GUIDELINES FOR EMERGENCY PLANNING

The Dow Chemical Company
September, 1985
Second Edition

TABLE OF CONTENTS

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INTRODUCTION

For the purpose of this guideline, an emergency is defined as any unplanned course of events or natural disaster involving any Dow location or any Dow related transportation incident that requires immediate action to minimize or prevent harm to personnel, property, the public or the environment.

Emergencies can arise as a result of our own internal actions, external actions and so-called "acts of God". Dow Safety, Loss Prevention and Security programs are designed to prevent emergencies and to minimize their severity through protective measures. Timely and effective emergency measures can result in regaining control of an emergency in the shortest possible time and can minimize its impact.

The goal of emergency planning is to develop an appropriate level of preparedness and to have in place all procedures necessary to reduce the effect of the emergency.

A well organized emergency plan should provide direction to employees on who can activate the plan, the importance of rapid response, immediate actuation of the alarm, and prompt implementation of control measures. Additionally, it should provide the protocol and procedures necessary to summon support services as well as notify supervision, authorities and others who have a need to know.

Minimum Requirements For Safety, Loss Prevention and Security requires all Dow locations to have an emergency plan that:

- provides for protection of all people (Dow and non-Dow),
- provides for or has access to a firefighting organization,
- is coordinated with local community and industrial neighbors,
- covers all potential incidents relative to that location, e.g. utility loss, hazardous/toxic release, fire, explosion, civil unrest, acts of terrorism, sabotage, radiological incidents, bomb threats, natural disasters, and distribution emergencies,
- is field tested and documented at least annually.

The primary purpose of this guide is to provide all Dow locations with minimum guidelines for emergency planning.

The objectives of emergency planning are to:

a) Identify the potential internal/external conditions which could create an emergency at a given unit or a given location.

b) Develop plans, procedures and an organization to eliminate/minimize the effect of these emergencies on persons, property, neighbors, community, business operations and the environment.

c) Provide for those internal or external services necessary to control or minimize the effects of any emergency including those necessary to assure continued control and rapid recovery.

d) Provide for inter/intra departmental and total site coordination of plans.

e) Provide for coordination of plans with the community, neighbors and outside agencies.

f) Provide a communications focal point for collection and release of information internally and to the public.

g) Provide pre-planning for emergencies arising from conditions in neighboring plants and facilities.

I. Management-Employee Responsibility

Emergency planning and emergency response are a line responsibility.

1.1 The site or location manager

-- will provide the proper organization and operations necessary to control unit, site or distribution system emergency problems, 24 hours per day, seven days per week;

-- has the responsibility to ensure that written unit, site or distribution system emergency plans are formulated, communicated, tested and kept current;

-- will ensure that appropriate communications systems and procedures have been established with the local community and others who are likely to be affected by an emergency at the facility;

-- will communicate all necessary information on materials manufactured, transported, used or stored at his site to Dow employees, contract employees, customers, emergency personnel, local communities and civil authorities so they may effectively carry out their emergency planning

1.2 The Plant Superintendent/Unit Manager

-- will develop, communicate, provide training for, test and keep current, a written unit emergency plan and distribution system emergency plan for designated products;

-- will ensure that the unit plans are coordinated with the site or location plans and with those unit plans of his immediate neighbors;

-- will ensure that his people know and can effectively respond to unit emergency plans and site or location plans.

-- will train new employees immediately and retrain all employees annually on:

— unit and site emergency plans,

— procedure for reporting an emergency (fire, injury),

— the emergency situations which are likely to occur,

— basic firefighting, and

— respirator supplied air breathing systems where toxic vapors may be present.

1.3 Each Employee

-- is responsible for becoming familiar with the unit and site or location emergency plans and must know their role in an emergency.

Types of Plans

For purposes of Dow emergency planning, the three planning areas to be considered are the (1) Unit Emergency Plan, (2) Site or Location Emergency Plan and (3) Distribution System Emergency Plan. Note that it is conceivable that a single unit may comprise the total site and, therefore, the site and unit plans may be the same. All Dow (owned, rented, and leased) facilities, transportation equipment, and transportation systems (manufacturing, sales, laboratories, administration offices, warehouses, terminals, etc.) shall have appropriate unit plans, site or location plans and distribution system plans.

2.1 Unit Plans

Unit concept emergency planning begins with the local unit, building or department performing a plant and area risk evaluation and developing a written plan to cope with emergencies which might originate within or outside of that unit. Unit plans:

— must be coordinated with location plans and unit plans of its immediate neighbors (Dow and non-Dow);

— require emergency call lists (supervision, services, outside agencies, etc.) which must be up-to-date and available to those who need to know;

— must be made available to those needing them during an emergency;

— shall be reviewed at least annually and updated as necessary;

— elements of the plan should be tested at least quarterly and audited periodically by the site emergency organization.

2.2 Site or Location Plans

Site or location plans are developed from an assessment of all unit emergency plans and overall site requirements within that site or location, and:

— must be committed to writing and communicated to those with a need to know;

— must provide an emergency planning organization, predetermined leadership and all of the procedures required to effectively direct and control a site or location emergency;

— should provide for an emergency communications center to which and from which all emergency related information will be communicated. It should include specific provisions to interface with the media;

— should provide the overall procedures required to interface with the community, adjoining neighbors (Dow and non-Dow), outside emergency services, outside regulatory agencies and within the site;

— must provide (where and when applicable) for technical support to the community on site generated incidents. Additional support should be provided in areas where we have expertise to facilitate overall community execution of their emergency plan;

-- require emergency call lists pertinent to the site or location plan to be up-to-date and available to those who need to know;

-- must be reviewed at least annually and updated if necessary;

-- should be tested at least annually.

2.3 Distribution System Emergency Plans

Distribution system emergency plans must exist for those sites which are involved in the manufacturing or distribution of raw materials, supplies or products associated with our many business interests. (See Dow "Distribution Emergency Response Guide")

3. Emergency Plan Elements

Unit plans, site or location plans and distribution system plans must provide for emergency support services required for all foreseeable types of emergencies.

In addition, there is a need to provide the emergency infrastructure which deals with such items as alarm systems, fire, medical, industrial hygiene, environmental control, safety services, emergency notification systems, gas dispersal tracking systems, communication systems, shelter areas, assembly areas, people accountability system, disaster recovery, evaluation, public relations, mutual aid groups and emergency trnasportation. (See Appendix A - "Typical Components Of A Chemical Plant Emergency Response Plan".)

The following sub-sections cover some of the above mentioned elements which should be considered in emergency plan development.

3.1 Communications

Coordination and control of emergencies can be aided by the establishment of an emergency communications control center and network equipped to receive and transmit information by telephone, radio or other devices. Location, size and number of manufacturing units will govern the type of network adopted.

3.1.1 Communication Needs

Some of the potential needs for communications include:

-- Calls for ambulance, medical treatment and other emergency services.

-- Warning of personnel in affected area to leave area or seek shelter.

-- Calls for immediate damage control services and application of these controls.

-- Warning of adjacent units so they may take appropriate measures to reduce effect if involved in an emergency.

-- Calls for or alerting of key personnel and needed support services.

— Calls for mutual aid (additional fire apparatus, ambulance, police and medical personnel).

— Supply of accurate information for management direction and release to public news media.

— Communications with the weather bureau to ensure continuous updating of storm warnings and other weather conditions.

— Notification to all units of current status and/or cessation of the emergency.

3.1.2 Communication Devices

It is imperative that each unit or plant have a clear, loud, distinct emergency alarm known and understood by all employees to alert the site that an emergency is occurring.

Supplementary warning and communication devices include special telephone systems, radio systems, P.A. systems and intercoms. Tests of each warning system and all components should be conducted periodically with a minimum of one test per month.

3.2 Emergency Services

Although emergency planning and response is a line responsibility, certain emergency services are usually required. Emergency services are the planned actions taken by groups such as firefighting, security, safety, medical, utilities, maintenance, public relations, personnel, and engineering to regain control and treat injured personnel in an emergency. Each service function should be part of a specific plan to provide service commensurate with the severity of the emergency.

Emergency field service manpower and equipment should be planned to reach the scene of any emergency without failure and in minimal time. Up-to-date call lists must be maintained for field service employees.

3.2.1 Firefighting Organization

When practical, an "on site" firefighting organization should be provided. The size and functional structure depends on the size and layout of the facilities, the nature of the fire hazards, plant fire protection available, amount and kind of outside help and the expected time before help could arrive. The organization must be tailored to the plant or operation and may include full time and/or part time firefighting personnel.

Firefighting personnel must receive regular instruction and training, including practical firefighting exercises.

A qualified person should be appointed to lead and direct the firefighting organization. This person should be technically competent in fire prevention and protection, proficient as a trainer and possess the ability to direct the activities of others.

When size and/or structure makes an internal firefighting organization impractical, steps should be taken to ensure proper education of the municipal or local firefighting personnel and their chief, so that there is complete familiarity with the site layout and hazards. Adequate provision to provide coordination personnel to ensure safe and efficient use of the local or municipal firefighting brigade is required.

A mutual aid plan is recommended where feasible.

3.2.2 Security

Security functions necessary during an emergency should be pre-planned, developed and understood by personnel assigned. First responder medical aid, auxiliary firefighting, control of the movement of people and emergency equipment and protection of the public, are some of the services to consider. The security function, normally in attendance around-the-clock, offers a logical place for an emergency communications center and for recording the chronology of events. Consideration should be given to a backup control center.

Plans should include control of pedestrian and automobile traffic during emergencies. Access lanes must be kept clear for evacuation of personnel and entrance of emergency vehicles. Blockades may have to be set up to prevent unauthorized personnel from entering hazardous areas.

One person, generally full time security where it exists, should be responsible for activating this portion of the emergency plan so that duplication of calls may be avoided.

3.2.7 Public Relations

The policy of The Dow Chemical Company is to communicate proactively with the media as representatives of the public and to provide all reasonable information as quickly as possible.

One management appointee at a location should be designated Public Relations Coordinator and serve as the sole media contact person. This would be the appointee's primary responsibility during an emergency.

In all cases, media personnel and inquiries from media personnel should be referred to the Public Relations Coordinator.

In an extended emergency, a media headquarters area, with telephone and typewriters, should be set aside for media. The headquarters should be located outside of the fence and removed from the immediate scene of the emergency.

In a large or extended emergency, the Public Relations Coordinator will need additional assistance in dealing with the media.

Emergency plan should include provisions for the taking and control of all photographs during the emergency for future use by the company and for potential release to the media.

Facts about an emergency situation should be made available to the media as soon as they are known and verified. For legal and insurance reasons, any statements made regarding the specific cause of an incident or the amount of damage in dollars (other than to say that the Company will investigate thoroughly to determine these facts) should be cleared in advance with legal counsel and the location manager.

The names of casualties must not be released until the next of kin have been notified. Extreme care and judgment must be exercised in this area.

Assistance in developing an emergency public relations plan can be obtained by contacting the Director of Communications, Public Affairs Department, Midland.

3.3 Evacuation

3.3.1 It is imperative to have a controlled evacuation plan to ensure the safety of personnel. Depending on the nature of the emergency, the following plan of evacuation should be considered:

-- Evacuation from the affected plant, buildings or area.
-- Evacuation to designated areas.
-- Accounting for all personnel.

3.3.2 Emergency lighting should be provided within buildings for illumination of evacuation routes in event of power failure.

3.4 Testing of Emergency Plan

3.4.1 Emergency and evacuation plans should be field tested periodically to ensure they are workable and current. The effectiveness of the test should be analyzed and evaluated.

3.4.2 Field tests of emergency plans should be made as realistic as possible. Consideration should be given to the following:

-- Announce emergency plan tests in advance.
-- Exercise all shifts.
-- Revise plans as indicated by tests and changing conditions.

Appointment of qualified observers may be necessary to complete the evaluation of the test. A "classroom" type dry run may also be desirable. In this type of test, the hypothetical emergency can be presented by a panel and the case reviewed by those in attendance.

3.5 Integrating Site Or Location Plans With Community Plans

Each affected Dow location should develop a community program to provide the public with information on chemicals manufactured, used, stored, or transported at its site.

Dow Chemical plant site or location plans should be combined with other local community planning so as to achieve an integrated community response plan.

Dow technical and professional experts are encouraged to offer their services to assist the community in developing their emergency plans. Appendix B contains the "Chemical Hazards Communications Guidelines" adopted by Dow U.S. Area.

3.6 Civil Disobedience - Disorderly Work Stoppages

Bomb threats, civil disobedience or disorderly work stoppages may result in the need for activation of the emergency plan. The unit manager should be alert to possible damage and the resultant effects on the safe operation of Company facilities. Added security may be necessary to protect personnel and property.

3.7 Air and Water Pollution Arising From The Initial Emergency

The emergency plan should consider and include provisions for control of secondary emergencies (such as water or air pollution) which might arise as a byproduct of handling the initial emergency. Planning should include predetermined means of discontinuing the pollution at the source or by diversion into controlled release areas or vessels. If control cannot be attained in the above manner, then adequate communications to neighbors or contiguous communities must be established to minimize the effect of exposure to people and property.

3.8 Disaster Recovery

Records vital to operations and rebuilding shall be adequately secured from loss. Key records must be duplicated and placed in protected vault storage facilities for safe keeping.

TYPICAL COMPONENTS OF A CHEMICAL PLANT EMERGENCY RESPONSE PLAN

1. Plant Emergency Organization

   - Designated person in charge/alternates
   - Functions of each key individual and group
   - Telephone numbers (office and home) for key people/alternates

2. Plant Risk Evaluation

   - Quantity of hazardous materials
   - Location of hazardous materials
   - Properties of each (MSDS sheets)
   - Location of isolation valves
   - Special fire fighting procedures (if any)
   - Special handling requirements

3. Area Risk Evaluation (other industries near plant)

   - Properties of hazardous materials at nearby plants
   - Contacts (names, telephone numbers) at other sites
   - Established procedures for notification of chemical releases at other sites in area

4. Notification Procedures and Communications Systems

   - Alarm systems
   - Communication equipment (radios, hot lines, etc.)
     - o Emergency organization
     - o Plant management
     - o Local officials and response agencies
     - o Neighboring industry
     - o Nearby residents
   - Names and telephone number (with alternates) list
   - Designated person for media contacts
   - Procedure for notifying families of injured employees
   - Central reporting office

5. Emergency Equipment and Facilities

   - Fire fighting equipment
   - Emergency medical supplies
   - Toxic gas detectors (where needed)
   - Wind direction/speed indicators
   - Self-contained breathing apparatus
   - Protective clothing

6. Procedure for returning to normal operations

   - Interface and lines of communications with offsite officials

TYPICAL COMPONENTS OF A CHEMICAL PLANT EMERGENCY RESPONSE PLAN (continued)

7. Training and Drills

- Knowledge of chemicals (properties, toxicity, etc.)
- Procedures for reporting emergencies
- Knowledge of alarm systems
- Location of fire fighting equipment
- Use of fire fighting equipment
- Use of protective equipment (respirators, breathing air, clothing, etc.)
- Decontamination procedures for protective clothing and equipment
- Evacuation procedures
- Frequent, documented simulated emergencies

8. Regular tests of emergency organization/procedures

- Simulated emergencies
- Documented, frequent alarm system checks
- Frequent tests of fire fighting equipment
- Evacuation practice
- On-going emergency preparedness committee

9. Plan Updates

- Annual or more frequent if needed
- Reflect results of drills and tests

10. Emergency Response Procedures

- Communications
- Evacuation
- Medical (include handling of multiple injuries)
- Special procedures for toxic gas releases (chlorine, etc.)
- Hurricane procedures (coastal areas only)
- Utility failure procedures
- Individual unit emergency procedures
- Bomb threat procedures

11. Detailed Operating Manuals (for each process unit and utility system)

- Start-up/Shut-down emergency procedures
- Analysis of potential incidents
- Emergency response and action to be taken for each incident

Dow Chemical U.S.A.

Chemical Hazards Communications Guidelines

Position Statement

Dow Chemical U.S.A. is committed to effectively managing all potential chemical hazards associated with its products and operations. This includes communicating all necessary information on materials manufactured, transported, used or stored to Dow employees, customers, emergency personnel and civil authorities, so they may effectively carry out their responsibilities.

In addition, we will communicate the potential hazards of our materials to local communities. Elements of an effective communications program may include community meetings, plant tours, discussions and training sessions. We will also provide information appropriate for each specific audience utilizing information from Material Safety Data Sheets and other Dow literature.

The primary reason for providing this information is to respond to public concerns and interests, and to prevent inappropriate response to incidents which could cause personal injury, illness or property loss. Line management at each Dow location has the responsibility to develop and implement an effective chemical hazards program within the spirit of these guidelines.

Overview

The health and safety of our employees and neighbors has long been a priority of The Dow Chemical Company. We have established an enviable record of success in this area by developing and implementing solid programs in hazard management and communication. We cannot be complacent, however, because rising public concern indicates the need for further effort. Dow must be open and responsive, because public trust is essential for the conduct of our business.

Each Dow manufacturing location should therefore establish an effective chemical hazard communications program in order to build and maintain public trust and preparedness. This program should emphasize three things:

1. The potential chemical hazards our operations pose;
2. The programs we have in place to prevent chemical emergencies;
3. Our emergency response programs and especially our willingness to work with community officials to assure rapid and effective response.

This program will be integrated into each location's community relations plan. It should be consistent with these guidelines, while, at the same time, flexible enough to address the unique concerns of each location.

Material Safety Data Sheets (MSDS) will form the basis of information to be communicated to employees, emergency response personnel, community leaders, the news media, advocacy groups, neighbors and the plant community. However, MSDS should not necessarily be the only source of information.

Discussion of Position Statement

A chemical hazards communications program is a logical extension of any sound, continuing policy of hazard assessment and control. Dow has implemented many programs to design, operate, maintain and audit its operations in order to prevent chemical emergencies. The Reactive Chemicals and Product Stewardship programs, Technology Center audits, plant and transportation emergency plans and exacting safety standards are some examples. Each Dow location should periodically review its operations to determine if any potential hazards exist which could adversely affect the health and safety of employees as well as members of plant communities.

Such programs and reviews are vital to chemical hazards control but are often unknown to many in the community. The success of the programs, as substantiated by our safety and environmental record, can be a positive and significant part of our communications effort.

Each Dow location should develop a complete community relations program to explain our operations, enhance Dow's reputation and protect our interests through a more informed public. The chemical hazards communications program will be most credible and gain the greatest acceptance if it is presented as merely a natural extension of the overall community presence. Community relations or outreach programs could include, among other things, plant tours, meetings with community officials and discussions with civic groups.

The chemical hazards communications program must be consistent with U.S. Area positions on issues such as right-to-know; however, it must also be flexible enough to address the unique concerns and circumstances of each location.