition of emergency equipment will be valuable. The plant's emergency fire personnel should be assigned the responsibility of checking the equipment periodically and keeping it in working condition.

Firefighting is an activity in which a group of neighboring plants can develop effective industrial mutual-aid agreements for civil defense. Combining the emergency firefighting capabilities of a number of plants will provide more protection for each of them and more effective equipment at less cost per company.

One of the best fire control methods, of course, is fire prevention. The plant's emergency fire service should establish a companywide fire prevention program, and solicit cooperation of all employees in regular inspections and fire drills. Also, preventive measures such as storing flammable materials in underground tanks reduce the likelihood of fires.

The responsibilities of the emergency fire service will not be limited to minimizing the threat of fire and to emergency firefighting. The service can be responsible also for establishing fire regulations in company shelters, and making periodic inspections of them. An appropriate number of fire-trained personnel should be assigned to each shelter area to prevent and control fire during shelter occupancy.

Decontamination of radioactive areas and objects often can best be accomplished by use of fire equipment and water. Consequently, the fire service also should be trained and equipped to carry out this function.

FIRST AID AND MEDICAL CARE

In an industrial disaster, prompt and efficient first aid and medical attention for the injured transcends any other activity except preventing the further spread of the disaster. The plant first aid and medical staff need a workable plan for dealing with both peacetime and wartime disasters.

The service should be organized so that its plan for civil defense emergencies is merely an expansion of its plan for dealing with peacetime disasters. Plants which have no disaster plan would do well to provide a plan for meeting peacetime disasters; then as soon as possible expand it into a full-scale plan for medical self-help in a national emergency.

Members of the service, especially the auxiliaries, should receive suitable training in first aid and medical self-help skills, including how to deal with fallout and biological and chemical warfare agents. New and improved courses in these skills are available from local civil defense directors.

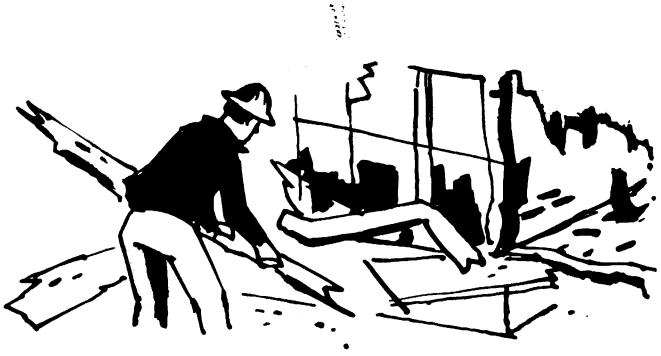
The service should be organized in teams to carry out specific emergency functions. First aid stations need to be established as treatment centers and assembly points for first aid workers and other medical assistants. "Dry runs" should be conducted periodically under conditions which are as realistic as possible.

It must be emphasized that the responsibilities of the first aid and medical personnel do not come to an end once employees are installed in shelters. Maintaining health and preventing disease in congested shelter living will be critical, and the plan must insure that qualified members of the service are on duty in each shelter.

The plan should include early inventory of the plant's medical and surgical supplies, equipment and facilities. Such items should be increased as necessary to meet at least the minimum estimated disaster needs.

Cooperation in the first aid and medical plan must be guaranteed by top management. It must be coordinated with other emergency services, with the community civil defense plan and, if possible, with similar plans of neighboring plants.

RESCUE OPERATIONS



The function of rescue operations is to be prepared to save any plant employees who might become endangered by disaster.

A company's most valuable resource is its personnel. So highly integrated is the work of the first aid and rescue teams that it is preferable to have these functions combined or members of the teams trained in both skills.

Rescue teams should be given standard rescue training, augmented by training in special skills which may be required by the nature of the plant's operation. There are a number of civil defense rescue schools, and many community rescue teams are adequately equipped and trained to provide excellent instructions for a company's rescue service.

The functions of the rescue service must be coordinated closely with police and fire, as well as first aid and medical service. In this area also, a plant may benefit significantly by joining neighboring companies in industrial mutual aid associations. Regular drills will be needed to perfect techniques.

RADIOLOGICAL DEFENSE

Every food plant should have personnel trained in radiological monitoring and defense. Each plant, warehouse or office should train one or more radiological monitoring specialists or teams to be responsible for determining radioactive fallout intensity.

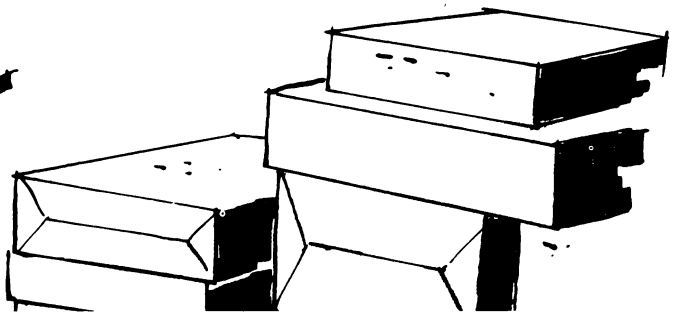
A radiological monitoring team should be assigned to duty in each shelter area. Public shelters in buildings that have been stocked by the Federal Government already contain radiological monitoring instruments. In addition to monitoring fallout for the safety of personnel, the radiological monitoring teams can assist in insuring the safety of all food products.

If feasible, individuals selected for key radiological monitoring assignments should be sent to the Office of Civil Defense radiological defense training schools, preferably to a school for instructors so that they can train other radiological monitors in both the plant and the community.

Civil defense officials will furnish guidance on the amount and type of equipment which plant civil defense coordinators will need in order to maintain an emergency monitoring capability.

Employees selected to be monitors should complete the monitor training course recommended by OCD, or its equivalent. All employees should be educated regarding the hazards of fallout, the procedures for individual and collective protection against those hazards, and, if appropriate, should be informed of the availability of home monitoring equipment, and instructed in its use.

Food plant managers have a special radiological defense problem not shared by most industries. Contrary to the majority of industries, food processors deal with raw materials, processes and products that are



highly vulnerable to radiological fallout. Most industrial raw materials and products that have become contaminated by fallout can be decontaminated and restored to a usable state. But heavy contamination of food products or raw materials may leave part of it unfit for consumption, thus reducing the supply.

Food materials and products which can be kept from direct contact with radioactive particles will be safe for consumption. Radioactive rays penetrating food containers will not damage the food itself. It is only when radioactive particles become mixed in the food, that it becomes dangerous to eat or drink.

Canned foods, and foods stored in refrigerated warehouses or in any nonporous containers thus would be free from radioactivity. But they can easily become contaminated in the opening of the containers unless the containers have been decontaminated.

Since cooking does not eliminate radioactivity, the same amount of protection will have to be provided for raw food as for processed foods.

Radioactive iodine and strontium, particularly iodine 131 and strontium 90, will present problems to food planners after a nuclear attack. Determination of allowable levels in food will be the responsibility of the Federal Government.

A potentially dangerous source of radioactive intake post-attack could be from leafy vegetables and similar foods which might be contaminated by fallout particles. Food companies engaged in the processing of vegetables, grains and other foods which may have become contaminated by fallout should be especially careful, and be prepared to monitor them for radioactive particles adhering to the food surfaces. In many cases, decontamination can be accomplished by thorough washing.

Contamination of water supplies is another potential radiological hazard. Water, like food, will not become contaminated by radiation, but it may become dangerous to drink if too many radioactive particles fall into it. While this danger may be only temporary because radioactive particles tend to sink to the bottom, it would be far better to take steps to insure a safe water supply, such as from an underground well.

Since there are few food processes that are not dependent upon potable water, food plant managers should give serious thought to both water storage facilities and emergency water supplies. Civil defense officials have warned that every family and every community shelter should have an emergency water supply sufficient to last two weeks following an emergency. If it is possible, food plants should also arrange for a safe emergency water supply. Those plants with wells available have a valuable emergency resource if they provide for power for the operation of pumps.

EMPLOYEE WELFARE

As part of a company's efforts to safeguard its employees, a plant welfare group should be organized to plan for the workers' needs during and following an emergency.

Many companies are establishing welfare service groups and are planning for their emergency use. Preparations by industry in this area cover the assistance of employees during the time they may be in shelter as well as providing accelerated aid to employees after they emerge from shelter.

Personnel planning must include means for obtaining news from the outside. and spiritual guidance for those who request it. Other assistance to employees may include food distribution, rebuilding or repairing employees' homes, providing clothing, loans, and such other aid as the company may want to make available.

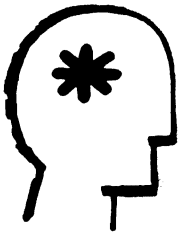
Virtually all local governments provide welfare services. These are supplemented and strengthened in

emergency by organizations such as the American Red Cross, the Salvation Army, and many other groups.

The company welfare program can be coordinated with the community welfare program and those of neighboring plants. A close working relationship between these groups will not only enhance the training program for welfare workers but will also allow better service to employees of all companies concerned and the citizens of the community in event of an emergency.

It is clear that a plant welfare program will not only serve to save the lives of employees, but will go far in building and maintaining an exceptionally high level of morale in the plant workforce.

ANTI-PANIC PRECAUTIONS



A company that plans only for the physical well-being of its employees in an emergency is doing only half the job. There should also be a positive, organized program for preventing or suppressing panic and hysteria while people are moving to shelters and during shelter occupancy.

Panic and hysteria feed upon the unknown and are sustained by ineffective or uncertain leadership. It is of basic importance that everyone understands the risks and the responsibilities individual citizens must assume so that they will survive and recover. The first step in the prevention of panic is a workable company emergency plan and enough trained leaders to put the plan into operation. The ability of the emergency services to perform their duties quickly and efficiently will automatically create a cooperative, orderly response from other employees.

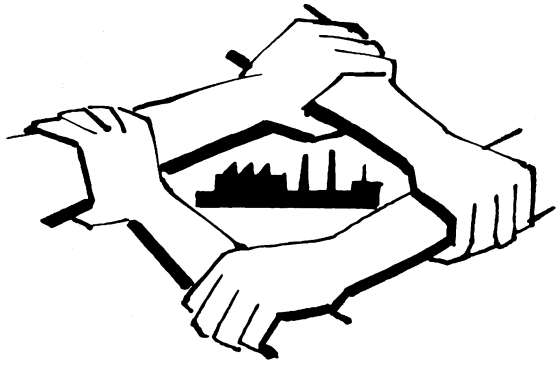
Crisp, firm and understanding leadership when the warning sounds, during the shut-down processes and orderly movement of employees to shelter, and in the shelter, will tend to minimize the threat of panic. First aid, medical and police personnel should be schooled in tactics that will suppress hysteria whenever it arises.

Plans for preventing panic should begin long before the warning sounds. Begin immediately with a comprehensive indoctrination program to inform and educate all employees on what to expect in the event of attack. A thorough understanding of the threat, protective measures which have been taken by the plant's emergency organizations, and protective measures which each individual can take for himself both at work and at home will dispel many of the fears and doubts which otherwise may be expected to arise in a civil defense emergency.

Fear for their own safety is one of two thoughts uppermost in everyone's mind in an emergency. The other is concern for the safety of their families. Action by the company to inform and educate employees regarding the local civil defense plan and how it is designed to protect employees' families, together with steps which employees should take to prepare their families and homes for survival, will be vital in eliminating fear and preventing panic. Insofar as possible, plans should be made for emergency communication with shelter areas housing employees' families. Every possible effort should be made to give confined employees up-to-date information on the welfare of their own families and the general situation outside the company's shelters.

A continuing flow of news from the world outside will be a vital morale factor during shelter occupancy. Equally important will be an organized program of activities, effectively administered by the shelter manager and his assistants. The program should combine recreational activities and training to orient employees to the situation they will meet when they leave the shelters.

INDUSTRIAL MUTUAL AID ASSOCIATIONS



Reference has been made in many of the planning sections to the organization of industrial mutual aid associations with neighboring plants. Few companies or plants are able to provide all the services and equipment needed to meet a full-scale emergency in peacetime. In wartime disaster, the problem would be magnified. The logical recourse is to join other facilities in the vicinity—under proper coordination with various departments of local government—in formation of a mutual aid association which will insure that emergency training and assistance can be mutually provided for the benefit of all plants.

A mutual aid association is simply an organization of industrial facilities in a particular area, united by voluntary agreement to assist each other in an emergency with equipment and manpower as needed to save lives and protect property.

Industrial mutual aid associations are not new, but they are especially applicable to civil defense because of their value in dealing with peacetime and wartime problems. Experience gained in working together and helping each other in peacetime disaster is the best possible training for a national emergency.

In addition to the interchange of equipment, manpower and other resources in an emergency, mutual aid associations allow companies to economize in their civil defense training and planning. For instance, a rescue course might be taught at one facility, serving personnel of all the companies. In return, all firefighting may be taught at another plant. Such an arrangement would greatly reduce the duplication of effort, training materials and instructor personnel.

Basic to the organization and operation of an industrial mutual aid association is the cataloging of supplies of firefighting materials and equipment, medical supplies, rescue items, and other emergency supplies and equipment, so that each member of the mutual aid group knows what is available.

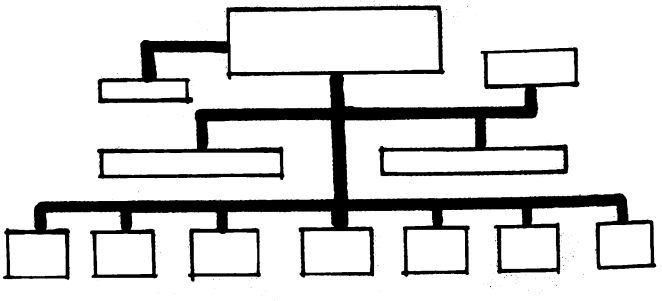
Since the planning of a mutual aid association is a significant aspect of the emergency plan of local governments, the proper governmental officials should be included in all phases of planning. Various governmental departments can assist by providing instruction and training for plant protective groups.

Companies appropriately located to form a mutual aid association should consult local civil defense officials immediately for guidance. It will be one of the best possible steps they can take to protect themselves in a national emergency or peacetime disasters.

CONTINUITY OF MANAGEMENT

Next to protecting personnel and property, a food plant's most important industrial survival measure is insuring that essential activities will continue after the emergency. Functions need to be examined in the light of the assumed threat, and each department head asked to formulate detailed solutions to the problems involved in continuing his function in the post-attack period.

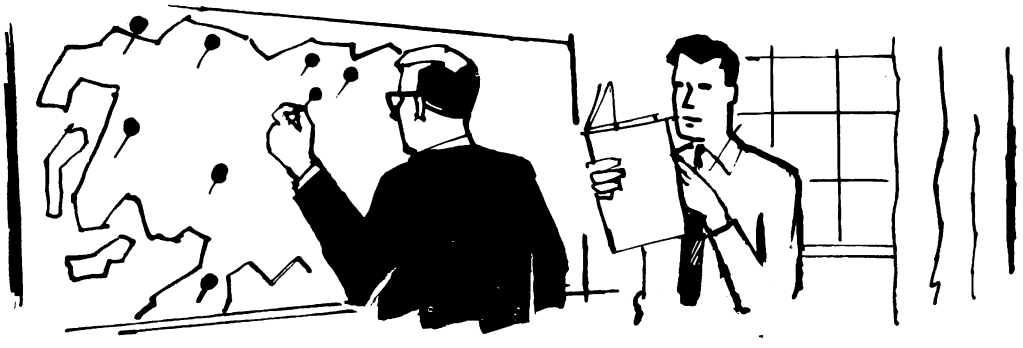
In order that officials have appropriate legal authority to act in an emergency, functions should be reviewed to determine whether they would be essential.



While many peacetime functions may be found unnecessary in an emergency, others will become extremely vital and more complicated in their execution. If necessary, by-laws may need to be amended to provide authority for executive succession and reestablishment of the company with substitute officers, pending elections by stockholders.

Plans should include an adequate line of succession among company officials. Replacements should be designated in the order of succession for each key position, so that the surviving person highest on the list could direct the function following an attack. Lines of succession should have sufficient depth to insure continued leadership under the most severe conditions. If there are gaps in the leadership, then the entire objective of emergency planning will have been defeated.

ALTERNATE HEADQUARTERS AND KEY OFFICE LOCATIONS



Alternate corporate or plant headquarters should be established—preferably at two or more remote locations—so that officials will have a safe place from which to operate the company business. Often it is possible to establish these alternate headquarters in existing company installations outside probable target areas.

The objective of this program is the development of a capacity to manage the company from any one of these alternate headquarters by transfer or delegation of management authority during the survival and early recovery periods.

The alternate headquarters should have adequate fallout shelter, stocked and ready, and should be equipped with communications, essential records, living quarters and other requirements for prolonged operation under emergency conditions. When the facilities are completed, selected company officials need to participate in training and drills necessary to develop and maintain a flexible operating capability.

EMPLOYEE REPORTING CENTERS

All employees need to be told where to report after an attack, to get information about returning to work and to receive financial help or special assistance.

Key personnel who live in areas which are likely to escape severe damage may be designated to provide such advice. Essential employee records should be maintained at these locations, and arrangements made for the establishment of priority telephone service in an emergency.

The cost of this type of planning is trivial compared

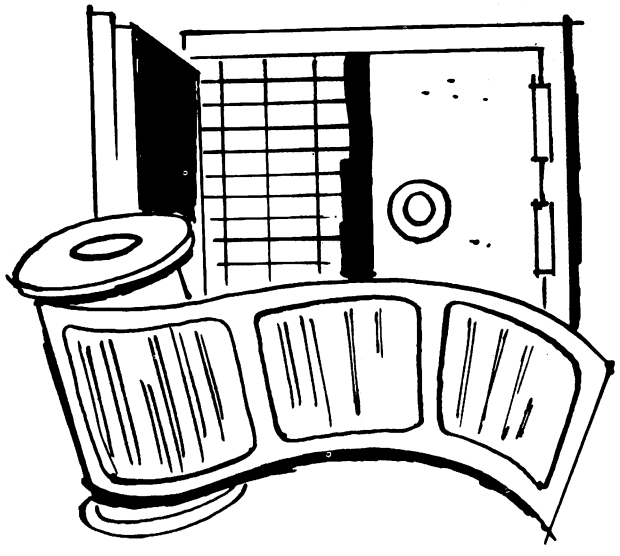
with the benefits from recovery-planning and rehabilitation activities which can be effectively conducted from these centers during or after the emergency.

Some companies have stored "disaster checks" in the emergency reporting centers for use by employees who report to these centers following an attack. The checks could be used to reimburse workers for work done, or provide aid until the plant can resume operations.

When the reporting centers are designated and prepared for emergency operation, the company's emergency information and training program should educate employees on the importance of the centers to their welfare. Instruct workers how to reach designated centers or alternates, depending upon post-attack conditions.

Such centers will contribute to community survival and rehabilitation plans as well as to employee welfare. If properly coordinated with community plans and mutual aid associations, they will serve as rallying points for available manpower in the community.

PROTECTING VITAL RECORDS



One of the critical factors in the continuity of plant management and operations will be the establishment of plans and mechanics for protecting vital documents such as records of ownership, lists of stockholders, finances, operating procedures, key processes, sources of prime raw materials and personnel. In view of modern industrial complexities, the ability of most companies to rebound from a nuclear attack would be severely handicapped if the documentary foundation for all activities were lost.

The principal contributing factors to prudent records protection are alert, trained office personnel, and dispersal of duplicate records in vaults or similar well-protected areas. Office personnel should be thoroughly trained in the steps which the company's civil defense organization has designed for records protection.

Because so many records are needed in day-to-day operations, duplicate critical records may be stored in safe locations far removed from the main office. The size of the records, the volume to be duplicated, the intervals at which duplication is required, and the cost will all determine how each food plant will want to duplicate its records. It should be kept in mind that storage space in emergency locations may become a problem, consequently the duplicated records should be maintained in the most compact form possible. Microfilm is the preferable process for large volumes of material because it requires the least space. For example, some 5,000 sheets of letter-size paper can be duplicated on a pocket-sized roll of film. The microfilmed replicas of the documents are also desirable because they have legal value.

Dispersal of the records through storage in one isolated or several widely separated locations is a simple, yet effective, technique which is practiced by many companies. The records might be kept in branch offices, out-of-town banks, or even the homes of employees.

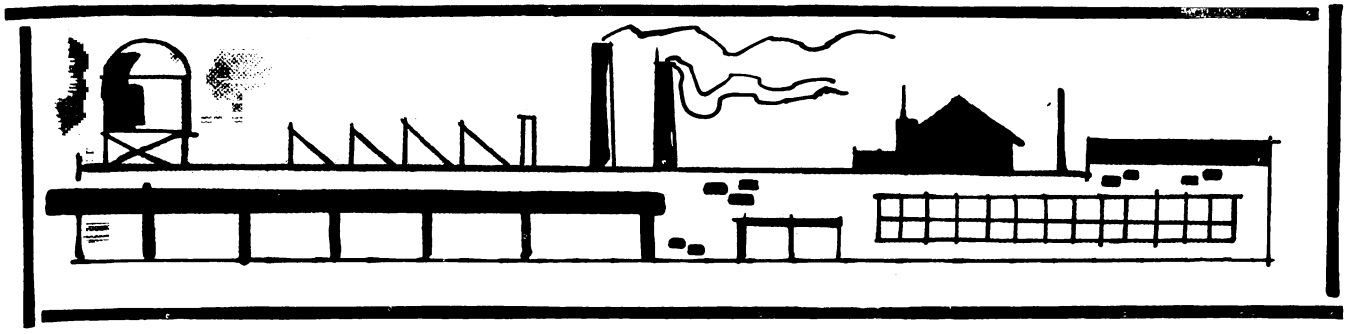
A high degree of safety also may be obtained by storing the records in vaults, or in safes on the premises. Vault storage furnishes adequate protection in most instances, except in an area of total destruction.

Companies which do not have their own record storage facilities should consider renting suitable space from record storage companies.

REDUCING VULNERABILITY OF FOOD FACILITIES

Efforts to reduce the vulnerability of a food plant to attack must be preceded by a careful, informed assessment of that vulnerability. Such assessment should take into account the threat posed by nuclear weapons to the company's facilities and personnel, plus any specific company processes or characteristics which might create additional hazards, such as explosion or fire.

When the vulnerability has been assessed, company officials should determine what can be done about reducing it. Specific hazards need to be weighed in relation to the cost of removing them, and their impor-



tance to the plant processes. In the case of food plants, careful assessment should be made of the vulnerability of raw and processed materials, and all possible efforts should be made to protect them against attack.

Actual reduction of vulnerability may be accomplished in several ways. These include eliminating or minimizing as many hazards as possible, dispersing new installations, providing protective construction and special arrangements to shield food materials from the effects of an attack.

If a company is located in a likely target area, the plant manager should be alert to relocating at least certain phases of the operation to less vulnerable areas. Dispersal may have other advantages since it is likely that many food plants could operate in non-target areas without greatly increasing costs.

PROTECTIVE CONSTRUCTION

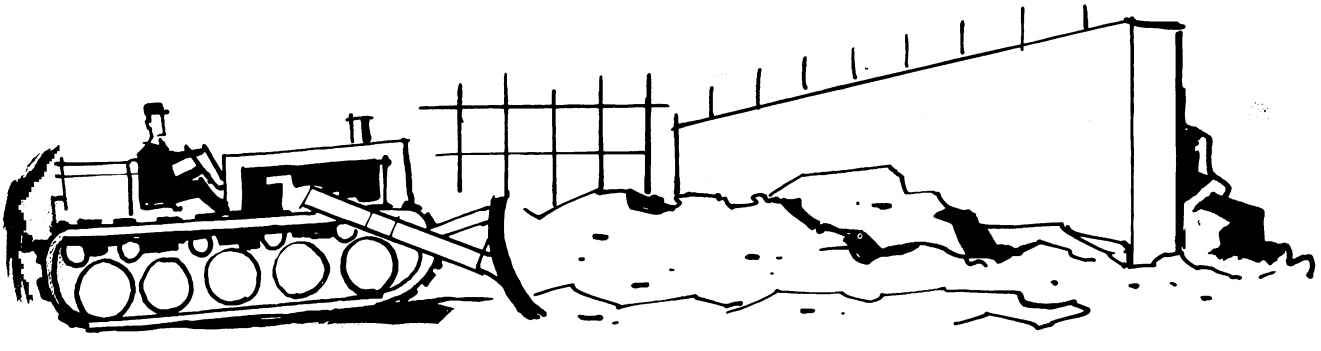
Protective construction is a major factor in reduction of food plant vulnerability. It might be the means by which the personnel, plant and equipment survive the blast, fire and radiological effects of a nuclear explosion.

The term "protective construction" has been used in many senses. As used here, the term means certain design precautions taken to increase the survivability of occupants and contents of facilities subjected to the effects of a nuclear detonation. For example, a fallout shelter is a protective structure which protects the occupants from the effects of fallout radiation. In addition to radiation protection, if the plant manager determines that the nuclear threat includes blast and fire, then the protective structure should be specifically designed to resist these effects also.

Even though protective construction may in some instances involve significant expense, plant officials should consider it in connection with expansion of existing plants or construction of new facilities. It will be much easier on the budget if it is incorporated into the regular construction program.

The Office of Civil Defense has sponsored an extensive professional development program to acquaint architects and engineers with the techniques of protective construction. A directory of those qualified in fallout shelter design and analysis is available. Any plant planning an addition, rehabilitation, or new construction should utilize a design firm which has a qualified analyst on their staff or available as a consultant.

The Office of Civil Defense has published a number of technical guides dealing with radiation and blast protection. It is actively engaged in a number of studies designed to develop new techniques and to produce cost data for various degrees of protection, both for new construction and for modifying existing structures.

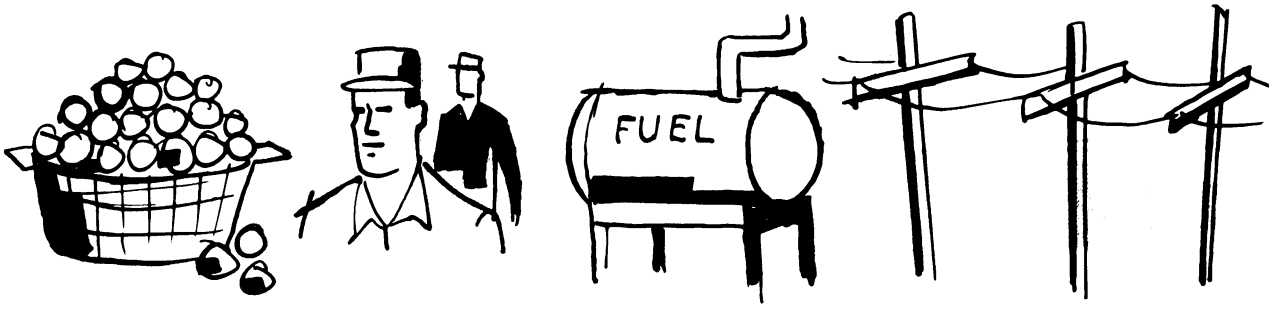


In modifying existing facilities, a number of measures may be taken to reduce the vulnerability of personnel and the plant to fallout radiation. These include blocking windows, providing additional wall and roof mass, selective use of space, and similar measures. However, modifying existing space to resist blast effects requires very careful study, because of the cost involved.

There is much evidence that the cost of providing radiation protection in new construction can compare favorably with the cost of the same space without protection. For facilities requiring special features to resist blast and fire, initial costs are higher. Blast and fire protection often imply underground construction, however, and long-term savings may be realized through lowered maintenance, heating, and ventilating costs.

As a minimum, protective construction should provide officially approved fallout protection for all plant personnel. It is of vital importance that fallout protection be provided for those who might be required to remain at certain locations to carry out emergency functions. Since the most practical and effective shelters are underground, emphasis should be placed upon underground or partly underground construction.

PLANNING AVAILABILITY OF SUPPORTING RESOURCES



The major concern of the food plant manager after an attack will be to get his plant back into production as quickly as possible. Among all of the Nation's pressing post-attack requirements, food is sure to be one of the most urgent. The ability of food plants to continue or resume production will be a significant contribution to the recovery of their own community and the Nation.

Attention should be given to the resources necessary for resumption of production. These will include raw materials, water, personnel, fuel, power, equipment and repair parts. The effectiveness of the plant's post-attack operations will depend to a great extent upon the ability of the management to establish reserves—even stockpiling some of these resources—or to locate alternate emergency sources.

Non-perishable raw materials should be stockpiled, if feasible, in any suitable storage space. In addition, several sources of materials should be asked to plan for early delivery in the post-attack period. Emergency sources should be selected for their geographical dispersion so as to increase the possibility that at least one of them will be in operation following an attack.

Manpower may not be a problem if a company has provided good emergency protection for its employees. It must be remembered, however, that there will be demands for personnel to help with community projects and in other plants. This will be especially true of specialists whose skills may be vitally needed by the community. In any event, the food plant manager must plan for carrying on production with a skeleton staff, or with untrained workers. He should have in mind some sources from which personnel could be recruited in an emergency. If the plant is participating in a mutual aid association, provisions probably will have been made for the interchange of personnel between plants as necessary. Also consider the probability that working hours in some food plants will have to be expanded—perhaps around the clock—to meet urgent food needs.

Emergency power is likely to be a problem. Damage to power facilities may render many plants inoperative. The power companies have organized interconnecting systems to provide alternate power sources in an emergency. Plant managers should also consider the possibility of purchasing standby generating equipment, which would be the best guarantee of emergency power. Fuel will be urgently needed for operating generators and emergency heating equipment. There should be an adequate emergency supply on hand.

The critical nature of water in the food industry

has already been discussed. As in the case of power, water will be essential to emergency operations. Managers should try to develop alternate emergency sources of water, sources that will be protected from contamination by radioactive fallout. If the plant has storage tanks, they should always be kept filled. If wells are available, plant managers should see that there is no local contamination, since they will be an excellent source of emergency water.

Another requirement for post-attack operations probably will be emergency funds. Normal banking services may be disrupted. Plant managers should appraise the company's cash position together with the location of its bank accounts. It may be advantageous to maintain accounts or establish lines of credit at scattered locations, to insure the economic stability of the company in the immediate post-attack period.

All essential industries are urged by the Federal Government to prepare for survival and continuity of production and service. All banks are inspected regularly for civil defense preparedness. The communications, power and fuel industries, among others, are making commendable progress in achieving readiness for national emergency.

In matters of emergency resources and claimancy, food companies should remember that USDA performs a dual role. While it will be a resource agency, passing judgment on food claims, it will simultaneously be a claimant agency for all resources necessary to food and agriculture's emergency needs.

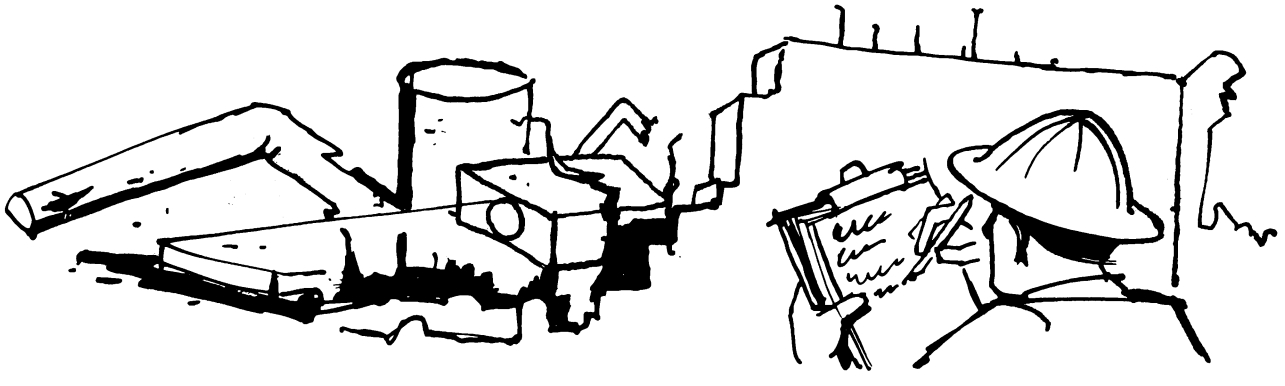
DAMAGE ANALYSIS AND REPORTING

In order to make the Nation's emergency food plan effective, local, State and Federal governments will have a vital need for all available post-attack information on food stocks, raw materials and productive capacity. The amount of food that survives and the immediate production and processing capability of food plants will form the basis for many critical decisions concerning the processing and distribution of food, and the priorities which are placed upon rehabilitation and restoration of the industry.

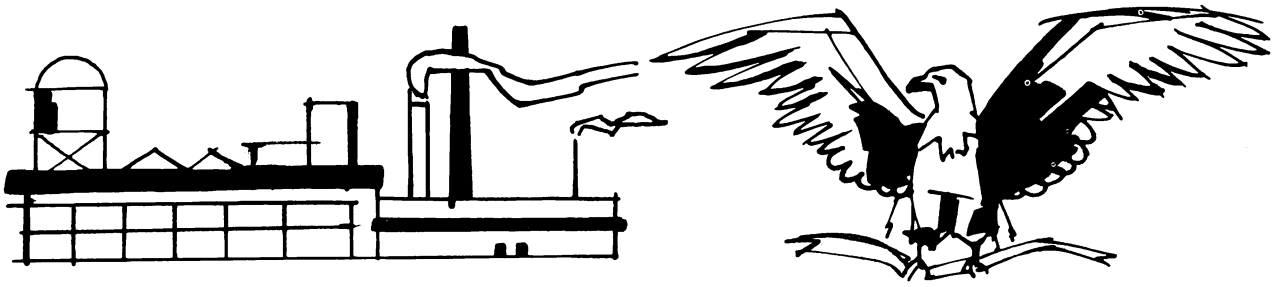
As a part of his emergency plan, the plant manager should already have established close communication with local civil defense officials and with the USDA County Defense Board. Immediately following an attack, he should use these channels to report the damage which his plant has suffered, his estimated production capacity, his inventories of processed and unprocessed food, and his requirements for continuing or increasing production. He also should consider his plant's capability for production of commodities which are not normally included in its production schedule.

The information which individual plant managers furnish to the USDA County Defense Boards, together with similar information compiled from other plants in the area, will be assessed at all governmental levels and used in making the many decisions regarding food production and distribution. It will help determine which plants need to be rehabilitated most rapidly, and form the basis for allotment of resources and raw materials.

In small plants, it is likely that thorough damage analysis and report can be made very quickly, once the fallout situation permits personnel to leave shelter. In the larger plants, the damage reporting technique will require more advanced planning, and the planning and operational responsibility should be assigned to a team which is an integral part of the company's emergency organization.



PART III. INDUSTRY-GOVERNMENT COOPERATION FOR COMMUNITY SURVIVAL



ASSISTANCE TO GOVERNMENT

Since food will be one of the most critical requirements in national recovery following attack, it is apparent that close cooperation between Government and industry will be necessary to make the emergency food program work.

For this reason, the responsibility is greater upon food plants to make prudent emergency plans and preparations than it is for other less critical industries. The U.S. Department of Agriculture and other local, State and Federal agencies have comprehensive emergency plans ready on a standby basis or in the process of development to deal with emergency food problems. But these plans cannot succeed without the active cooperation of the food industry which will be in an emergency—as in peacetime—the Nation's only source of food.

By following the steps outlined in this Guide, food plant officials can provide an example of organizational leadership to other industries in their communities. Training facilities can be offered to community officials for use by various groups. Plant personnel who are trained in special emergency skills can assist community emergency services as instructors or as civil defense auxiliaries. The food industry's public information media can be offered to civil defense officials and USDA Defense Boards as channels for dissemination of civil defense information.

In the final analysis, neither the Government nor industry will be able to solve the Nation's emergency food problems alone. Each must bring special skills and ability to a joint solution. This means that there must be a constant two-way flow of information between Government and industry. In the case of the food industry, it means that each food plant should be in close communication with both community civil defense officials and USDA State and County Defense Boards. This liaison should not await an emergency; it should begin immediately.

THE ROLE OF TRADE ASSOCIATIONS

One of the best mechanisms for facilitating civil defense planning and emergency cooperation between Government and industry is the trade association, since one of the trade association's functions is furnishing a two-way channel of communication between Government and industry. This communication channel will be utilized fully in emergency planning and operations.

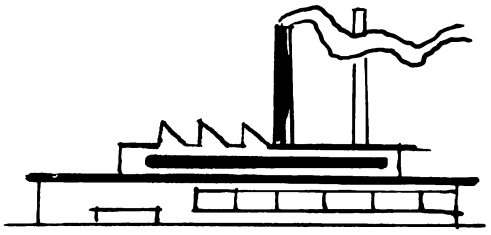
Because of the leadership which trade associations exert in their respective industries, they can facilitate and encourage emergency planning. This is true in the food industry associations, as in other industries.

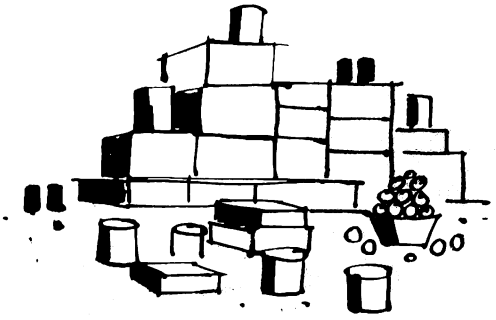
The associations can furnish individual members with authoritative emergency information from appropriate government sources. They can furnish governments at all levels with sources of expertise and special skills in emergency planning and preparations which are found among members' firms.

Through the organization of committees to deal effectively with emergency planning and preparedness problems, the trade associations can encourage and assist their members to begin making individual plans and preparations. It must be remembered, however, that trade associations are responsive to the members; thus it is likely that the association's degree of interest in civil defense planning will be dependent upon the interest displayed by members.

Food plant managers who are concerned about their emergency preparations and who feel they need help should call upon association leaders for assistance. The results will be beneficial to individual members, to the industry and to the national welfare.

PART IV. OPERATIONS DURING SURVIVAL PERIOD





IMMEDIATE POST-ATTACK ACTIONS

It has already been pointed out that no one can feed the Nation in a national emergency except those who are in the business of feeding it every day. Even in the immediate post-attack emergency, normal channels should be utilized as much as possible to get the job done. It is obvious, however, that the post-attack situation will be far from normal and that considerable assistance will be necessary from local, State and Federal governments to keep the food supply moving. This is why there is an emergency food plan.

As its contribution to recovery and rehabilitation of the Nation, the food industry should activate all of its emergency plans as soon as possible after the attack. Food associations, industrial mutual aid groups and individual plants should be prepared to take steps immediately to resume production in keeping with the Nation's post-attack needs. Everyone in the food industry is cognizant of the essential nature of various foods. Some foods which find ready markets in today's economy may have to give way temporarily to more essential foods. Sophisticated packaging may need to give way to crude forms which could more readily fill post-attack needs.

One of the foremost requirements for the success of the emergency food program will be an accurate analysis of attack damage by local, State and Federal governments. The analysis will depend directly upon the information furnished by food plants. Precise assessment of damage and capability to continue production in the immediate post-attack period is one of the most valuable contributions which food plants can make to post-attack recovery.

Food production and distribution under the stresses and strains which are certain to be imposed by the post-attack environment will require strength of will and ingenuity on the part of farmers, food managers and personnel. There will no doubt be many instances in which it will be easier to quit than to continue. But the stakes are high—the continuation of our free enterprise system—and they should be incentive enough to keep the industry going even in the face of the tremendous adversities it may face.

Procedures for utilizing and distributing the food in the post-attack period will be determined by the emergency food plan. Guidance and assistance in meeting emergency requirements will be available to the food plants from local, State and Federal governments.

ECONOMIC STABILIZATION

An effective national rehabilitation effort will be dependent to a great extent upon the degree of stability achieved by the post-attack economy. Insofar as possible, efforts will be made to preserve normal money and credit systems, and controls are planned for wages, prices, rents, and utilization and distribution of food.

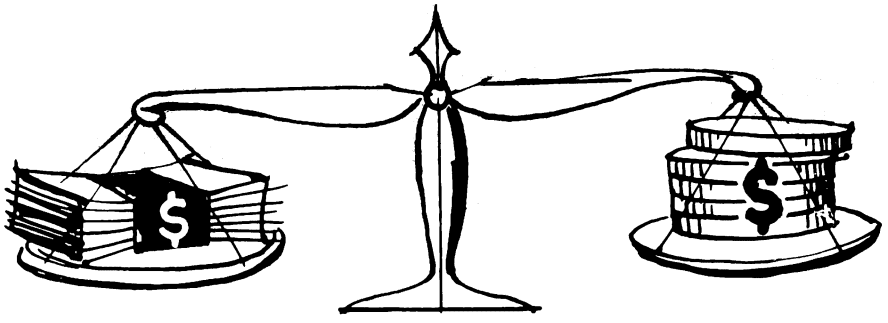
Food rationing will be the responsibility of State and local governments, with guidance and counsel from the U.S. Department of Agriculture and the Office of Emergency Planning. Guidance for the food program will come from the USDA and many decisions will be based on the National Emergency Food Consumption Standard. This standard will furnish the basis for many post-attack governmental decisions by food management officials as they continually appraise the post-attack food situation.

Sales of most foods will need to be prohibited temporarily in the early post-attack period. These deci-

sions and others will be made by food management officials who will maintain direct communication with the food industry through trade associations at the national level and through USDA State and County Defense Boards at the State and local levels.

Food plants can contribute most to a stable post-attack economy by making internal preparations which will insure economic stability for themselves and their employees. Suggested procedures, as outlined earlier, include arrangement of emergency company funds or credit, and providing emergency paychecks or credit arrangements for employees.

Employees should be encouraged to make prudent individual and family preparations for an emergency. Families who are able to solve their post-attack housing and subsistence problems will make a significant contribution to a more stable economy.



APPENDIX

INDUSTRY DEFENSE CHECKLIST

Steps Which Food Plant Managers Should Take To Be Prepared for Survival in a National Emergency

- ☐ Get in touch with your local civil defense director.
- ☐ Develop a civil defense plan for your plant.
- ☐ Establish an effective warning and communication system.
- ☐ Train employees in emergency shutdown and start-up procedures.
- ☐ Provide adequate, stocked fallout shelter for all employees.
- ☐ See that your shelters are staffed by trained shelter managers.
- ☐ Organize and train your plant's emergency protective services.
- ☐ Give special attention to your radiological defense service.
- ☐ Develop a positive leadership and education program to avoid panic.
- ☐ Take steps to protect against sabotage.
- ☐ Take steps to insure the continuity of management in an emergency.
- ☐ Provide alternate headquarters locations and employee reporting centers.
- ☐ Provide protection for vital records.
- ☐ Tell your employees about the company civil defense plan.
- ☐ Cooperate with other plants in organizing mutual aid associations.
- ☐ Plan alternate emergency sources of supporting resources.
- ☐ Be prepared to analyze and report plant damage and capability accurately.
- ☐ Have a general understanding of emergency food management plans.
- ☐ Offer your cooperation to governments in the formulation and conduct of emergency food plans.
- ☐ When in doubt, consult local, State or Federal civil defense officials and/or USDA State or County Defense Boards.

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Continuity of Corporate Management in Event of Nuclear Attack.—OCD, Department of Defense. An 89-page special report by the American Society of Corporate Secretaries. Describes continuity of management measures, legal problems, suggested bylaws and board resolutions and a suggested model Business Corporation Act. Includes a section describing procedures for overall industrial civil defense planning.*

The Economy Can Survive Nuclear Attack.—Fortune, Vol. LXIV, No. 5, November 1961, 540 North Michigan Avenue, Chicago 11, Ill. Comprehensive illustrated article on United States economy and civil defense. Industrial aspects include Kansas plan of local businessmen to shelter people and machines in 128-acre leased salt mine, 650 feet underground. Argues for more fire and blast resistant as well as fallout shelters.

Effects of Nuclear Weapons.—Department of the Army Pamphlet 39-3, April 1962. Description of nuclear explosions and their effects. Presented for the technically trained and non-technical reader. Superintendent of Documents, Washington, D.C., 20402.

Emergency and Disaster Planning for Chemical Industries.—A 50-page manual published by the U.S. Department of Commerce which covers organization of both plant and company-wide emergency operations planning. It includes a building survey report form, emergency shutdown procedures and the effects, protective measures and estimated damage from nuclear attacks.

Fallout Protection: What to Know and Do About Nuclear Attack.—Office of Civil Defense, Department of Defense, December 1961 (H-6), 46 pages. Describes the national civil defense program, and provides information important to every citizen regarding methods of developing shelter and other civil defense techniques. Introduction by the Honorable Robert S. McNamara, Secretary of Defense.*

Family Shelter Designs.—Office of Civil Defense, Department of Defense, January 1962 (H-7). Publication of 30 pages. Contains instructions for building eight types of family fallout shelters; for use by families not having access to community shelters, or who prefer shelters in their basements or backyards.*

Food Management in a National Emergency. A Guide for Food Processors and Wholesalers (PA-572). Agricultural Marketing Service, U.S. Department of Agriculture, April 1963. A 6-page summary of industry-Government post-attack responsibilities for transporting, handling, processing, storing and distributing food.

Forty-five Rules for Making Your Plant Fire-safe During Shutdowns.—Factory Management and Maintenance, September 1954, McGraw-Hill Publishing Company, Inc., 330 West 42d Street, New York, N.Y. Outlines measures that should be taken to prevent fire during emergency shutdowns.

Guide to Developing an Industrial Disaster Medical Service.—Reprinted from April 1961 issue of Archives of Environmental Health published by American Medical Association. A 20-page booklet, illustrated with forms and sketches primarily developed as a questionnaire to enable industrial medical departments to evaluate their own organization and readiness status and to devise plans where inadequacies are disclosed. It covers such elements as supplies, records, personnel, communications and casualty care.*

Industrial Defense Planning Manual.—1954, 43 pages. American Iron and Steel Institute, 350 Fifth Avenue, New York, N.Y., 50 cents. Methods of pre-attack planning for industrial protection against the hazards of modern warfare.

Industrial Security—I.—Combating Subversion and Sabotage. Studies in Business Policy, No. 60, and Industrial Security II. Plant Guard Handbook, Studies in Business Policy, No. 64. National Industrial Conference Board, Inc., New York, N.Y.

Industrial Security Magazine.—This special issue for July 1962 is the official publication of the American Society for Industrial Security and is devoted exclusively to 39 articles on all aspects of industrial civil defense. Each article by an industrial executive covers a different aspect of such activities in the company in which the author is employed. A 40-point check list is printed on the inside back cover. This publication can serve as a guide, handbook or manual for all aspects of industrial civil defense planning.*

Legal Aspects of Industrial Mutual Aid.—Directorate for Industrial Participation, Office of Civil Defense, Department of Defense. A 27-page publication giving legal citations, a guide to organization and operation, and sample articles of association for such a group in an industrial neighborhood.*

Live.—Stanford Research Institute, Menlo Park, California. A 69-page handbook for employees of this organization describing plans for protection of employees and families in the SRI facilities. Also contains excellent instruction for survival in the home including emergency shelter, supplies, sanitation, first aid and decontamination.*

Medical Self-Help Training.—An administrative guide to the civil defense medical self-help training program for professional, civil defense, and educational personnel. Training for the layman in the application of proper procedures to save lives in the absence of a physician and gives guidance on nursing care.*

Nuclear Attack and Industrial Survival.—A 16-page, well-illustrated report published by the McGraw-Hill Publishing Company as an insert in 39 of their business and professional magazines. Describes effects of nuclear attack, why and how industry should plan, organize, provide shelter facilities and what is included in the recovery plan.*

Preparedness Guidelines for Emergency Savings and Loan Associations.—Federal Home Loan Bank Board, Washington, D.C. A 26-page manual outlining steps for emergency savings and loan operations including shelter, continuity of management, record preservation and alternate headquarters.*

Preparedness Program for Emergency Operation in Banking.—A 118-page reprint of five booklets prepared by the Advisory Committee on Commercial Bank Preparedness and the Banking Committee on Emergency Operations, New York, N.Y. The publication covers Organization and Administration, Personnel Protection, Continuity of Management and Alternate Headquarters, Physical Property Protection, and Duplicate or Alternate Records. Includes exhibits and examples of suggested bylaws and resolutions.*

Protection of Food and Agriculture Against Nuclear Attack.—Agriculture Handbook No. 234, Agricultural Research Service, USDA, 1962, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. 30 cents, 41 pages. Guide for agricultural leaders on defense measures which can be taken against fallout on agricultural products.

Protection of Vital Industrial Records and Documents.—OCD–DOD (TB–16–2). Recommends methods for the protection of vital records against loss in the event of an attack.*

Standards for Physical Security of Industrial and Governmental Facilities.—OCD–DOD. A manual of 44 pages which discusses sabotage and espionage, security lighting and fencing, training, pre-employment investigation, safety measures and the "how" and "why" of good security standards.*

Survival Plans Your Company Can Use.—A 6-page reprint from Nation's Business published by the Chamber of Commerce of the United States. Describes the practical steps industrial civil defense planners can take and gives actual examples of what some companies have done to meet the problems of industrial survival and recovery.*

Underground Plants for Industry.—OCD–DOD. A 109-page publication prepared by the Department of the Army, Office of the Chief of Engineers. Describes the importance and advantage of underground facilities, criteria for site selection and a list of underground sites by State, town and owner with information on geological structure, size and method of access. Costs of construction, operation and maintenance of underground versus surface facilities are discussed.*

Vulnerability of the Food Industries to Chemical, Biological and Radiological Warfare Agents.—A report to the Food and Drug Administration, Department of Health, Education, and Welfare, by the National Academy of Sciences, National Research Council, Washington, D.C., November 1955. Reprinted 1961, 156 pages. Comprehensive publication stressing need for industrial management, trade associations and public to understand serious threat to our food industries by chemical, biological and radiological warfare agents.

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*Available from local civil defense offices.

This publication supersedes Agriculture Information Bulletin No. 169, "Defense Guides for Commercial Food Facilities."

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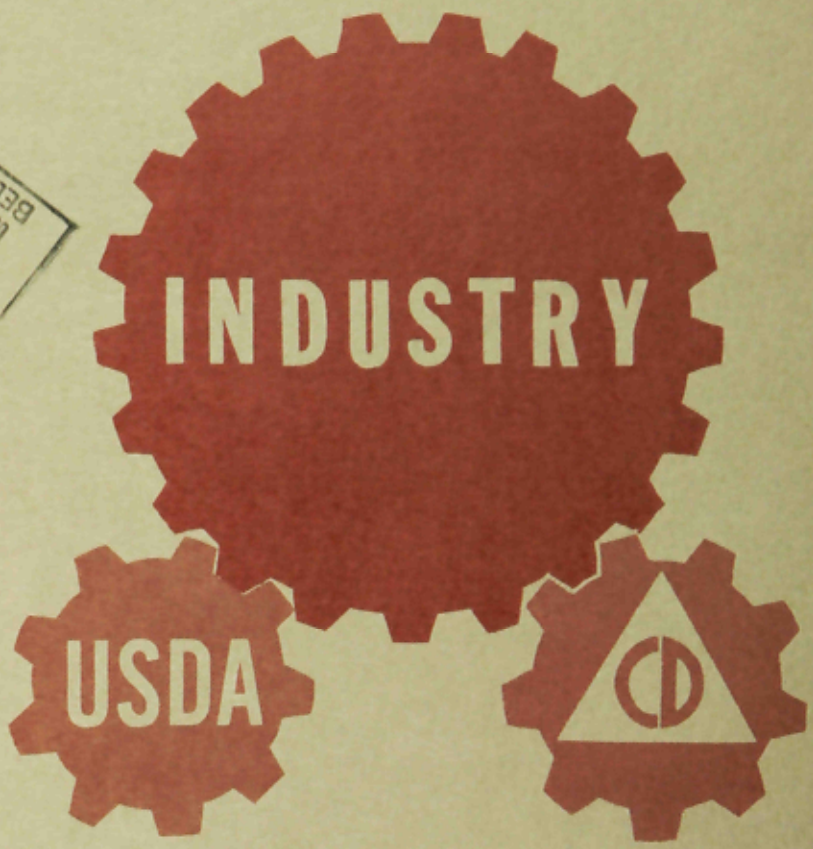

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