

United States Fire Administration



Technical Report Series

Phillips Petroleum Chemical Plant Explosion and Fire Pasadena, Texas



Federal Emergency Management Agency



United States Fire Administration
National Fire Data Center

U.S. Fire Administration Fire Investigations Program

The U.S. Fire Administration develops reports on selected major fires throughout the country. The fires usually involve multiple deaths or a large loss of property. But the primary criterion for deciding to do a report is whether it will result in significant "lessons learned." In some cases these lessons bring to light new knowledge about fire -- the effect of building construction or contents, human behavior in fire, etc. In other cases, the lessons are not new but are serious enough to highlight once again, with yet another fire tragedy report.

The reports are sent to fire magazines and are distributed at national and regional fire meetings. The International Association of Fire Chiefs assists USFA in disseminating the findings throughout the fire service. On a continuing basis the reports are available on request from USFA.

This body of work provides detailed information on the nature of the fire problem for policymakers who must decide on allocations of resources between fire and other pressing problems, and within the fire service to improve codes and code enforcement, training, public fire education, building technology, and other related areas.

The Fire Administration, which has no regulatory authority, sends an experienced fire investigator into a community after a major incident only after having conferred with the local fire authorities to insure that USFA's assistance and presence would be supportive and in no way interfere with any review of the incident they are themselves conducting. The intent is not to arrive during the event or even immediately after, but rather after the dust settles, so that a complete and objective review of all the important aspects of the incident can be made. Local authorities review USFA's report while it is in draft. The USFA investigator or team is available to local authorities should they wish to request technical assistance for their own investigation.

This report and its recommendations were developed by USFA staff and by TriData Corporation, Arlington, Virginia, its staff and consultants, who are under contract to assist the Fire Administration in carrying out the Fire Reports Program.

The U.S. Fire Administration appreciates the cooperation and assistance received from Fire Marshal J.J. Pruitt of Harris County, Chief Jay Goyer of the Pasadena Fire Department, Brigade Chief Jesse Berotte of Phillips 66 and members of their staffs as well as Doug Miller (with Aristeck Chemical Corporation), Chairman of Channel Industries Mutual Aid.

**Phillips Petroleum Chemical Plant
Explosion and Fire
Pasadena, Texas
(October 23, 1989)**

Investigated by: Jack Yates

This is Report 035 of the Major Fires Investigation Project conducted by TriData Corporation under contract EMW-88-C-2649 to the United States Fire Administration, Federal Emergency Management Agency.



Federal Emergency Management Agency



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National Fire Data Center**

**Phillips Petroleum Chemical Plant
Explosion/Fire
Pasadena, Texas**

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OVERVIEW

During the course of operations at the Phillips Petroleum Houston Chemical Complex in Pasadena, Texas on October 23, 1989, an explosion and ensuing fire occurred which resulted in 23 known dead and one missing. In addition, more than 100 other people were injured in varying degrees. Metal and concrete debris was found as far as six miles away following the explosion.

Information available at the time of this report indicated that there was a failure in either a line or valve which carried ethylene and/or isobutane. The line was reported as being approximately 10" in diameter and possibly carrying as much as 700 pounds per square inch pressure. It is not known if a mechanical failure took place or if human error was a

factor. Regardless, a failure of a high pressure line carrying these types of flammable products can create a large, enveloping, explosive cloud within seconds.

Information from witnesses indicates that a vapor cloud developed very quickly and that workers had approximately 60 to 90 seconds to evacuate. Potential ignition sources were all over the plant, including ventilation fans, electrical switches, and gas burn-off flames throughout the work area. The exact ignition source may never be known.

Early estimates of rebuilding efforts indicated that costs could run to four or five hundred million dollars and rebuilding may take as long as two years.

The key issues in this fire are summarized in the table on the following pages.

THE FIRE AND EXPLOSION

The Phillips Petroleum chemical plant lies in an unincorporated corner of Harris County, Texas, near Pasadena. It is southeast of Houston, along a shipping channel. At about 1300 hours on October 23, 1989, the volunteer Chief of the Pasadena, Texas Fire Department, J.S. Goyer, was at his place of full-time employment, GATX Terminal, approximately one mile from the Phillips chemical plant, when the plant blew up. The blast was so great that Chief Goyer thought his own facility had blown up. Upon running outside, he saw the fire at the Phillips plant. He immediately radioed the Pasadena Fire Department to respond as they are not only members of the area-wide mutual aid association, the Channel Industries Mutual Aid (CIMA), but are also contracted with Phillips for fire protection. Because the GATX terminal is a CIMA member, Goyer was also immediately aware that an all-out CIMA Zone 2 alert had been made. Chief Goyer was an outside witness to the very early stages of the fire.

At the time of this report, plant and fire officials had not made a final determination as to exactly what may have been the cause, but it was

SUMMARY OF KEY ISSUES

Issues	Comments
Cause of Explosion/Fire	Unknown whether human or mechanical failure. A 10" high pressure line carrying ethylene and/or isobutane emitted a flammable vapor cloud into a hostile environment.
Detection and Alarm	Loud roaring noise accompanied by the vapor cloud was immediately heard and seen by workers. An alarm was sounded, but the explosion occurred within 60 to 90 seconds of detection.
Building Structure	Multi-story structure encompassing several acres, primarily of metal construction. Material carried through the pipes within the structure was for the making of plastic pellets.
Sprinkler System	Building/structures were equipped with sprinkler systems; however, the force of the explosion severed water supplies for the systems.
Evacuation	Because explosion/fire occurred almost immediately, planned evacuation routes were not much help. Personnel simply fled the structure in all directions.
Incident Command	Channel Industries Mutual Aid (CIMA) had a pre-fire plan that worked extremely well in all phases.
Casualties	Twenty-three people are known to have been killed. One was still missing at the time of this report. Well in excess of 100 were injured in varying degrees.

SUMMARY OF KEY ISSUES (cont'd)

Fire Department's Right to Know	Responding Departments were all members of CIMA. CIMA strictly adheres to SARA Title III and their own strict guidelines that state all member companies must have an open door policy.
Enclave	Although this plant's location was in an unincorporated area, it still fell under the ruling law for both the State of Texas and the city of Pasadena.

thought to have been a failure in a high pressure 10-inch line carrying flammable products. Reportedly the line carried 700 PSI and the flammable vapor very quickly enveloped a large area where multiple ignition sources were available. It is unknown if failure occurred through human error or was a mechanical breakdown. Regardless, the magnitude of the failure in this type of environment virtually eliminated use of evacuation plans and in-house emergency response crews, as the explosion occurred within seconds of the leak.

Cooling water from fire apparatus was being trained onto the area within minutes, but the intensity and fuel load were such that the responders were only able to contain the fire and allow the fuel from within to be consumed. The CIMA chairman stated that although the fire continued to burn for several hours, they had control of the fire by approximately 1900 hours.

BUILDING STRUCTURE SPRINKLER SYSTEM AND ALARM

The Pasadena, Texas Phillips chemical facility was a multi-level structure with the highest tower being approximately 14 stories. There were heavy concrete and steel reinforced buildings with the mesh of pipes and beams that were the outer part of the facility. To the laymen the facility would have looked similar to an oil refinery. This facility, however, produced plastics used in a wide variety of items -- approximately one third of the plastics of this type used worldwide.

Within the 800-acre Phillips property the area directly involved in the explosion/fire was approximately 500 feet by 750 feet. Workers were present throughout this area at the time of the blast. In addition, the blast wave did major structural damage to other structures around the complex, some that were over a quarter mile away. The structure where the blast occurred did have an automatic sprinkler system as well as an alarm system. However, the sprinkler system was rendered useless by the explosion, which was measured at 3.5 on the Richter Scale at Rice University approximately 25 miles away. It was estimated to be 4.0 at the epicenter.

An alarm was sounded, but reports indicate it sounded only seconds before the first explosion occurred. This reduced the evacuation plan to basically running for your life in any direction away from the explosion.

There were additional explosions after the first large explosion due to the numerous pipes and tubes that had gases trapped in them.

The Phillips plant was serviced by one primary two-way north/south road that circled through other parts of the industrial area. In addition, there were smaller back roads into the plant facilities. The north area of the Phillips facility was along the Houston Ship Channel. There also was a large berm built on the west side of the plant which absorbed and diverted much of the shock wave moving in that direction.

CHANNEL INDUSTRIES MUTUAL AID ORGANIZATION AND INCIDENT COMMAND

In order to discuss the response to this explosion/fire by emergency personnel, one must first have an understanding of the Channel Industries Mutual Aid organization. CIMA's purpose is to assemble fire fighting, rescue, and first aid manpower and facilities among the industries along the Houston Ship Channel to respond to emergencies such as this.

Each member of CIMA has its own in-house fire brigade and emergency response crew trained to handle most of its own emergencies. They may, in addition, have enough manpower and equipment to give aid to others. Created in 1955, CIMA has sponsored a major disaster drill every year, training over and over so that participants come to know each other and complex actions become routine.

CIMA expects each participating company to reserve enough manpower and equipment to care for its own facilities before it releases anything to an outside emergency.

The history and description of CIMA are outlined in Appendix B, pp. 1-31. Membership is extensive even though the criteria for gaining membership is demanding and strictly upheld. CIMA companies are divided into four zones.

In this explosion/fire, a Zone 2 all-out call was given. The initial was made by Phillips Chemical on the CIMA radio network and the classification of the alert was made by the CIMA chairman. This meant-- that Zones 1, 3, and 4 were left intact. Even so, approximately 87 fire organizations responded. As the blast knocked out the existing water supply, CIMA brought in two 4,000 GPM pumpers plus a 5,000 GPM jet pumper and had these operational within minutes of the explosion/fire. They drafted from freshwater reservoirs and then laid over 12 miles of 5-½ inch line to supply water to suppression apparatus.

The CIMA organizational guide states that officials of member plants normally will be responsible for directing fire fighting or emergency activities in their plant; in unusual situations they can request the CIMA Specialist Group to direct activities. In this particular case, the Phillips brigade chief did direct activities and was the field command post. The CIMA chairman set up the central command post, which in turn set up the mutual aid assistance function, which set the staging area where all responding mutual aid equipment and personnel were kept until called for. Central command established communication links with mutual aid agencies by radio or telephone using the pre-fire plan information.

TRIAGE AND EMS

The CIMA Central Command Post alerted various Emergency Medical Services through the mutual aid network. Chief Goyer stated that, as the Pasadena Chief and the contractor to Phillips, he knew they would need large scale transportation of those injured. Part of the pre-fire planning was for Pasadena school buses to be used, and he immediately alerted the schools of the impending need. Accordingly, in addition to EMS ambulances and helicopter evacuations, they had the buses. Chief Goyer stated that even though there were in excess of 100 injured, there was never a problem with transporting them to area hospitals. There were also enough hospital facilities available so there was not an overload at any one facility. Some of those more critically burned were life flighted to burn specialty units.

ENVIRONMENTAL IMPACT AWARENESS

Both CIMA Chairman L. Douglas Miller and R.A. Wiederstein, Safety and Security Director for the Phillips plant, were aware of the fuels involved in the fire and knew there was no toxic problem with the smoke being emitted at the time. However, as a precaution, they had gone to a Level 2 Community Awareness Emergency Response (CAER) Alert. Under CIMA's classification of alerts, this was a Standby Alert, indicating that an industrial accident is in progress but appears it can be handled within the boundaries of the facility. However, outside areas could be affected. Accordingly, CIMA was prepared to handle an outside alert if needed. Results of smoke samples that were taken during the fire by OSHA or others were unknown at the time of this report.

ENCLAVE VS FIRE DEPARTMENT'S RIGHT TO KNOW

At the onset of this investigation, the question of whether an enclave existed with this plant's location or not was a matter of concern, specifically in dealing with the responding fire departments' right-to-know what possible dangers existed.

The property that the Phillips Chemical Plant was on had been classified as unincorporated. The location was such that it fell into the Pasadena, Texas City limits. Plants such as Phillips may opt to remain unincorporated for tax purposes, but by getting lower taxes they may not receive the full complement of services as taxpayers would. Large industrial facilities routinely agree to such status and know they will have to provide their own security, fire department, water, and sanitation along with other amenities.

It is also routine that these type facilities will in turn contract with the city for various services such as the fire department.

Mr. J.J. Pruitt, Fire Marshal for Harris County, noted that even though such plants may be in unincorporated areas, they are still subject to inspection at any time by his office or a CIMA inspector. All companies in Harris County are made aware of SARA Title III if there is ever a

problem with inspections or in determining if any hazardous substances exist. Item number 3 of the SARA Title III states that "Facilities must report information about the amounts, location, and effects of hazardous materials being used or stored. This information must be reported to local emergency planning committees (LEPC) and the local fire department." As a member of CIMA, the Phillips plant cooperated in letting CIMA be aware of its products. Uncertainty about the chemicals present did not appear to be an issue in this fire.

LESSONS LEARNED

1. Having a comprehensive pre-emergency plan is of great value.

There was rapid, knowledgeable response following the explosion. Unfortunately, most of the damage and death toll was immediate, but the response to this disaster was about as effective as could be hoped. The guidelines and procedures set out by the CIMA handbook have been tried and tested. CIMA exemplifies what communications and cooperative efforts can do. This organization realizes it is not without fault, but it is quick to analyze after each emergency and correct whatever may have arisen.

2. The use of a field command post along with a central command post made possible well-coordinated response management in a major emergency.

CIMA's guidelines state that the distressed company's officials are the ones in charge of actual suppression and emergency details within the boundaries of the facility. CIMA, upon arrival, is there to provide coordinate assistance, information, and recommendations as needed. The company official in charge is designated as the field command post and the CIMA chairman becomes the central command post. This may be viewed as dual command, but in a large scale disaster such as this, single command can be overwhelming. This form of incident command has worked well, at least in the highly cooperative and professional environment of the CIMA.

3. Accessibility for inspections allows responding fire departments to have full knowledge of contents and possible dangers involved.

As part of the prerequisite for becoming a CIMA member, each company must agree to cooperate totally with authorized inspectors of the CIMA Inspection Officers. There is no conflict of interest involved since the inspectors will be from other plants. Since this type of industry is highly specialized and complex, there are not many who are better trained to inspect than engineers and safety officers from similar work areas. These are the same people that will be responding to emergencies and will therefore exercise the utmost care to protect themselves and their units. Most city and county fire inspectors are not versed enough in this type of industrial technology to make adequate inspections.

4. The separate staging area under the command of the central post was very helpful for the quick response of apparatus, equipment, triage, and as a rest and relief area.

By having the Central Post coordinate this area, the suppression and rescue operations could be handled without the fire line being cluttered with unneeded personnel. When a need for further assistance arose, it was met by Field Command notifying Central Post who in turn called staging for whatever was needed.

5. Availability of specialists in chemical fires and hazardous materials incidents are a necessity for large industrial areas such as the Houston Ship Channel.

The CIMA organization has appointed a group of specialists who are directed to respond to fire or emergency situations reported on the CIMA emergency radio network. These specialists have knowledge in areas such as chemical fire suppression and hazardous material spills or burns. They are required to respond to all alarms. The first arriving specialist is instructed to determine the needs, and to broadcast reports on the conditions to other responding specialists.

6. An efficient, successful suppression operation can inadvertently leave possible post-fire hazards from leftover pockets of unburned fuel.

During victim recovery operations pockets of remaining fuel were discovered in some pipes. This fuel had not been burned off because of the quick cooling of the pipes by suppression personnel and equipment. Fuel residues such as this can be ignited during overhaul procedures. Most likely, these will not cause extensive fires, but caution should be exercised if one is not sure that all fuels are depleted.

7. First responders should use caution in how close they get to hazardous areas during initial stages.

Although it is the responsibility of fire departments to contain and suppress a fire, they must also show caution in approaching an explosive area. First responders to this disaster stated that even outside the fence line their equipment was being rocked by blast waves. Throughout the entire suppression and recovery operation there were no injuries to emergency responding personnel. But if the gas cloud had lingered longer before being ignited and the response to the emergency call any faster, suppression units might have been caught in the explosion (as happened in a Henderson, Nevada rocket fuel plant explosion in 1988).

8. Automated sprinkler protection systems should have main control valves and connections below ground level if possible.

In heavy industry such as the Phillips Chemical Complex, there is potential for explosions to occur. The explosion in this case did in fact sever above-ground connections to the sprinkler system. As great as this particular explosion was, it may have damaged even a protected system, but Phillips officials indicated that with any new plant design they would incorporate below-ground-level sprinkler mains, valves, and connections as much as possible. The same design consideration applies to smaller industry or any circumstance where sprinklers could be damaged by an explosion.

SUMMARY

In summary, the information obtained during the Phillips chemical plant explosion and fire proved that planning by emergency responding personnel was successful. The Channel Industry Mutual Aid organization was in fact a very effective planned group of responders and industry experts.

While this type of industry can afford to use the best of equipment, the real heart of the organization is the willingness of volunteers to train and respond to these types of incidents. Training for these responders is on their own time as with most volunteer organizations. These responders just happen to work in heavy industry that by its nature has more exposure to emergencies than the average civilian area and they desire the best preparedness possible.

The CIMA organization can be used as a model volunteer organization. While its equipment list is hard to duplicate, its ideas, concepts, and spirit can certainly be emulated.

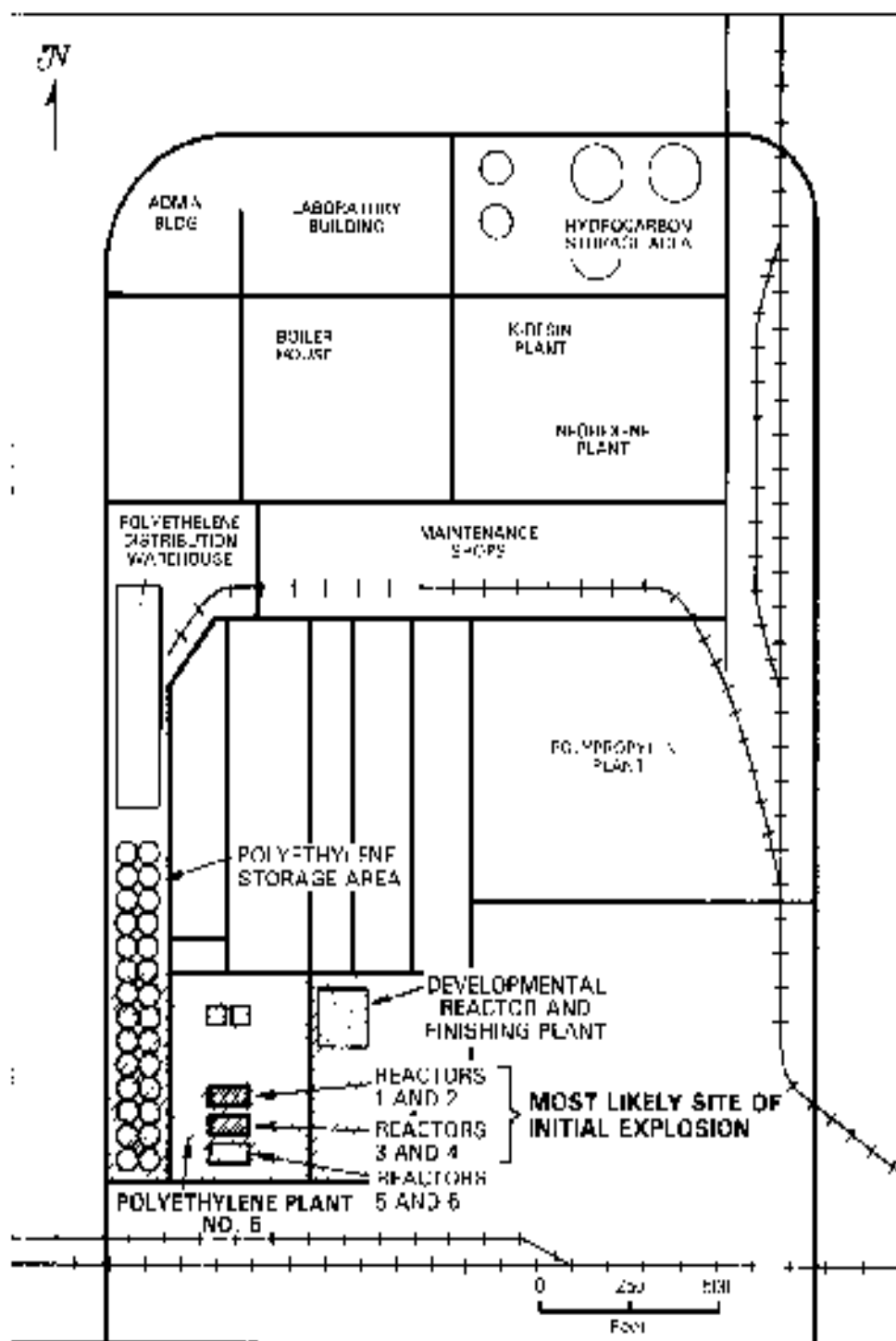
Appendices

- A. Site Plan and Map of Area Affected by the Explosion
- B. Channel Industries Mutual Aid (CIMA) (Describes conditions of membership, responsibilities, and procedures.)
- C. CIMA Zone List - Zone 2 list of members and equipment. (This is the zone for Phillips.)
- D. Channel Industries Mutual Aid (CIMA) - List of organizations responding to the Phillips explosion/fire.
- E. SARA Title III - Emergency Planning and Community Right-to-Know
- F. List of Slides



Appendix A

Site Plan and Map of Area Affected by the Explosion

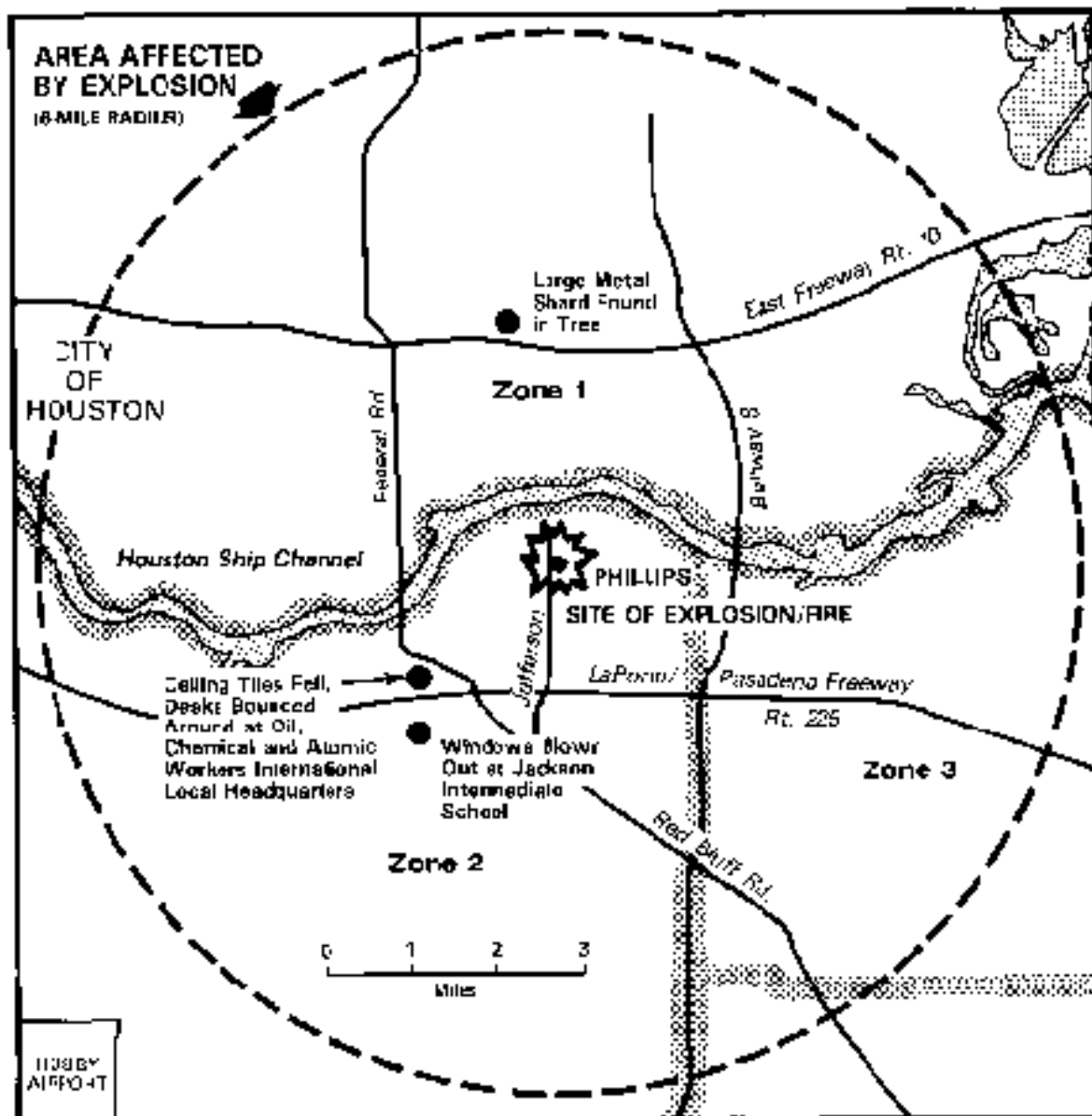
HOUSTON SHIP CHANNEL



KEY:

-  AREA AFFECTED BY EXPLOSION AND FIRE
-  ROAD

HIGHWAY 225
↓



Appendix B

Channel Industries Mutual Aid (CIMA)

Describes conditions of membership, responsibilities,
and procedures

**CHANNEL INDUSTRIES MUTUAL AID
(CIMA)**

FOREWORD

The object of this organization is the joining together of fire-fighting, rescue, and first aid manpower and facilities among Houston Ship Channel industries for mutual assistance in case of emergency situations -- either natural, man-made, or war.

Each company participating in this plan must reserve manpower, material, and equipment for its own protection before releases can be made in an emergency. This matter is entirely the judgment of the management of each industry or plant. No company, therefore is obligated by their manpower and equipment listings in this manual.

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CIMA EQUIPMENT SHEETS

NOTE: Pages with information on member-companies are aligned by zones, alphabetically by name of plant or organization, and shall be revised and distributed at least annually, by the current CIMA Chairman. These pages are not page numbered.

CIMA MEMBERS ZONE 1

CIMA MEMBERS ZONE 2

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BRIEF HISTORY & DESCRIPTION

The CIMA Organization was formed in 1955 under the name of the "Houston Ship Channel Industries Disaster Aid Organization." In 1960 the name was changed to "Channel Industries Mutual Aid" (CIMA).

The object of the organization was at that time, and continues to be, the joining together of trained fire-fighting, rescue, and first aid manpower and equipment among Houston Ship Channel Industries with a common goal of Mutual Assistance in case of emergency situations. In short, CIMA is a fire fighting cooperative.

Each company participating in the organization agrees to reserve manpower, material, and equipment necessary to handle its own emergencies before releasing the same to other members of the organization. This philosophy holds true today and is entirely the judgement of each member company.

In 1982, the organization had grown to such size that no member company was capable of handling all of the responding equipment available from its associate members. At that time the organization was geographically divided into four zones to facilitate a more efficient operation during both emergency and non-emergency situations.

Today, CIMA's membership has grown to approximately 106 members and includes industrial facilities, municipal fire departments, and agencies such as the U. S. Coast Guard, the Harris County Sheriffs Department and the Harris County Fire Marshals office.

CIMA is governed by officers elected by its general membership. In addition to the officers of the organization, a steering committee helps guide the organization in its monthly business activities.

In 1984, the membership voted to charter the organization and in 1985, the state granted a charter.

To conclude, membership into the CIMA organization is open to any company or facility that can meet membership requirements and agrees to abide by the by-laws of the organization.

PAST EXECUTIVE OFFICERS

Jan. 1987	Jack Oliphant Shell DPMC Deer Park	Hugh D. Billings Hoechst Celanese Clear Lake Plant	Doug Miller Aristech Chemical Corp. LaPorte
Jan. 1986	R. L. Patrick Lyondell Petrochemical Channelview	Jack Oliphant Shell DPMC Deer Park	Hugh D. Billings Celanese Chemical Co. Clear Lake Plant
Jan. 1985	E. J. Riley Exxon Co. U.S.A. Baytown	R. L. Patrick Lyondell Petrochemical Channelview	Jack Oliphant Shell DPMC Deer Park
Jan. 1984	R. Crawley Lubrizol Deer Park	E. J. Riley Exxon Co., USA Baytown	R. L. Patrick ARCO Chemical Channelview
Jan. 1983	J. Garland ARCO Refinery Houston	R. Crawley Lubrizol Deer Park	E. J. Riley Exxon Co., U.S.A. Baytown
Jan. 1982	S. E. Anderson Rohm and Haas Texas Deer Park	J. Garland ARCO Refinery Houston	R. Crawley Lubrizol Deer Park
Jan. 1981	R. G. McNeely El Paso Products Bayport	J. E. Anderson Rohm and Haas Texas Deer Park	J. Garland Arco Refinery Houston
Jan. 1980	A. H. Slaughter Lubrizol Deer Park	R. G. McNeeley Rexene Bayport	Jack Coe Soltex Polymer LaPorte (J. Garland finished the unexpired term when Mr. Coe transferred.)
Jan. 1979	J. H. Burns Shell Oil Deer Park	A. H. Slaughter Lubrizol Deer Park	W. E. Irby Mobay Chemical Baytown
Jan. 1978	D. Jenkins ARCO Chemical Channelview	J. H. Burns Shell Oil Deer Park	A. H. Slaughter Lubrizol Deer Park
Jan. 1977	T. C. Gossett Charter Int. Oil Houston	D. Jenkins ARCO Chemical Channelview	W. R. Donaldson Upjohn LaPorte
Jan. 1974	E. E. Atteberry ARCO Chemical Channelview	T. C. Gossett Charter Int. Oil Houston	W. R. Donaldson Upjohn LaPorte

PAST EXECUTIVE OFFICERS (CON'T)

Jan. 1971	F. Sandlin Atlantic Richfield Houston	E. E. Atteberry ARC0 Chemical Channelview	T. C. Gossett Charter Int. Oil Houston
July 1968	T. C. Smith Humble Oil & Ref. Baytown	F. Sandlin Atlantic Richfield Houston	E. E. Atteberry ARC0 Chemical Channelview
July 1965	W. T. Crouse Rohm and Haas Deer Park	T. C. Smith Humble Oil & Ref. Baytown	F. Sandlin Atlantic Richfield Houston
July 1962	L. S. Buenger Diamond Alkali Deer Park	W. T. Crouse Rohm and Haas Deer Park	T. C. Smith Humble Oil & Ref. Baytown
July 1959	H. R. Cunningham Ethyl Pasadena	L. S. Buenger Diamond Alkali Deer Park	K. M. McDonald Phillips Chemical Pasadena

CIMA OFFICERS

The elected (Executive) officers of CIMA consist of a Chairman, First Vice-Chairman, Second Vice-Chairman and Treasurer.

Chairman's Duties

The Chairman (or the First Vice-Chairman, in his absence) will serve as spokesman for the group, handle all correspondence, call meetings, appoint specialists and steering committee members, and arrange practice drills. Assistance may be solicited from other officers and/or committees when needed.

The Chairman will coordinate CIMA activities with other agencies or organizations and will see that current information is maintained on other Industrial Mutual Aid Organizations in the Texas Louisiana area.

The Chairman will see that manpower and material lists furnished by members are updated annually.

First Vice-Chairman's Duties

The First Vice-Chairman will assist the Chairman in the performance of his duties and serve as Chairman in his absence. He will update the CIMA map and coordinate the activities of the Zone Representatives.

Second Vice-Chairman's Duties

The Second Vice-Chairman will handle all matters concerning radio communications and issuance of CIMA Identification Cards.

Treasurer's Duties

The Treasurer shall receive all monies from all sources and shall be the custodian thereof. The Treasurer shall maintain records of receipts and disbursements of all fiscal assets of CIMA and shall make a report during the business session of each general meeting. The Chairman shall direct an outside Auditor to complete and submit to the Steering Committee an annual financial report during the month of December. All disbursements must be made by check and no disbursements shall be made unless authorized by one of the following:

- a. Majority vote of the membership present at any general meeting.
- b. Two-thirds (2/3) majority vote of the Steering Committee.

All checks must be signed by the Treasurer and Chairman, or Vice-Chairman in the absence of the Chairman.

The fiscal year for CIMA will begin October 1.

The Treasurer shall be bonded at the expense of CIMA.

Appointed Officers

The following officers except zone representatives shall be appointed by the Chairman for a one year term. Zone representatives are appointed for staggered two year terms.

Recording Secretary

Publish minutes of general and steering committee meetings, over the Chairman's signature, and perform similar duties at the direction of the Chairman, -- including public relations, news releases, etc. Minutes of meetings, inspection reports, and other significant CIMA communication will be mailed to the senior manager of each member establishment, the CIMA Representative from that establishment, CIMA officers, specialists and members of the Steering Committee.

Chief Inspection Officer

Coordinates inspection activities as outlined in Inspection Procedures.

Recommends individuals to the Chairman for appointments to the zone inspection committees.

Drill Officer-Assistant Drill Officer

Plan and implement CIMA annual drill.

Zone Representatives

There will be two representatives for each zone. They will be nominated by the zone members and appointed by the Chairman on alternate years for a two year term. The outgoing representative will serve on the nominating committee for that year.

The representatives will coordinate and report minutes of meetings to zone members, officers, zone representatives and specialists. His duties will include serving on the Steering Committee, as Chairman of Zone Meetings, coordinate training, communications and drills within the zone.

ELECTION OF OFFICERS

The office of Chairman, First Vice-Chairman, Second Vice-Chairman and Treasurer are designated as elected offices, each carrying a service term of one (1) year, with the exception of Treasurer whose term shall be three (3) years. Terms commence on January 1 of each year.

- If a Chairman vacancy occurs during a term, the First Vice-Chairman will automatically assume the Chairmanship.
- All vacancies in any offices below Chairman will be filled by appointment from the Chairman for the unexpired term.

The Retiring Chairman will automatically serve as Chairman of the Steering Committee.

In June each year the Chairman will appoint a nominating committee composed of the four outgoing zone representatives. The nominating committee will select nominees for each of the three offices. All prospects selected for these elections must be contacted by the nominating committee for their consent and the consent of their management.

The nominating committee will report at the August general membership meeting. Additional nominations will be taken from the floor at the general membership meeting. Subsequently, the Recording Secretary shall prepare and distribute, with the meeting minutes, a ballot presenting the names and establishment of all nominees for the three elected offices. Member establishments shall complete their ballot. The ballots will be submitted to the secretary by mail by October 1. The ballots shall be tallied by the secretary and the new officers will be announced at the October meeting.

Newly elected officers will automatically assume their responsibilities on January 1, following their election without an installation ceremony. Official announcement of the newly elected officials will be made by letters from the outgoing Chairman to all members of the group.

STEERING COMMITTEE

A Steering Committee shall provide recommendations to the membership concerning ways to strengthen and otherwise improve and maintain the capabilities of the CIMA organization. The immediate past chairman of CIMA shall chair the Steering Committee. Meetings of the Steering Committee shall be held as needed. The Steering Committee shall be composed of the following:

- Immediate Past Chairman
- Chairman
- 1st Vice-Chairman
- 2nd Vice-Chairman
- Zone Representatives
- An individual from a member municipality within each zone
- Chief Inspection Officer
- Secretary
- United States Coast Guard
- Harris County Fire Marshal's Office
- Harris County Sheriff's Department
- Port of Houston

MEETINGS

General

Meetings of the membership shall be held bi-monthly. Meetings will be held at designated locations, and all members will be expected to participate on a host meeting team. A meeting notice and agenda will be sent to all members prior to the next meeting.

Zone

Each zone shall conduct a zone business/training meeting at least once per quarter.

Companies that wish to share experiences on fires or other safety incidents are encouraged to do so at the bi-monthly meetings. Further, the host company may offer a tour of their facility, following the regular business meetings.

Senior managers from the host meeting team are requested to attend the meetings, invited by special letter from the chairman. In this way, senior management from member companies will remain conversant with the CIMA organization.

VOTING PROCEDURES

Voting on issues at CIMA meetings will be by show of hands of the designated representative or alternate from each member establishment. A simple majority of those voting members present shall decide the issue. Secret ballots may be used at the discretion of the officers, or whenever requested from the floor and approved by a majority vote. When ballot voting is conducted, the Recording Secretary shall distribute a single ballot to each member establishment, and ensure a "one member - one vote" system.

Matters of organization, procedures, or policy must appear on the prepublished meeting agenda to be voted on at that meeting.

ANNUAL AND ZONE DRILLS

The CIMA organization shall annually sponsor at least one practice drill. The Chairman shall appoint a drill officer and an assistant drill officer who will plan and implement the drill with assistance from other members as they choose. The assistant drill officer will assume the drill officer position the following year, and a new assistant drill officer will be appointed by the incoming chairman.

Each zone shall annually sponsor at least one zone practice drill, coordinated by the zone representatives.

CONDITIONS OF MEMBERSHIP

It is a basic premise of the organization that it can fulfill its purpose only if the following minimum and basic conditions of membership are met by individual member industries and agencies:

1. Each member agrees to maintain personnel and equipment sufficient to control fires or emergencies of the type and magnitude which are likely to occur most often in their facilities.
2. Each member agrees to provide an emergency plan for activating their personnel and equipment within their facilities.

Included in this emergency plan, or as a supplement to this emergency plan, each member agrees to provide call procedures and instructions to properly respond to calls for assistance from CIMA members, procedures and instructions for properly requesting assistance, and procedures and instructions to properly receive aid from CIMA members.

3. Each member agrees to appoint a representative and one alternate representative. At least one representative or designate of each company will attend all general and respective zone meetings of the organization. Failure to attend three successive general and/or three successive zone meetings shall be grounds for being placed on probationary status. Also, senior managers (or their management representatives) shall attend CIMA meetings periodically.
4. Each member agrees to provide a current list of manpower and materials which, under most circumstances, could be furnished to a stricken plant, or to the CIMA organization in case of major disasters. In this connection each member also agrees to furnish lists of their responsible officials.
5. Each member agrees to participate in the annual and zone practice drills of the organization to the minimum extent of having one of their representatives present as an observer.
6. Each member agrees to appoint responsible company officials to be present at all key road blocks during an emergency to assist the law enforcement officers on duty. These officials should have proper authorization and identification documents identifying them to the law enforcement officers. Also, some type of communications with the plant will be provided at all times. The officials must be familiar with, and have knowledge of, authorized personnel that require admittance to the plant. This includes company employees and officials, fire-fighting and rescue personnel, CIMA, and other outside groups called for assistance.
7. Each member agrees to cooperate totally with authorized inspections by the CIMA Inspection Officers.
8. Each member agrees to replace material used and to repair or replace equipment lost or damaged in the control of a fire or emergency situation within its facilities in cash at current prices or in kind, provided the equipment and/or material was furnished by CIMA members or by other Industrial Mutual Aid Organizations in response to a properly placed request. Damage to and loss of equipment refers to damage and loss as a direct result of the emergency condition rather than from the wear and tear expected in the normal operation of emergency equipment.
9. Each member agrees to establish effective radio communication on the CIMA NET. Normally, this condition of membership is met by establishing a two-way base station. Alternately, individual members may fulfill the radio requirements by a mutually satisfactory written agreement with a member establishment that has a CIMA radio.
10. Each member agrees to pay an annual membership dues of \$150. The amount of dues may be changed by a majority vote of members present at a general meeting. Dues shall be due at the October meeting. Any company not paid up by the following January shall automatically be removed from the membership rolls until such dues are paid. Invoices for dues will be distributed with the minutes of the August general meeting. Governmental agencies, except municipal fire departments, are considered standing agencies and therefore exempt from the annual dues.

PROBATIONARY STATUS

Member establishments may be placed on probationary status by action of the CIMA membership for failure to comply with the "conditions of membership". Placing a member on probationary status shall include the following steps:

1. A recommendation of probationary status by the officers or by a majority vote of members present at any general membership meeting.
2. A written notice of the consideration or probationary status, from the Chairman to the senior manager of the establishment, outlining the reasons.
3. Include the consideration of probationary status for that establishment in the pre-published agenda for a general membership meeting.
4. After consideration of the reasons, approval by a majority of voting members present at that general membership meeting is required.

A continuing probationary status for more than one year is grounds for being dismissed from the CIMA organization. Such dismissal action shall follow the same procedures outlined for probationary status.

Probationary status shall be cancelled and approved at a general membership meeting using the same steps for placing a member on probationary status.

When under probationary status, a member retains all normal membership privileges and responsibilities.

INSPECTION PROCEDURES

New Members

The following steps are required for admission to CIMA.

1. The prospective organization must submit a written request for membership to the chairman.
2. A pre-inspection form will be sent to the prospective member for completion and reviewed by the chief inspection officer.
3. Upon review the pre-inspection form will be forwarded to the appropriate zone inspection committee for scheduling of an on-site inspection.
4. Upon completion of an on-site inspection and approval by the zone inspection committee; the prospective member will be invited to attend the next scheduled zone meeting to present a short review of their operations. A majority endorsement vote by the zone members will be required for forwarding of the inspection report.

5. The zone inspection committee members will forward the endorsed inspection report to the chief inspection officer. The chief inspection officer will present the prospective member to the general membership for acceptance by a majority vote.
6. In the event of disapproval by the zone inspection committee or lack of endorsement by the zone membership, or the rejection of prospective member by the general membership, the chairmen will give written notice to the prospective member and outline any corrective steps which may be necessary to comply with membership requirements. The prospective member may reapply after fulfilling any recommendation or after one (1) year.

General Membership Requirements

A prospective member must have adequate resources to deal with ordinary emergencies which may arise. These will include but not be limited to:

- Adequate water supply
2. Emergency organization
3. Written emergency plan
4. Adequate communications
5. Any special protective equipment or chemicals

Periodic Inspections

1. Inspections will be done on an alphabetical basis of one (1) company from each zone every two (2) months. The name of the companies to be inspected will be announced at the previous general membership meeting.
2. The chief inspection officer will forward the names of the companies to the zone inspection committees.
3. The inspection committees will perform an on-site inspection which will include but not be limited to:
 - a. Water supply
 - b. Emergency organization
 - c. Written emergency plan
 - d. Adequate communication
 - e. Special chemicals or equipment
4. The zone inspection committee will inform the chief inspection officer of their findings. The zone inspection committee may make voluntary recommendations to the inspected company.
5. The chief inspection officer will report on all favorable inspections at the next general membership meeting.
6. Unfavorable inspections will be referred by the chief inspection officer and to the steering committee for action.

CONDITIONS UNDER WHICH ASSISTANCE WILL BE RENDERED

Assistance to any stricken plant or agency will be available and rendered only if a call or request is made via telephone or emergency radio by a responsible official of a member plant or agency.

CLASSIFICATION OF EMERGENCIES

Fires and emergencies of different degrees of magnitude are roughly classified below under the call designation which will be used on the CIMA emergency radio. It is vitally important that each member understands the classifications of emergencies and the operation of the Zone system, and has planned for emergencies so as to make the proper calls in each instance.

Note: Proper procedures for placing these calls are listed under "CIMA Radio Procedures".

Not to be Reported on Emergency Radio

Fires and emergencies which are reasonably expected to be controlled by in-plant forces with in-plant materials and equipment.

To be Reported on Emergency Radio

1. Zone Standby Alert

A fire or emergency which might be controlled with in-plant manpower and materials, but which has the potential of developing so that outside assistance is required. This call activates the CIMA Specialist Group.

2. Zone Assistance Call

A fire or emergency which is beyond the control of in-plant manpower and materials to the extent that specific assistance is required from members in the form of materials, equipment and/or manpower.

This call is issued in the form of a request for definite amounts of a specific type of equipment, materials and/or manpower. This call should be directed to the nearest source as listed in the manual. This call also activates the CIMA Specialist Group.

Equipment and/or manpower may be requested from other zones at the member's discretion.

3. Zone All-out Call

A major disaster where all assistance is required from that particular zone. This call also activates the CIMA Specialist Group.

4. All-Out Call

A major disaster where all resources of the entire organization will be required. This type of call should be very rare because of the excellent availability of resources within each zone. This call will activate the CIMA Specialist Group.

5. Civil Defense Alert

(Given only by the Civil Defense Corps.)

Indicates that an enemy attack is imminent' or that a disaster may require voluntary assistance from CIMA members. Plant Civil Defense Plans should be put into effect. This call does not activate the CIMA Specialist Group.

6. All Clear

To be given by the member who issued one of the above calls, when the particular emergency condition which promoted the original call no longer exists.

7. Community Awareness Emergency Response (CAER Alerts)

Most members of CIMA are actively involved in the CAER activities in their respective zones. A key part of the CAER program is quick notification of surrounding communities/facilities concerning incidents occurring inside a plant. Information is provided concerning both incidents that are visible and/or audible but pose no hazard, and those that could or do create a hazard external to the plant. The CAER program has adopted the following level system to clearly indicate the level of hazard present in any incident. These levels are provided for information purposes and should not be confused with CIMA Alerts.

Level 1 - Informational purposes only. An industrial incident is in progress at that facility which can be handled within the boundaries of the facility with no effect on areas outside the facility.

Level 2 - Standby alert. An industrial incident is in progress at that facility which appears that it can be handled within the boundaries of the facility. However, outside areas could be affected.

Level 3 - Full emergency condition. An industrial incident is in progress which will affect outside areas.

All Clear - The industrial incident previously reported has terminated and everything is back to normal.

Many CIMA members, for expediency in making CAER notifications to neighboring CIMA facilities, may choose to use the CIMA radio system. This is acceptable use of the system. However, IT MUST BE NOTED THAT THE ISSUANCE OF A CAER ALERT, REGARDLESS OF THE LEVEL, IS FOR AWARENESS ONLY AND DOES NOT CONSTITUTE A CIMA ALERT OF ANY TYPE. NO RESPONSE OF THE CIMA ORGANIZATION, INCLUDING CIMA SPECIALIST, IS APPROPRIATE FOR A CAER ALERT. CIMA member facilities must be aware that if they need assistance, either CIMA Specialist and/or equipment or other CIMA resources, they must issue the appropriate CIMA Alert (Standby or Assistance Call).

Several CIMA members have made arrangements with adjacent facilities that upon notification, roads can be quickly blocked by personnel from those facilities until law enforcement can respond. This request can also be made on the CIMA radio system and likewise, does not, in and of itself, constitute a CIMA Alert of any type.

COMMUNICATIONS SYSTEM

GENERAL

The CIMA radio system consists of three UHF repeaters located at separate sites. Each repeater consists of a UHF transmitter with receiver voting capabilities and satellite receivers located at each of the other repeater sites. All necessary site interconnections are made by microwave. Twenty-four hour battery backup for both repeater and microwave is provided at each site. The system is provided with both private-line and automatic numeric identification (ANI). Each transmitter transmits a unique identification number which is logged by a printer each time the unit transmits.

A total of five channels (three repeaters, two talkarounds) are available for use. The radio channels will be used as follows:

- Channel 1 Main Dispatch (Repeater) - Issue Standbys
- Request Assistance
- Issue All Clears
- Apparatus will indicate "Responding" when leaving their facility enroute to the stricken facility.
- Channel 2 - Tactical (Repeater) - Primary Incident Command Channel for incidents that occur west of Center Street in Deer Park and Sheldon Road in Channelview.
- Channel 3 - Tactical (Repeater) - Primary Incident Command Channel for incidents that occur east of Center Street/ Sheldon Road.
- Channel 4 - Talkaround for Channel 2 - Use as needed.
- Channel 5 - Talkaround for Channel 3 - Use as needed.

Should a member attempt to issue a call on Channel 1 and the Channel 1 repeater is inoperable, the call should be issued on Channel 2 and an announcement made that Channel 1 is out of service.

PROCEDURES

- Apparatus leaving their facility enroute to a stricken location will indicate "Responding" on Channel 1. They should then switch their radio to the channel being used for incident command and monitor while enroute. If a Staging Area has been established, apparatus should communicate their arrival to the Staging Officer face to face. If a Staging Area has not been established, they should communicate their arrival to Command on the Incident Command Channel. To minimize confusion, apparatus identifiers should consist of the member name followed by number, if desired (e.g. Celanese Ladder 1).

- If only one incident is working, Command may use the other Tactical Channel as needed. Usually this will be as a Support Channel. Functions not directly related to incident command such as Staging, Rehabilitation, etc. can be moved to the Support Channel and reduce congestion and confusion on the Incident Command Channel.
- If a second CIMA response occurs while another is in progress, the Incident Command Channel for the second incident will be the unused Tactical Channel regardless of the location in relation to Center Street/Sheldon Road.
- Channels 4 and 5 will be used at Command's discretion. Potential uses include:
 - Simplex operation if repeater goes down
 - Communications needs where high power/wide area broadcast of repeater is not wanted.

Since the need for the radio network would be greatest in event of telephone failure, and since conditions leading to telephone failure might well cause power failure also, all units should have alternate emergency power sources.

Mutual Aid Frequency Radios (154.280)

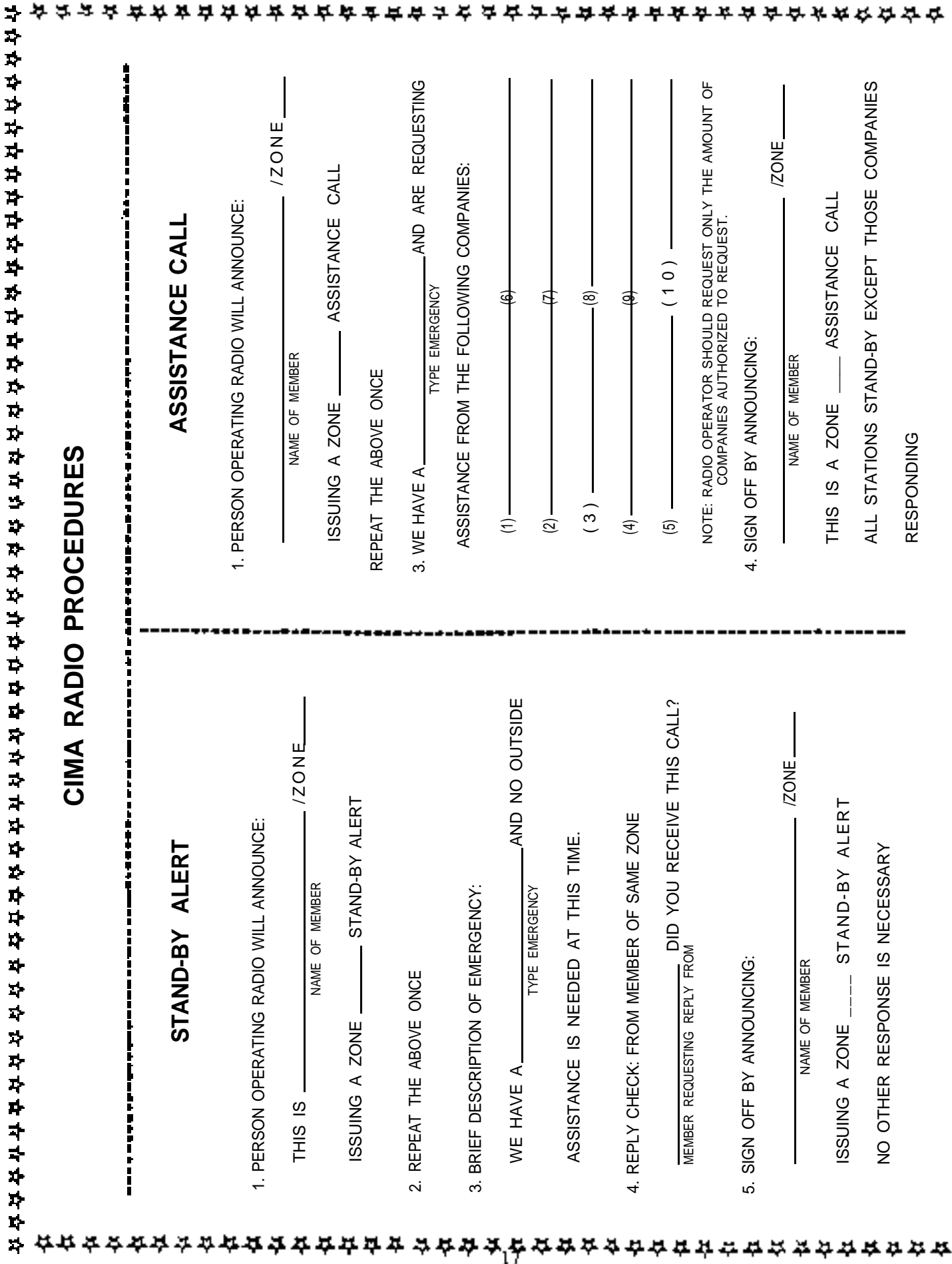
CIMA has approval to operate on the statewide mutual aid frequency, for tactical communications between CIMA members, and fire departments at an emergency. While these radios are not a membership requirement, they are strongly encouraged. They are for tactical communications only and may be used only at emergencies to coordinate activities. The Second Vice-Chairman should be provided a listing of such radios.

Communications Discipline

With the number of radios operating on the system, discipline is essential to provide clear communications and prevent confusion. Any station originating an alert call, as described under "Types of Calls", assumes "control" of the radio frequency for the duration of that emergency. Other stations should refrain from radio use unless directed to the control station.

Terminology, for each type of call, should be as indicated on the "CIMA Radio Procedures" sheet. A copy should be completed for each facility and kept at their CIMA radio location.

Civil Defense Alerts will be issued only by Civil Defense. No reply is necessary unless requested. Plant civil defense plans should be put into effect.



CIMA RADIO PROCEDURES

STAND-BY ALERT

1. PERSON OPERATING RADIO WILL ANNOUNCE:

THIS IS _____ / ZONE _____
NAME OF MEMBER

ISSUING A ZONE _____ STAND-BY ALERT

2. REPEAT THE ABOVE ONCE

3. BRIEF DESCRIPTION OF EMERGENCY:

WE HAVE A _____ AND NO OUTSIDE
TYPE EMERGENCY

ASSISTANCE IS NEEDED AT THIS TIME.

4. REPLY CHECK: FROM MEMBER OF SAME ZONE

_____ DID YOU RECEIVE THIS CALL?
MEMBER REQUESTING REPLY FROM

5. SIGN OFF BY ANNOUNCING:

_____ / ZONE _____
NAME OF MEMBER

ISSUING A ZONE _____ STAND-BY ALERT

NO OTHER RESPONSE IS NECESSARY

ASSISTANCE CALL

1. PERSON OPERATING RADIO WILL ANNOUNCE:

_____ / ZONE _____
NAME OF MEMBER

ISSUING A ZONE _____ ASSISTANCE CALL

REPEAT THE ABOVE ONCE

3. WE HAVE A _____ AND ARE REQUESTING
TYPE EMERGENCY

ASSISTANCE FROM THE FOLLOWING COMPANIES:

(1) _____ (6) _____

(2) _____ (7) _____

(3) _____ (8) _____

(4) _____ (9) _____

(5) _____ (10) _____

NOTE: RADIO OPERATOR SHOULD REQUEST ONLY THE AMOUNT OF COMPANIES AUTHORIZED TO REQUEST.

4. SIGN OFF BY ANNOUNCING:

_____ / ZONE _____
NAME OF MEMBER

THIS IS A ZONE _____ ASSISTANCE CALL

ALL STATIONS STAND-BY EXCEPT THOSE COMPANIES RESPONDING

CIMA RADIO PROCEDURES

ALL-OUT ZONE ALERT

1. PERSON OPERATING RADIO WILL ANNOUNCE:

THIS IS _____ /ZONE _____
NAME OF MEMBER

ISSUING A ZONE _____ CALL

2. REPEAT THE ABOVE ONCE

3. BRIEF DESCRIPTION OF EMERGENCY:

WE HAVE A _____ AND THIS IS AN ALL-OUT
TYPE EMERGENCY

ZONE _____ CALL

4. REPLY CHECK: FROM MEMBER OF SAME ZONE

_____ DID YOU RECEIVE THIS CALL?
MEMBER REQUESTING REPLY FROM

5. SIGN OFF BY ANNOUNCING:

_____ /ZONE _____
NAME OF MEMBER

THIS IS AN ALL-OUT ZONE _____ CALL

ALL STATIONS STAND-BY EXCEPT THOSE COMPANIES
RESPONDING

ALL CLEAR

1. PERSON OPERATING RADIO WILL ANNOUNCE:

_____ /ZONE _____
NAME OF MEMBER

OUR EMERGENCY SITUATION NO LONGER EXISTS WE
ARE ISSUING AN ALL CLEAR

REPEAT THE ABOVE ONCE

3. REPLY CHECK: FROM MEMBER OF SAME ZONE

_____ DID YOU RECEIVE THIS CALL?
MEMBER RECEIVING REPLY FROM

4. SIGN OFF BY ANNOUNCING:

_____ /ZONE _____
NAME OF MEMBER

THIS IS AN ALL CLEAR

NO OTHER RESPONSE IS NECESSARY

CALL SIGN

Daily Radio System Tests

Daily radio tests are conducted to ensure that each member's base radio is working properly and to check the operation of the repeaters and associated equipment. The tests also increase radio operator familiarity. Because of size, three tests are conducted with one-third of the members testing at each drill. Tests are conducted at 3:00 a.m., 10:00 a.m. and 6:00 p.m.

Responsibility for conducting the test, along with the test channel assignment and group assignments are indicated on the Radio Test Schedule which is published by the Second Vice Chairman at the beginning of each year.

The member conducting the test should begin the test using the following format:

1. "This is _____ All _____ schedule members
member conducting test (3 AM, 10 AM, 6 PM)
switch to channel _____ and standby for the daily radio test."
2. Each member is then sequentially called as listed on the respective schedule. The answering member should respond as follows:
* _____ received loud and clear (or however) _____
Member Name call letters
3. The member conducting the test would then respond by repeating the members' name followed by "Received" and would then call the next member listed on the schedule.
4. If a member does not respond, they should be called a second time. If still no response, the member conducting the test should repeat the member's name followed by "No Response" and then call the next member listed on the schedule.
5. At the conclusion of the test, the member conducting the test should announce:
"This concludes the _____ radio test. All members switch to
(3 AM, 10 AM, 6 PM)
Channel 1 and check that channel scan is activated, _____
call sign

RESPONSE TO CALLS

Operators receiving calls should notify appropriate officials according to prearranged plans. Companies electing to send aid should instruct their operators to advise the company originating the alert what type of assistance is being dispatched and, if possible, the estimated time of arrival.

COMMUNICATION RULES AND REGULATIONS

In addition to "Communications Discipline" outlined above, the following rules must be observed if the full utility of the system is to be realized and violations of Federal Communications Commission rules are to be avoided.

1. This communications system may be used only in the event of an emergency or for scheduled training drills as indicated in the "Classification of Calls" section. The system may never be used for routine business affairs.
2. All calls, announcements, and conversations must be as brief as possible consistent with good intelligibility. With the number of "party-line" stations, air time is valuable.
3. Always listen before transmitting. Never interrupt communications between other stations unless you have a real immediate emergency.
4. Members should use the member's name as the identifier on the communications system. Call letters are only used during non-emergency communications such as daily radio test. Call letters should never be used in lieu of members' name. Members having more than one facility under the same name must make it clear which facility is communicating (e.g. Occidental - Pasadena, Occidental - Deer Park, etc.)".
5. No profane, obscene language or disruptive communications may be transmitted over the communications system. This is prohibited by federal law.
6. Only persons so authorized by the CIMA representatives in each plant may use the communications system.
7. All pertinent rules and regulations of the Federal Communications Commission, as well as the instructions of the licensee and his duly authorized representatives must be observed at all times.

CIMA SPECIALIST GROUP

A group of specialists will be appointed by the Chairman of the organization.

The principal duties of these specialists will be to report to the scene of any fire or emergency situation which is reported on the CIMA emergency radio network. If the emergency scene is at any member's plant, these men will report to the plant entrance and will contact the responsible official who is at the plant at the time.

They will perform any of the following duties at the request of the plant official:

1. Handle all requests for aid from CIMA, including operation of the emergency radio.
2. Offer advice and counsel, handle special assignments.
3. Take over management of fire or emergency activities under the authority and direction of officials of the stricken plant.

One specialist will act as chairman of the group while the others assist him in any way possible.

Specialists will instruct the operators of the CIMA emergency radio at their home location to call them if an emergency call is placed in the network.

Specialists are required to respond to all alarms including "standby", "assistance" and "all-out" calls from each zone. Response to and arrival on the scene should be broadcast on the mutual aid frequency. The first arriving specialist will contact company officials to determine needs and broadcast a condition report to responding specialist.

AREA OF RESPONSIBILITY OF MEMBERS AND COOPERATING AGENCIES

In order to avoid confusion and to allow the organization to function efficiently in emergencies, the following areas of responsibility are designated:

OFFICIALS OF MEMBER PLANTS will be responsible for directing fire fighting or emergency activities or in unusual situations for requesting the CIMA Specialist Group to direct such activities. They will handle and control all photographs and news releases connected with any emergency within their facilities.

HARRIS COUNTY SHERIFF'S DEPARTMENT or local police departments will act as law enforcement agents assisted by city and municipal law enforcement groups in the control of traffic.

MUNICIPAL FIRE DEPARTMENTS in the CIMA area have certain responsibilities under state and local laws but CIMA members agree that for purposes of this organization they need not respond to any call placed over the CIMA emergency radio unless called by officials of a stricken plant which is within their area of jurisdiction.

In case municipal fire departments are called by the officials of a stricken plant outside their area of jurisdiction, their response will be on a voluntary basis.

LIABILITY

Each CIMA member will be responsible for the liability of its own employees and equipment in the same manner as employer-employee relations on the job, except as specifically indicated in Conditions of Membership, paragraph 8.

REPORTING AT STRICKEN PLANT

All aid reporting to the disaster struck plant or location will park as directed by the plant guards or officials and will act directly under the supervision of the officials of that plant or location. In all cases where response is made, the assistance must wait at the entrance of such plant or location until it receives instructions to enter. A completed Equipment/Personnel Sheet should be provided to company officials at time of entry.

RECEIVING AID

Any member requesting aid must designate a representative to meet such aid as is dispatched, provide a parking location, and/or directions to the emergency scene.

To receive aid, CIMA members' emergency plans or supplement to emergency plan, must have the following provisions:

- Designated representative(s) to receive responding CIMA officials and members to be responsible for liaison and coordination with the CIMA officials.

- Designated Fire Chief (a representative in charge of at-the-scene fire fighting activities).
- Designated CIMA Control Center at a location away from the emergency, having access to the distressed company's representative(s) and radio/telephone communications. Special communication vehicles of the CIMA organization should be nearby.
- Designated CIMA Command Post at a location at the emergency scene for liaison and coordination between the Fire Chief of the distressed company and CIMA Specialists and Representatives.
- Designated CIMA staging area to be a controlled area nearby or in radio contact with the Control Center to hold responding CIMA vehicles and personnel from which they can be dispatched to the internal emergency scene in a planned sequence.
- A designated representative of the distressed company that is familiar with the in-plant roads and units to escort CIMA vehicles and personnel to the scene and effect contact with the Fire Chief or CIMA Specialist.

REQUESTING ADDITIONAL AID FROM OTHER MUTUAL AID ORGANIZATIONS

Although the CIMA organization makes available to any member a large stockpile of emergency equipment, material and manpower, it is within the realm of possibility that specialized equipment or additional material, equipment and/or manpower might be needed in a major disaster.

1. The Chairman of CIMA will see that current manuals, equipment and personnel lists are exchanged with other Industrial Mutual Aid Organizations in the Texas-Louisiana area, and that this information is maintained at a central point.
2. Should a CIMA member or group of members need assistance from one of these organizations, such assistance may be requested by a responsible plant official, from the Chairman or Vice-Chairman (in the Chairman's absence) or from a member of the CIMA Specialist Group.
3. The officer or specialist receiving the request for additional aid will see that such aid is immediately requested from the nearest source, and will keep the requesting member advised as to when and how it will be delivered.
4. Requests for such aid, if the aid is furnished, carry the same responsibility for payment (see Conditions of Membership, paragraph 8,) as requests for CIMA aid from its participating members.

5. No Industrial Aid Organization is obligated to furnish aid to a CIMA member, and by the same token any aid furnished by a CIMA member in response to a request from a member of another Mutual Aid Organization would be on a volunteer basis.

RESPONSE TO EMERGENCIES AT NON-MEMBER FACILITIES

Request for CIMA aid from non-CIMA companies shall be directed to the Chairman. The Chairman will contact member companies adjacent to the stricken facility and determine if those companies can provide aid. It should be understood that member companies responding in this manner are not under the provisions of normal CIMA response, particularly paragraph 8, Conditions of Membership.

RECIPROCAL AID AGREEMENT WITH OTHER MUTUAL AID
ORGANIZATIONS ALONG THE TEXAS GULF COAST
ADOPTED APRIL 25, 1961

Purpose

This agreement is intended to clarify method and procedures to employ in obtaining industrial emergency aid by and from the Mutual Aid Organizations listed below:

Channel Industries Mutual Aid
.....Houston, Texas
Texas City Industrial Mutual Aid System
.....Texas City, Texas
Corpus Christi Refinery-Terminal Fire Company
.....Corpus Christi, Texas
Sabine-Neches Chiefs Association
.....Beaumont, Texas

Definitions

The word "subscriber" as used, means a Mutual Aid Organization.

The words "company" or "member" mean an industry belonging to, or within the area of any Mutual Aid Organization.

Method

The above subscribers agree that when an emergency occurs in an area of any individual subscriber and the local supplies are inadequate to control that emergency, the officer in charge of the affected subscriber, upon the authority of the company or member in emergency, may request fire fighting or medical supplies or equipment from another subscriber.

Where applicable, the officer in charge of the affected subscriber will inform the State Civil Defense Coordinator, through the State Highway Patrol Captain at the emergency area, of the requests made of other subscribers.

Transportation of such equipment and supplies shall be from the location of the lending subscriber to a point designated by the borrowing subscriber with the express understanding that at no time shall transportation facilities and operators be subjected to undue hazard by reason of location of destination.

Responsibility

A request for equipment and supplies originating from the officer in charge of the affected subscriber at the request of the member or company in emergency shall be the binding agreement between the member or company. The requesting member or company shall make reimbursement either in cash at current prices or in kind, to the lending member or company for equipment and supplies received.

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NOTE: In the implementation of the above agreement, current officers of each Mutual Aid Organization must understand that no call for assistance should be originated without the request of a responsible official of the distressed company. This entails the probability of being subpoenaed to testify concerning the authenticity of the request. Since reimbursement for any aid furnished is to be based upon supplies and equipment received, all Mutual Aid officers should advise company officials who request aid that they should make inventory and give receipt upon delivery.

CIMA EMERGENCY PLAN

CIMA OFFICERS AND SPECIALISTS PROCEED TO LOCATION UPON RECEIPT OF A STANDBY ALERT

CIMA Chairman

- Upon arrival, contact the distressed company's officials and provide coordination assistance, information, and recommendations as needed.
- CIMA spokesman.

First Vice-Chairman

- Upon arrival, assume Chairman's duties in absence of Chairman.
- Provide coordination assistance where needed.

Second Vice-Chairman

- Upon arrival, establish communications (radio/telephone) as needed. Project potential requirements for communications.
- Liaison and coordination with the CIMA Chairman.

Specialists

- Respond per Specialist Group Section.

CIMA Assisting Vehicles

- Responds upon specific assistance calls and "all-out" calls.
- Vehicles should have designated leader to be spokesman and coordinator of the crew and to be supervised by a company official of the distressed company and/or the CIMA Specialist.
- The Equipment/Personnel sheet should be completed in duplicate and given to a company official at the gate at time of entry.

DEFINITIONS

Company Representative

Official(s) or designated representative(s) of distressed company having responsibility of liaison and coordination with CIMA.

CIMA Control Center

A location off-site of the emergency having access to the distressed company's representative(s) and radio/telephone communications.

Special communication vehicles of CIMA organization should be near by.

CIMA Command Post

A location at the emergency scene for liaison and coordination between the Fire Chief of the distressed company and the CIMA Specialists/Representatives. CIMA Specialist's vehicles may be used for this purpose.

Fire Chief

The distressed company's representative in charge of at-the-scene fire fighting activities.

Under certain circumstances, the affected company may designate a CIMA Specialist as acting Fire Chief under authority and overall direction of the officials of the stricken company.

CIMA Staging Area

A controlled area nearby or in radio contact with the Control Center to hold responding CIMA vehicles and personnel from which they can be dispatched to the internal scene in a planned sequence.

Company Escort

A designated representative of the distressed company that is familiar with the in-plant roads, units, and personnel to escort CIMA vehicles and personnel to the scene and effect contact with the Fire Chief or CIMA Specialist.

- C. How can the Command Post be identified?
 - 1. At location of plant fire truck?
 - 2. Flashing light?
 - 3. Flag or sign?

Although not specifically required for CIMA purposes, a partial list of some of the other problems which should be considered follows:

IV. Alarms

- A. Has a means of announcing fires and emergencies to all employees been provided?
- B. Do employees know what is expected of them when the alarm sounds?

V. Evacuation

- A. Could a serious hazard exist during an emergency which might call for evacuation of the plant?

VI. Fire Fighting

- A. Are employees organized and trained to fight fires?
- B. Is necessary equipment available?

VII. Communications (In-Plant)

- A. How would communications be handled if telephones are out?

VIII. First Aid

- A. Are personnel trained in first aid?
 - 1. On call?
 - 2. On all shifts?

NOTE: CIMA members offer first aid personnel and supplies if in-plant first aid personnel are overtaxed.

IX. Rescue

- A. Are in-plant personnel trained to handle rescue operations in case men are trapped?

X. Public Relations

- A. Who will handle inquiries from the public and families of employees during daylight hours, night shift, weekends and holidays?
- B. Who will handle reporters?

Complete lists covering all the problems which might be encountered in emergencies are available in various publications by Civil Defense and others.

Copies of Emergency Procedures Manuals of various CIMA members may be obtained by contacting the CIMA Chairman.

Appendix C

CIMA Zone List

(Zone 2 List of Members and Equipment)

CIMA ZONE LIST

ZONE 2

FIRE

FOAM PUMPER

- Lyondell Petro, Houston 1250 GPM, 1000 gals. Universal, 600' 5"
1000 GPM, 1000 gals. ATC
- Hill Petroleum 1000 GPM, 1000 gals. AFFF
- Crown Central 1000 GPM, 1000 gals. ATC
- Ethyl 1000 GPM, 1000 gals. XL-3
- GATX, Pasadena 750 GPM, 1000 gals. XL-3

WATER PUMPER

- Goodyear, Houston 750 GPM, 500 gals. water, 40 gals. AFFF
- Houston Fire Dept. 1000-1250 GPM, 500 gals. water
- Pasadena Fire Dept. 2 Engines-1500 GPM, 500 gals. water, 1000' 5"
- Texas Petrochemicals 750 GPM, 500 gals. water, 80 gals. PSL
- Mobile Chemicals, Houston 750 GPM, 250 gals. water, 50 gals. 3% Protein
- Lyondell Petro, Houston 1000 GPM, 1000' 5"

FOAM AERIAL

- Lyondell Petro, Houston 50', 1000 GPM, 1000 gals. XL-3
- GATX, Pasadena 76', 1750 GPM, 450 gals. ATC, 700' 5"
- Phillips Chemical 85', 1250, 1000 gals. water, 250 gals. ATC

WATER AERIAL

- Houston Fire Dept.
- Pasadena Fire Dept. 65', no pump

FOAM TANKER

CIMA ZONE LIST
ZONE 2 - FIRE

DRY CHEMICAL/TWIN AGENT

FOAM TRAILER

- Hill Petroleum 500 gals. XL-3 (Tank)
- Crown Central 2-500 gals. ATC
- Georgia Gulf 500 gals. XL-3

FOAM CONCENTRATE (RESERVE)

- Lyondell Petro, Houston 730 gals. ATC (dumpster)
730 gals. 3% AFFF (dumpster)
730 gals. PSL (dumpster)
1680 gals. XL-3 (dumpster)
- Hill Petroleum 1000 gals. XL-3 (drums)
- Ethyl 500 gals. XL-3
- GATX, Pasadena 1000 gals. XL-3

SPECIAL

- Air Products, Houston Cherry Picker
Backhoe
- Harris Co. Fire Marshal Arson and Communication Van
- Lyondell Petro, Houston Winch Truck
Welding Truck
Truck crane, 7.5 ton with 40' boom, 4-wheel drive
- Southern Pacific Emergency Equipment Trailer

EMS/RESCUE

AMBULANCE

- Simpson Paper

RESCUE

- Simpson Paper
- Lyondell Petro, Houston Heavy duty rescue, first aid equipment, hose line and SCBA, cartridge respirators, proximity and acid suits
- Pasadena Fire Dept. Heavy rescue, first aid van
- Phillips Chemical

AMT-1000-201

Air Products Manufacturing Corp.

Date		Name of Plant or Group	
P. G. Pydzewski		477-6861	477-6861
SENIOR PLANT OFFICIAL		PHONE NUMBER	Night Number
Rev Murphy 477-6861		P. O. Box 3326, Pasadena, Texas 77501	
CIMA REPRESENTATIVE & PHONE NUMBER		MAILING ADDRESS	
R. F. Jenny		1423 Hwy 225, Pasadena, Texas 77506	
ALTERNATE CIMA REPRESENTATIVE		STREET ADDRESS	
None		Zone 2	
ALTERNATE CIMA REPRESENTATIVE		ZONE LOCATION	
Main Gate - Security Office		477-6861	
CIMA RADIO LOCATION		PHONE NUMBER AT RADIO LOCATION	

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FCAM/DRY CHEMICAL
----------------------------	---------------------------

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
<ul style="list-style-type: none"> 300 - polyethylene Burlap Bags - Sand 3 - Disaster Emergency Supply Boxes 1 - Full Acid Sulfic acid over self-contained breathing unit 	<ul style="list-style-type: none"> 2 - 175 cu. ft. Mucka Wheel Extinguisher 400 BC 4 - 150 lb. P/K Wheel Extinguisher 140 BC 1 - 30 gal. J-X Foam Generator with expansion foam nozzle

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
	<ul style="list-style-type: none"> 12 - Scott Air Paks (Pres. Demand) 4 - Wheeled Breathing Air Units each containing 2000 cu. ft. cylinders 2 man manifold, 100' hose with breathing tubes and pressure demand regulators.

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

- 1 - 1/2 ton pickup truck
- 1 - 3/4 ton pickup truck
- 1 - Cherry Picker; 1 backhoe
- 1 - Station Wagon equipped with first aid supplies

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154.260)		
0		5	Days
1 Base	0		
1 Portables	0 Portables	2	Nights
0	0		
0 Mobiles	0 MOBILES		

NOVEMBER 1987

Crown Central Petroleum Corp.

Page	Number PBAE or Group
T. W. Jonstater	472-2451 472-2461
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
Joseph A. Drick 920-3937	P. O. Box 759, Houston, Texas 77251
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
J. J. Galsher 472-2461 Ext. 1592	111 Red Bluff, Pasadena, Texas
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Main Gate	472-2561 x 1310
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOM/DRY CHEMICAL
1 - 1,000 gpm Pumpar	2 - 500 gal. foam trailers 3M ATC
1,000 gal. 3M ATC	500 lb. Purple X
2,000' 3" hose MP	
500' 2 1/2" hose MP	
400' 1 3/4" hose MP	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
3 - LM 500 hydro foam nozzles	1 - Portable light plant
1 - 1,000 hydro foam nozzle	
2 - 1,000 gpm multiversals	

AMBULANCE/RESCUE EQUIPMENT	BREATHING AID EQUIPMENT
	6 MSA air packs

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

1 - 6 passenger carryall

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154,283)	FD	Days
0 Base	0	10	Days
2 Portables	1 Portables	10	Nights
2 Mobiles	1 Mobiles		

NUMBERS (VOT)		Ethyl Corporation	
Date		Member Plant or Group	
G. B. Hunt		920 5730	420 5155
SENIOR PLANT OFFICIAL		PHONE NUMBER	Wght Number
J. D. Wheat	920-5140	P. O. Box 472	
CIMA REPRESENTATIVE & PHONE NUMBER		MAILING ADDRESS	
A. L. Mack	920-5143	1100 N. South Ave, Pasadena, Texas 77501	
ALTERNATE CIMA REPRESENTATIVE		STREET ADDRESS	
		Zone 2	
ALTERNATE CIMA REPRESENTATIVE		ZONE LOCATION	
Main Gate		920-5155	
CIMA BASED LOCATION		PHONE NUMBER AT BASIC LOCATION	

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
1 - 1,000 gpm National Foam Truck 1,100 gal. Protein foam III 1 - 1,100 gpm foam cannon 1 - 500 gpm foam nozzle 1500' hose & 1 1/2" NST & nozzles 500' hose & 1/2" NST & nozzles	504 gal. XI-S foam 1000 lbs. Ansol Dry Chemical plus 500 or 50 lb. containers

OTHER EQUIPMENT AVAILABLE

PORTABLE EQUIPMENT

Portable monitors on request

AMBULANCE/RESCUE EQUIPMENT

BREATHING AIR EQUIPMENT

4 - 30 minute Scott Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (134,280)		
<u>0</u>		<u>5</u>	Days
<u>3</u> B19A		<u>2</u> Portables	
<u>2</u> Portables		<u>6</u> M'ghts	
<u>2</u> Mobiles			

K.C. 11/87

Date	Member Plant or Group
E. A. Konderla, General Manager	920-4308 920-4308
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
Milt Deman 920-4314	P. O. Box 1959 7225th
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
E. L. Rinehart	3503 Pasadena Freeway
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
	920-4308
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
700' 2 1/2" hose 600' 1 1/2" hose	1 - foam storage trailer with 500 gals. XL - 3X Protein foam

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
	1 - Scott Air Pak (30 min.)

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	NUTRAL AID (154,280)		
0		2	Days
1	0		
Portables	0	1	Nights
0	0		
Mobiles	Mobiles		

Date	Member Plant or Group
M. J. Grant	475-5412/3/4
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
M. Lewis 475-5412/3/4	P. O. Box 5397, Houston, Texas 77252
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
D. Cook	Information Not Provided
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
Bob Leams 475-5421	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Guard House	475-5412/3/4
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT	
PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
1 - Truck, 750 gpm Pumper with 40 gal. Foam Tank, 1,200' 2 1/2" Fire Hose	80 gal. AFFF SX
2 - Proximity Fire and Rescue Suits	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
2 - Complete Rollglass Rescue Kit	1 - Resuscitator
12 - Spare SCBA Cylinders	3 - 30 Minute Survivor Air Packs
2 - Confined Space Rescue Units	4 - Spare Cylinders
1 - Stokes Basket	
20 - ECA's	
1 - Paramedic	
2 - Proximity Suits	
5 - ECA's	

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL
CIMA	MUTUAL AID (754,280)	
Base		7 Days
Portables	Portables	
Mobiles	Mobiles	7 Nights

NUMBER 1701

Harris County Fire Marshall's Office

Date	Member Plant or Group
J. J. Pruitt	477-4882 221 5030
SENIOR PLANT OFFICIAL 469-7861	PHONE NUMBER Night Number
J. J. Pruitt 477-4882	302 E. Shaw, Room 210, Pasadena, TX 77506
CJMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
S. A. Lawson	302 E. Shaw
ALTERNATE CJMA REPRESENTATIVE	STREET ADDRESS
R. L. Bailey	Zone 2
ALTERNATE CJMA REPRESENTATIVE	ZONE LOCATION
No CJMA Radio	
CJMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CJMA CALL OUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
1000 gal. pumper - Geneva Park VFD	
1000 gal. pumper - Cloverleaf VFD	
1250 gal. pumper - Channelview VFD	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
1 21 p.u.h. 77506	

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT
1 Arson and Communication Van

COMMUNICATIONS EQUIPMENT	PERSONNEL
CJMA MUTUAL AID (15+2BD)	
0 Base	3 Days
0 Portables	3 Portables
0 Mobiles	17 Mobiles
	8 Nights

NOVEMBER 1987

Larrie County Sheriff's Department

Date	Member Plant or Group	
Capt. E. A. Maceluso	455-8050	22-6000
SENIOR PLANT OFFICIAL	PHONE NUMBER	Night Number
Capt. E. A. Maceluso	14350 Wallisville Rd, Houston, Texas 77049	
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS	
Lt. S. E. Baird	14350 Wallisville Rd, Houston, Texas 77049	
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS	
Lt. C. W. Shelton	Zone 2	
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION	
Information Not Provided	Information Not Provided	
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION	

EQUIPMENT AND APPROVAL AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
Sheriff's Department Personnel	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

Marked Patrol Units

COMMUNICATIONS EQUIPMENT		PERSONNEL
CIMA	RUTUAL LTD (154,280)	
Base	1	Days
Portables	1	Nights
Mobiles	1	

KLC 11/87

NOVEMBER 1987

Hill Petroleum Company

Date	Member PLANT OR Group
Ray Glasscock	923-3506 923-6641
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
S. E. Moore 923-3333	P. O. Box 3038, Houston, Texas 77262-3038
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
R. Hopkins	9701 Manchester
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
R. McGee - J. McHikle	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Main Gate	923-3506/6641
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
1 - 1000 gal. foam pumper (AFFF)	1,000 gal. foam (55 gal. drums XL-3)

OTHER EQUIPMENT AVAILABLE

PORTABLE EQUIPMENT

1 - 500 gal. Foam Trailer (XL-3 Foam)
 4 - 1250 GPM Monitors

AMBULANCE/RESCUE EQUIPMENT

BREATHING AIR EQUIPMENT

2 - Scott Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

1 - 3/4 Ton Emergency Response Van

COMMUNICATIONS EQUIPMENT

PERSONNEL

CIMA	MUTUAL AID (154,280)	
Base	2	30 Days
2 Portables	2 Portables	
Mobiles	1 Mobiles	30 Nights

Date		Member Plant or Group	
D. F. Smith		475-4111	475-4111
SPRINKLER PLANT OFFICIAL		PHONE NUMBER	Home Number
R. L. Patrick 475-4847		P. O. Box 2451, Houston, Texas 77252-2451	
CIMA REPRESENTATIVE & PHONE NUMBER		MAILING ADDRESS	
Ellis Pellerin 475-4354		12000 Loundale	
ALTERNATE CIMA REPRESENTATIVE		STREET ADDRESS	
None		Zone 7	
ALTERNATE CIMA REPRESENTATIVE		ZONE LOCATION	
Main Gate		475-4111	
CIMA RADIO LOCATION		PHONE NUMBER AT RADIO LOCATION	

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE/STANDBY CHEMICAL
1 - 1000 gpm SBI telescopic pump with 1000 gal. of 3% Fluoroprotein foam	1 - 8 Ton Dumpster Truck
1 - 1000 gpm Pumper with 1000 gal. light water ATC	1 - 730 gal. Dumpster of Light Water ATC Conc.
1 - Pumper with 750 gpm hose self-contained water pump Angus 1000 gpm Foam Cannon and 825 gal. 3% Fluoroprotein foam	1 - 730 gal. Dumpster of 5% Light Water Conc.
	1 - 730 gal. Dumpster of 1% Light Water Conc.
	2 - 840 gal. Dumpsters of X-3 Fluoroprotein concentrate

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
1 - Foam Pumper, 1250 gpm, 1000 gals. universal foam, 600' 5" hose	6 - 5700 509 gpm wheeled monitors
1 - Water Pumper, 1000 gpm, 1000' 5" hose	4 each - 350 lb. and 150 lb. Purple MC Fire Extinguishers

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
1 - Emergency Equipment Van containing Bunker gear, Cartridge Respirators, SCBA Air Masks, Hose Line Air Masks, Proximity Suits, Acid Suits, Eye and Ear Protection	Heavy Duty Rescue Equipment and First Aid equipment and Breathing Air Bottle Bank Also see AMBULANCE/RESCUE EQUIPMENT

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

1,000' of 6" Spill Boom; 2 - Trucks, 2 1/4 Ton Hydraulic Tailgate; 1 - Wheel Truck, 10-Ton; 1 - Portable Welding Truck, 300A Engine Drive Welding Machine; 1 - Truck Crane, 7.5 Ton with 40' boom and 4-wheel drive

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154.280)		
_____	_____	10	Days
_____	16	_____	_____
_____	3	10	Nights
_____	_____	_____	_____

ALTERNATE CIMA REPRESENTATIVE

John Walker

STREET ADDRESS

Zone 2

ALTERNATE CIMA REPRESENTATIVE

Phillips Chemical

ZONE LOCATION

CIMA RADIO LOCATION

PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT

RESERVE FOAM/DRY CHEMICAL

1100' of 2 1/2" hose

3 - 250 gpm FV-230 Foam Nozzles

1 - 250 gpm 2 1/2" Nozzles

OTHER EQUIPMENT AVAILABLE

PORTABLE EQUIPMENT

2 - 150 lb Dry Chemical Extinguishers

AMBULANCE/RESCUE EQUIPMENT

BREATHING AIR EQUIPMENT

3 - Scott Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

3 - Pickup Trucks

COMMUNICATIONS EQUIPMENT

PERSONNEL

CIMA

MUTUAL AID (154,200)

Base

3

Days

Portables

Portables

Mobiles

Mobiles

3

Nights

NOVEMBER 1987

Kobay Synthetics, Houston

Date	Member Plant or Group
11/2/87	477-8321 277-8921
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
C. L. Reuter 477-8321	8701 Park Place, Houston, Texas 77017
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
C. P. Craig	8701 Park Place, Houston, Texas 77017
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
19th Guard Office	477-8321 ext 311 or 312
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MATERIALS AVAILABLE FOR CIMA CALLS

PRIMARY RESPONSE EQUIPMENT

RESERVE PCAMORY CHEMICAL

Manpower to help assist with Texas Petrochemical Equipment

OTHER EQUIPMENT AVAILABLE

PORTABLE EQUIPMENT

2 - Portable Monitors

AMBULANCE/RESCUE EQUIPMENT

TREATING AIR EQUIPMENT

4 - Scott Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT

PERSONNEL

CIMA	MUTUAL AID (154.280)	
0		6
3 Base		DAY
0 Portables	3	Portables
0 Mobiles	0	Mobiles
		3
		NIGHT

NOVEMBER 1987

Mobil Chemicals, Houston

Date	Number Plant or Group
Call Center	475-6001 475-9026
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
B. M. Murff 475-6051	9822 LaPorte Fwy, Houston, Texas 77017
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
Bil. Theado	9822 LaPorte Fwy, Houston, Texas 77017
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
V. L. Burdette	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Guard House	475-6058
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
750 gpm pumper	410 gallons 3% foam
300' 1 1/2" hose NST	
500' 2 1/2" hose NST	
250 gallons water	
50 gallons at 3% propane foam	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
	3 - monitors 500 gpm each

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
	4 - 30-minute SCBA

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (594,000)		Days
0		2	
2	0		
0	0	1	
			Alerts

KLC 11/87

Date	Member Plant or Group
L. D. Minson	920-5311 920-5431
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
R. R. LaClair 920-5434	P. O. Box 3447, Pasadena, Texas 77501
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
J. A. Marcin	2001 Jackson Road
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
None	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Security Office	920-5431 or 920-5432
CIMA RADIO LOCATION	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOUNDRY CHEMICAL
50' x 1/2" hose M&T	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
	3 - Scott Air Paks - 30 Minute 3 - Spare Bottles

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154.280)		
1 888#		2	Days
1 Portables	Portables		
1 Mobiles	Mobiles		Nights

Pasadena Fire Department

Date	Member Name or Group
J. Isbell	477-1122 477-1511 x 554
SENIOR PLANT OFFICIAL	PHONE NUMBER Night Number
Jay Goyer 475-5554	P. O. Box 672, Pasadena, Texas 77502
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS
	Information Not Provided
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
	Zone 2
ALTERNATE CIMA REPRESENTATIVE	ZONE LOCATION
Information Not Provided	477-1122
CIMA PHONE LOCATION	PHONE NUMBER AT PHONE LOCATION

EQUIPMENT AND NUMBERS AVAILABLE FOR FIRE FIGHTING

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
2 - 1,250 gpm pumps with 2,400' of 1" hose	
1 - 1,000 gpm with 2,400' of 2 1/2" hose	
1 - 250 gpm pump with Hurst Tool	
1 - 55' Aerial	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
	2 - 3 Inlet Multi-Versa with 1,000 gpm fog nozzles and snapper tips
	200 gallons of 3M AFFF, 3%

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
1 - Rescue and First Aid Van, Heavy equipped	

ADDITIONAL EQUIPMENT/SPECIAL EQUIPMENT

- 2 - Fire Chief Cars with 2 channel radios
- 1 - Utility Truck with 50 KW Power Plant with 3 1,500 Watt Lights
- 3 - 100' Heavy Duty Extension Cords with reels
- 1 - 5 bottle Cascade System for Scott Air Paks

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154-280)	Days	Nights
Base	7	_____	_____
Portables	7	_____	_____
Mobiles	_____	_____	_____

150 man volunteer dept.
on call

Date		Phillips Chemicals	
Date		Member Plant or Group	
Bill Price		475-3666	475-3663
SENIOR PLANT OFFICIAL		PHONE NUMBER	Night Number
Jesse Beretta	475-3695	P. O. Box 792, Pasadena, Texas 77501	
CIMA REPRESENTATIVE & PHONE NUMBER		MAILING ADDRESS	
R. A. Wiedenstein	475-3696	1400 Jefferson	
ALTERNATE CIMA REPRESENTATIVE		STREET ADDRESS	
L. W. Smith	475-3910	Zone 2	
ALTERNATE CIMA REPRESENTATIVE		ZONE LOCATION	
Security Main Gate		475-3663	
CIMA RADIO LOCATION		PHONE NUMBER AT RADIO LOCATION	
EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT			
PRIMARY RESPONSE EQUIPMENT		RESERVE FOAM/DRY CHEMICAL	
1 - Truck 85' Snorkel, 1,500 gpm Pumper, 6" Suction 4 1/2" Adaptor, 2 1/2" Discharge 1,000' 2 1/2" hose with MS1 Threads 350 gallon foam tank with AFFF/ATC			
OTHER EQUIPMENT AVAILABLE		PORTABLE EQUIPMENT	
1 - Water Pumper, 1250 gpm pump, 1000 gals. water, 250 gals. ATC foam tank with Hydro- foam nozzle and line proportioner		1 - Portable Light Generator 1500 KW	
AMBULANCE/RESCUE EQUIPMENT		BREATHING AIR EQUIPMENT	
Rescue/Communications Vehicle 1 - Portable Light Generator - 1500 KW 12 - 30 minute Scott Air Pak cylinders 1 - Plant Radio System - Mobile Unit 1 - CIMA Radio system - mobile unit Rescue Equipment		3 - 30 minute Scott Air Paks	
AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT			
Ford Response Vehicle 110 gals. AFFF-ATC 2 - Scott Air Paks - 30 minute Rescue Equipment/Fire Extinguishers 600' 2 1/2" hose with MS1			
COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	1	FUTJAL AID (54.250)	
1	Base	3	4 Days
5	Portables	1	6
2	Mobiles	1	Nights

ELC 11/87

Date	Member Plant or Group
G. LaLouche	475-6200
SENIOR PLANT OFFICIAL XXXXXXXXXX 475-6545	PHONE NUMBER Night Number
CIMA REPRESENTATIVE & PHONE NUMBER XXXXXXXXXX 475-6384	MAILING ADDRESS
ALTERNATE CIMA REPRESENTATIVE	North Shaver at Washburn Tunnel
Information Not Provided	STREET ADDRESS
ALTERNATE CIMA REPRESENTATIVE	Zone 2
Security Office	ZONE LOCATION
CIMA RADI0 LOCATION	475-6200
	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
Rescue Truck and Equipment	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
---------------------------	--------------------

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
Ambulance Fully Equipped	2 - 30-Minute Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT	PERSONNEL
CIMA	MUTUAL AID (154.280)
1 Base	1 Day
Portables	3 Portables
Mobiles	3 Mobiles
	3 Nights

Title	Member Plant or Group	
H. L. Bart, Asst. Mgr. H.H.C.	223-6504	223-6000
SENIOR PLANT OFFICIAL	PHONE NUMBER	Wight Number
L. E. Green	913 Fred-Kim Hous. Tr 79042	
CIMA REPRESENTATIVE & PHONE NUMBER	MAILING ADDRESS	
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS	
ALTERNATE CIMA REPRESENTATIVE	Zone 3	
CIMA BASED LOCATION	ZONE LOCATION	
	PHONE NUMBER AT BASED LOCATION	

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CHECKOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
-----------------------------------	----------------------------------

OTHER EQUIPMENT AVAILABLE	BASIC EQUIPMENT
----------------------------------	------------------------

Emergency trailer #2192
 60' Van with 500' hose, 1 1/2" NSF
 1 - 10,000 gal. water tank "Fire Car" by rail only

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
-----------------------------------	--------------------------------

2 - SCBA

ALTERNATIVE EQUIPMENT/SPECIAL EQUIPMENT

COMMUNICATIONS EQUIPMENT		PERSONNEL
---------------------------------	--	------------------

CIMA	MUTUAL AID (154.280)	
0	0	2 Days
0 Base	0 Portables	
0 Portables	0 Mobsles	2 Nights
0 Mobsles		

NOVEMBER 1987

Stauffer Chemical

Date	Member Plant or Group
O. C. Riley	928-3411
SENIOR PLANT OFFICIAL	928-3411
R. L. Garde	PHONE NUMBER
CIMA REPRESENTATIVE & PHONE NUMBER	Night Number
T. G. Hayden	P. O. Box 5275, Houston, Texas 77012
ALTERNATE CIMA REPRESENTATIVE	MAILING ADDRESS
R. L. Devalcourt	8615 Manchester
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
WB Unit Control Room	Zone Z
CIMA RADIO LOCATION	ZONE LOCATION
	928-3411 ext. 412
	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA COLLECT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
	15 - 5 gal. cans foam 6/10% Protein 5 High Expansion 5 1oz. NAZ foam

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT
	1 - Portable Foam Generator 4 - CO ₂ Extinguishers 6 - Dry Chemical Extinguishers

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
4 - Stretchers 1 - Litter Basket Miscellaneous First Aid Supplies	6 - Scott Air Paks

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

1 - Cherry Picker
1 - Mac. Payloader

COMMUNICATIONS EQUIPMENT		PERSONNEL
CIMA	MUTUAL AID (154.200)	
0		4
1	0	Days
0	0	1
0	0	Nights

KLC 11/87

NOVEMBER 1987

Texas Petrochemical Corporation

Date	Member Plant or Group
J. T. Shelton	477-9211
SENIOR STAFF OFFICIAL	PHONE NUMBER
H. C. Lunnis 475-7720	477-9211
CIMA REPRESENTATIVE & PHONE NUMBER	NIGHT NUMBER
W. E. Gebhardt	3800 Park Place Blvd., Houston, TX 77017
ALTERNATE CIMA REPRESENTATIVE	MAILING ADDRESS
G. Miller	3800 Park Place Blvd., Houston, TX 77017
ALTERNATE CIMA REPRESENTATIVE	STREET ADDRESS
Main Gate, Guard	Zone 2
CIMA RADIO LOCATION	ZONE LOCATION
	475-7753 (Days); 477-9211 (Nights)
	PHONE NUMBER AT RADIO LOCATION

EQUIPMENT AND MANPOWER AVAILABLE FOR CIMA CALLOUT

PRIMARY RESPONSE EQUIPMENT	RESERVE FOAM/DRY CHEMICAL
1 - Truck, 750 gpm Pumper, 80 gal. 6% PSL Foam 500 gals. of Water	440 gal. Universal 3%/6%
1 - 1000' Hose 2 1/2" HS 600' Hose, 1 1/2" HS	

OTHER EQUIPMENT AVAILABLE	PORTABLE EQUIPMENT

AMBULANCE/RESCUE EQUIPMENT	BREATHING AIR EQUIPMENT
1 - Resuscitator	8 - 30 min. Air Paks 4 - 4.5 hr

AUTOMOTIVE EQUIPMENT/SPECIAL EQUIPMENT

3/4 Ton Pickup

COMMUNICATIONS EQUIPMENT		PERSONNEL	
CIMA	MUTUAL AID (154,280)		
0		6	Days
3	1		
	Portables		
0	1	6	Nights
	Mobiles		

XLC 11/87

Appendix D

**CIMA - List of organizations responding
to the Phillips explosion/fire.**

C I M A

CHANE INDUSTRIES MUTUAL AID

CHAIRMAN

L. Douglas Miller
Aristech Chemical Corp.
8811 Strang Rd.
La Porte, Texas 77571
930-2003

VICE CHAIRMAN

Ron Taylor
B. F. Goodrich
2400 Miller Cutoff Road
La Porte, Texas 77571
476-8004

SECOND VICE CHAIRMAN

A. E. "Gene" Sonka
Rohm and Haas Texas, Inc.
P. O. Box 672
Deer Park, Texas 77536
476-8 148

OCTOBER 26, 1989

The following lists of organizations; Industrial, Municipal and Governmental organizations, responded to the Phillips Petroleum, Pasadena Explosion and Fire, October 23, 24; & 25th, 1989:

HOECHST CELLANESE - CLEAR LAKE
HOECHST CELLANESE - BAYPORT
CROWN CENTRAL
LUBRIZOL - DEER PARK
LUBRIZOL - BAYPORT
PETROLITE CORPORATION - BAYPORT
ARISTECH - LA PORTE
ARISTECH - PASADENA
HILL PETROLEUM
LYONDELL PETROCHEMICAL - CHANNELVIEW
LYONDELL PETROCHEMICAL - HOUSTON
MERICHEM COMPANY
FERMENTA
GEORGIA GULF
SOLTEX
B F GOODRICH - LA PORTE
SHELL - DEER PARK
OCCIDENTAL - PASADENA
OCCIDENTAL - LA PORTE
OCCIDENTAL - DEER PARK
ICI AMERICAS - BAYPORT
PENNWALT
CAIN CHEMICAL
AIR PRODUCTS - LA PORTE
AIR PRODUCTS - PASADENA
ARCO CHEMICAL CORPORATION - CHANSELVIEW
CHEVRON CHEMICAL - CEDAR BAYOU
E. I. DUPONT - LA PORTE
ETHYL - PASADENA
EXXON CO. USA - BAYTOWN

WARREN PETROLEUM - MT. BELVIEU
BARBERS HILL - (VOLUNTEER FIRE DEPT.)
ITC - HOUSTON
KLEIN - (VOLUNTEER FIRE DEPT.)
CHAMPIONS - (VOLUNTEER FIRE DEPT.)
PONDEROSA - (VOLUNTEER FIRE DEPT.)
MAGNOLIA - (VOLUNTEER FIRE DEPT.)
SEABROOK - (VOLUNTEER FIRE DEPT.)
DEER PARK - (VOLUNTEER FIRE DEPT.)
JACINTO CITY - (VOLUNTEER FIRE DEPT.)
CITY OF LA PORTE - (VOLUNTEER FIRE DEPT.)
CLOVERLEAF - (VOLUNTEER FIRE DEPT.)
ROHM & HAAS
UNION CARBIDE - TEXAS CITY
PHILLIPS - SWEENEY
PAK TANK
KATY - (VOLUNTEER FIRE DEPT.)
WEST I-10 (VOLUNTEER FIRE DEPT.)
TEXACO - PORT ARTHUR
CYPRESS CREEK - (VOLUNTEER FIRE DEPT.)
MT. BELVIEU - (VOLUNTEER FIRE DEPT.)
MONTGOMERY COUNTY
INCLUDED IN MONTGOMERY COUNTY:
CONROE, WOODLANDS, MAGNOLIA BENDS,
LAKE CONROE FOREST, & ENGINE 82.
LEAGUE CITY
DOW - FREEPORT
DOW - LA PORTE
GOODYEAR
MOBAY CHEMICAL

C I M A

CHAMPAIN INDUSTRIES NATIONAL AID

CHAIRMAN

L. Douglas Miller
Aristech Chemical Corp.
6611 Strang Rd.
La Porte, Texas 77571
930-2003

VICE CHAIRMAN

Ron Taylor
B. F. Goodrich
2400 Miller Cutoff Road
La Porte, Texas 77571
476-8004

SECOND VICE CHAIRMAN

A. E. 'Gene' Sonka
Rohm and Haas Texas, Inc.
P. O. Box 672
Deer Park, Texas 77536
476- 8148

RESPONSE TO EXPLOSION (CONTINUED)

SIMPSON PAPER
ROLLINS ENVIRONMENTAL
CYPRESS CREEK (VOLUNTEER FIRE DEPT.)
CYPRESS FAIRBANKS - (VOLUNTEER FIRE DEPT.)
WESTFIELD - (VOLUNTEER FIRE DEPT.)
AMERICAN RED CROSS
GATX TERMINALS - PASADENA
HARRIS COUNTY CONSTABLE - PRECINCT 8
CITY OF PASADENA POLICE DEPARTMENT
HARRIS COUNTY SHERIFFS DEPARTMENT
CITY OF HOUSTON POLICE DEPARTMENT
HARRIS COUNTY FIRE MARSHALLS OFFICE
SALVATION ARMY
CITY OF HOUSTON FIRE DEPARTMENT
PORT OF HOUSTON AUTHORITY
PORT TERMINAL RAILROAD
SOUTHERN PACIFIC RAILROAD
TEXAS PETROCHEMICAL - HOUSTON
U. S. COAST GUARD
W. R. GRACE
HERMANN HOSPITAL - LIFE FLIGHT
UNIVERSITY OF TEXAS MEDICAL BRANCH - GALVESTON - LIFE FLIGHT
AMT AMBULANCE - PASADENA
LIFE FLIGHT - BEAUMONT
PASADENA FIRE DEPARTMENT

Appendix E

SARA Title III - Emergency Planning and
Community Right-to-Know

SARA TITLE III

Emergency Planning and Community Right-to-Know

There are an estimated 575,000 existing chemical products, and hundreds of new ones being introduced annually. This poses a serious problem for firefighters, citizens, manufacturers and government agencies (U.S. EPA 21).

Chemical exposure may cause or contribute to many serious health defects such as heart ailments, kidney damage, cancer and burns. Some chemicals may also be safety hazards and have the potential to cause fires, explosions and other serious accidents.

Because of the seriousness of these hazardous chemicals and the lack of information available to many emergency response agencies, the Environment Protection Agency (EPA) Superfund Amendment, and Reauthorization Act, Section III (SARA Title III) has issued a final rule entitled, "Emergency Planning and Community Right-to-Know". The goal of this standard is to reduce the number of incidences involving chemical spills and injuries in the United States (EPA).

The purpose of this technical report is to clarify and interpret the standard to make sure that the reader knows the responsibility and limitation of the law.

Dealing With Chemicals

SARA Title III creates a new relationship among government at all levels, business, community leaders and individual citizens. Each of these groups has an important role in making this Act work:

- Local communities and states have the responsibility for identifying risks posed by chemicals at the local level, for reducing those risks, and for dealing with emergencies.
- Citizen, health professionals must work with government and industry to use the information for planning and response at the community level.
- Industry is responsible for operating safely; for gathering information on the chemicals it uses, stores and releases into the environment and providing it to government agencies and local communities.
- The Federal Government is responsible for providing assistance to states and communities, so they will have the tools to analyze SARA Title III data, and to measure the risk potential at the local level. EPA is also working to ensure that industry complies with the law's requirements. (U.S. Labor 6)

How The Law Works

The SARA Title III contains four major provisions.

- Planning for chemical emergencies.
- Emergency notification of chemical accidents and releases.
- Reporting of hazardous chemical inventories.
- Toxic chemical release reporting.

The law also deals with trade secrets and public access under the law.

1) Emergency Planning

Emergency Planning section is designed to help communities prepare for and respond to emergencies involving hazardous substances. Every community in the United States must be part of a plan.

The governor must appoint a State Emergency Response Commission (SERC). Each SERC in turn must divide itself into local emergency planning committees (LEPC). These committees shall include representatives from:

- Elected state and local officials
- Law enforcement and firefighters
- First aid, health and hospitals
- Community groups and the news media
- Users of chemicals, such as hospitals

LEPC must get organized and develop a plan to prepare for and respond to chemical emergencies. This plan must have been completed by October 17, 1988. The plan lays out potential local hazards, response capabilities, and procedures to follow in case of an emergency (EPA).

The EPA has identified a list of 366 "extremely hazardous substances" as having immediate health effects and hazardous properties. These substances are found in some widely used insecticides, herbicides, fertilizers and drinking water treatment processes. The list of extremely hazardous substances includes a "threshold planning quantity" for each substance. If more than this amount is present at any business, hospital or other facility, the owner or operator must notify the local emergency planning committee. The facility's owner or operator who violates the reporting provisions of this section of the law are subject to civil penalties up to \$25,000 a day.

The LEPC must be reviewed, tested and updated annually.

2) Emergency Release Notification

Under this section of SARA Title III law, a facility must immediately notify to LEPC and SERC of the release. Chemicals covered by this section of SARA Title III include not only the 366 "extremely hazardous substances," but also more than 700 hazardous substances subject to the emergency notification requirements of the Superfund hazardous waste clean up law. (Noll 55)

Immediate notification must include:

- The name of the chemical.
- The location of the release.
- Whether the chemical is on the "extremely hazardous" list.
- How much of the substance has been released.
- The time of the incident.
- Whether the chemical was released into the air, water or soil.
- Known health risks and necessary medical attention.
- Proper precautions, such as evacuation.
- A contact person at the facility.

The notification will activate emergency plans. The law also requires follow-up reporting. The follow-up must update the original notification and provide information on actions taken (EPA).

Any person who fails to notify the local authorities of a release is subject to civil penalties of up to \$25,000 a day. In addition, violators face criminal penalties of up to \$25,000 or prison sentences up to 5 years (EPA).

3) Hazardous Chemical Reporting

Facilities must report information about the amounts, location and effects of hazardous materials being used or stored. This information must be reported to the LEPC and the local fire departments. All companies large or small are subject to this requirement. The information reported to local fire departments will be used to plan for and respond to emergencies.

Facilities must report on hazardous chemicals in two different ways:

The first is Material Safety Data Sheets (MSDS), which contain information on a chemical's physical properties and health effects.

Under the Emergency Planning and Community Right-to-Know Act, facilities must submit MSDS on chemicals that are present in excess of certain amounts.

Before the act was passed in 1986, only manufacturers had to report hazardous chemicals. EPA has since expanded its regulations to include facilities whereworkers may be exposed to hazardous chemicals.

The second way that companies must report on hazardous chemicals is a "tier" approach to submitting annual inventories. Facilities must report the amount and location, and indicate the physical and health hazards of "extremely hazardous" substances in excess of 500 pounds. The EPA believes that the "tier" system provides emergency planners with more useful information (ISMAN 50).

4) Toxic Chemical Release Reporting

The fourth element of SARA Title III applies to facilities with ten or more employees that manufacture hazardous chemicals. They must estimate each year the total amount that they release accidentally or as a result of routine plant operation. Reports must be filled by July 1, 1989 with the EPA.

Information that must be gathered and reported under this section of the Act includes:

- How much chemicals went into the air, water and lands.
- Which toxic chemicals were released into the environment during the preceding year.
- How much of the chemicals were transported away from the site of the facility.

The information reported under this section of the Act has some limitations. For one thing, much of the data in this report is based on estimates (EVERSOLE 24).

5) Trade Secrets

Companies reporting under SARA Title III can, under certain conditions, request that the identity of specific chemicals in their report not be disclosed. To protect a chemical identity, the company must be able to prove that it is a legitimate trade secret. The chemical's identity must be included in the company's report to EPA. EPA will then review the information to insure that it is a valid trade secret. Companies should be careful when preparing trade secret claims. Owners or operators who submit false claims are subject to a penalty up to \$25,000 (EPA).

The law allows medical professionals access to trade secrets information if they need it to treat patients. To receive this information, they must submit a written request for chemical information, and a statement of need.

Over the last few years, we have read of incidents involving emergency response agencies that received chemical facility information through the SARA Title III, and then filed the information away in an office instead of providing it to their personnel. In a few cases where fire departments did not have the necessary information, firefighters were injured due to chemical exposure during their handling of the emergency. This failure to inform emergency response personnel could leave fire departments, LEPC and industry open to lawsuits.

Recommendation

- (1) Emergency agencies must use the information provided under SARA Title III so that it will be useful during an emergency.
- (2) Each agency must evaluate its community to determine if it is hazardous and develop a system of handling and processing SARA Title III information.
- (3) Appoint an individual(s) for your agency to be in charge of enforcing and processing SARA Title III information.
- (4) Assign (fire) inspectors to question facilities for compliance requirement of SARA Title III. A flyer explaining compliance details can be prepared for inspectors to hand out during inspections.

Continued on Page 25

SARA (from page 19)

(5) Numerous local government agencies still have not completed a local emergency response plan or even appointed local planning committee.

(6) Develop form letters for requesting hazardous materials from facilities. This reduces the number of letters you need to write. Develop a form letter with a check list of often requested items.

Work Cited

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National Fire Protection Association. Fire Protection Handbook 15th Ed. Quincy, MA. 02269: NFPA Publication, 1986.
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Clark L. Gofer is the Haltom City Fire Marshal/Building Official. He has more than fourteen years of fire service experience, has an Associate degree in fire science and a bachelor's degree in fire administration. Cofer is also an instructor at Texas A&M Municipal fire school and other area training schools.

Appendix F

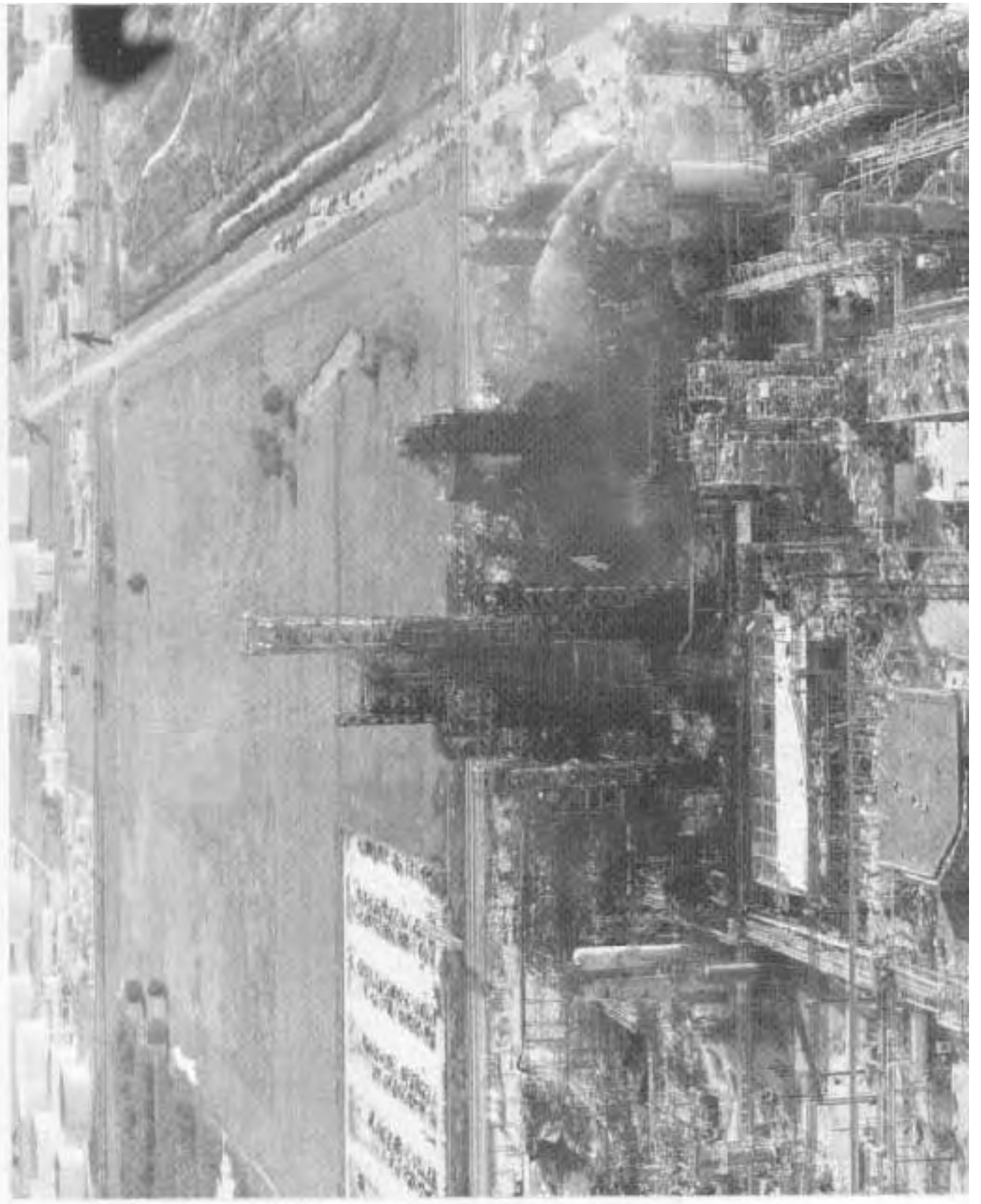
List of Slides

Slides and photographs are included with the master report at the U.S. Fire Administration. The pictures on the following pages were made from the items asterisked below.

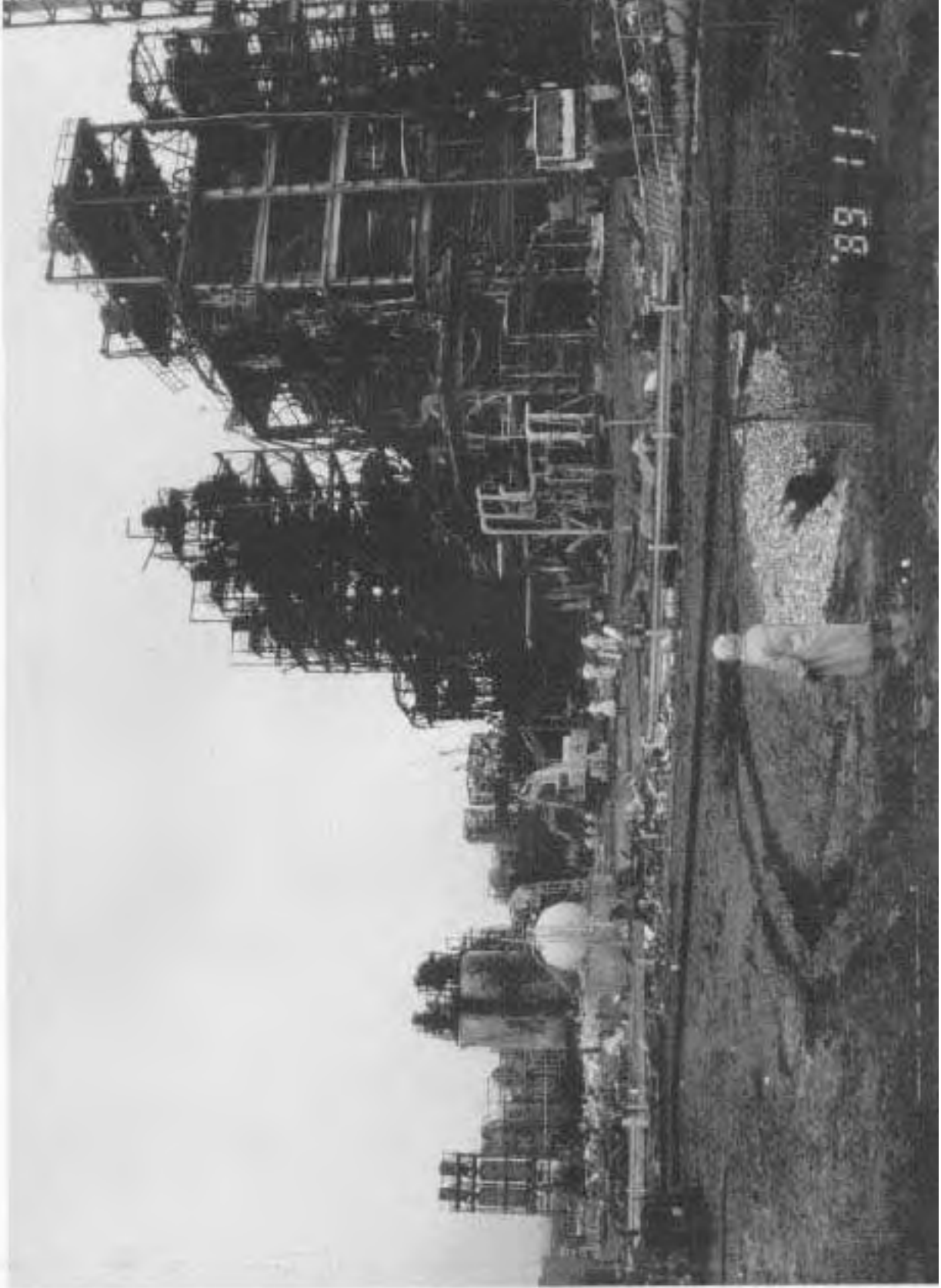
- *1. Aerial view of the Phillips plant taken prior to the explosion.
- *2. Aerial photo of complex as seen from north to south. Arrow at top points to the north edge of the staging area for responding mutual aid equipment. Arrow pointing to building shows where GATX terminal Chief Goyer was located when blast occurred. Area of origin thought to be near center (arrow).
- *3. Aerial photo of complex as seen from east to west. Arrow points to berm to west of the property. This appears to actually be a bank for a large holding pond but served well as a protective berm.
4. Overview of Phillips complex from south to north. The area of origin is thought to be in area left of the large tower.
5. View from southwest to northeast.
6. Closer view from southwest to northeast. Collapsed area in center is where some of the greatest heat occurred. Also, looking for bodies in this area.
- *7. View from south to north. Personnel and equipment near structure are working on victim recovery.
8. View from south to north. Degree of damage to structure more visible in right side of frame.
9. View from southwest corner toward north/northeast. Metal fatigue clearly visible in remaining superstructure.
10. Remains of tower section. Area to the left has been cleared out during victim recovery operations.
- *11. View is from south to north. Cleared area is to the west side of the tower. The cleared area in the center was designed in a like manner to the left side of this frame before the explosion.
- *12. View of tower and cleared area from south to north. The tower was listing to the west and north and was reported to be approximately 14° out of plumb.
13. Overview of the plant from southeast to northwest.

14. Closer overview of the plant from southeast to northwest.
15. View of framework of remaining structure. Heavy metal fatigue throughout is apparent.
16. View of the plant from west to east. This view has the south side to the right.
17. West side of the plant from northwest to southeast.
- *18. Silo holding areas to the northwest of the main blast area. The blast wave partially flattened the silo sides.
19. Buildings and refinery structures located several hundred feet north of the main blast. Damage came from the blast wave.
20. Buildings and structure still farther north of the main blast. More blast wave damage can be seen.
21. Additional building damage to the north of the blast area. Much of this is superficial but substantial.
22. Structure damage north of blast area caused by blast waves.
23. Damage to building siding approximately 1000' north of the blast area.
24. The main office for the Phillips Chemical complex - from southwest to northeast. Located approximately 1/4 mile from the blast area.
- *25. West end of the main office building. The blast wave dislodged the brick veneer and supports were placed on the exterior to keep the brick from collapsing.
26. Overview of the complex from the north to the south. The main blast area is obscured by buildings in the foreground.

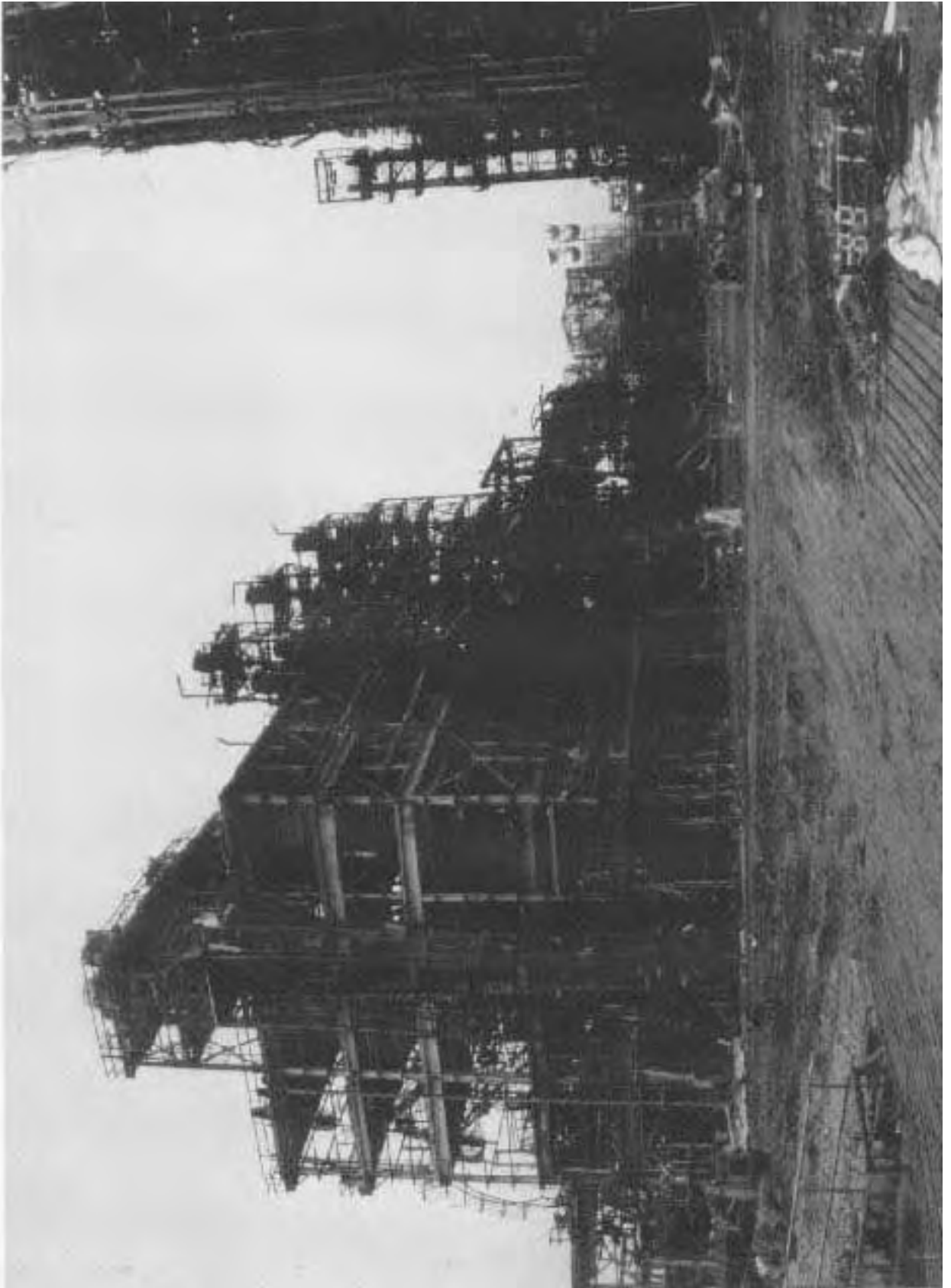


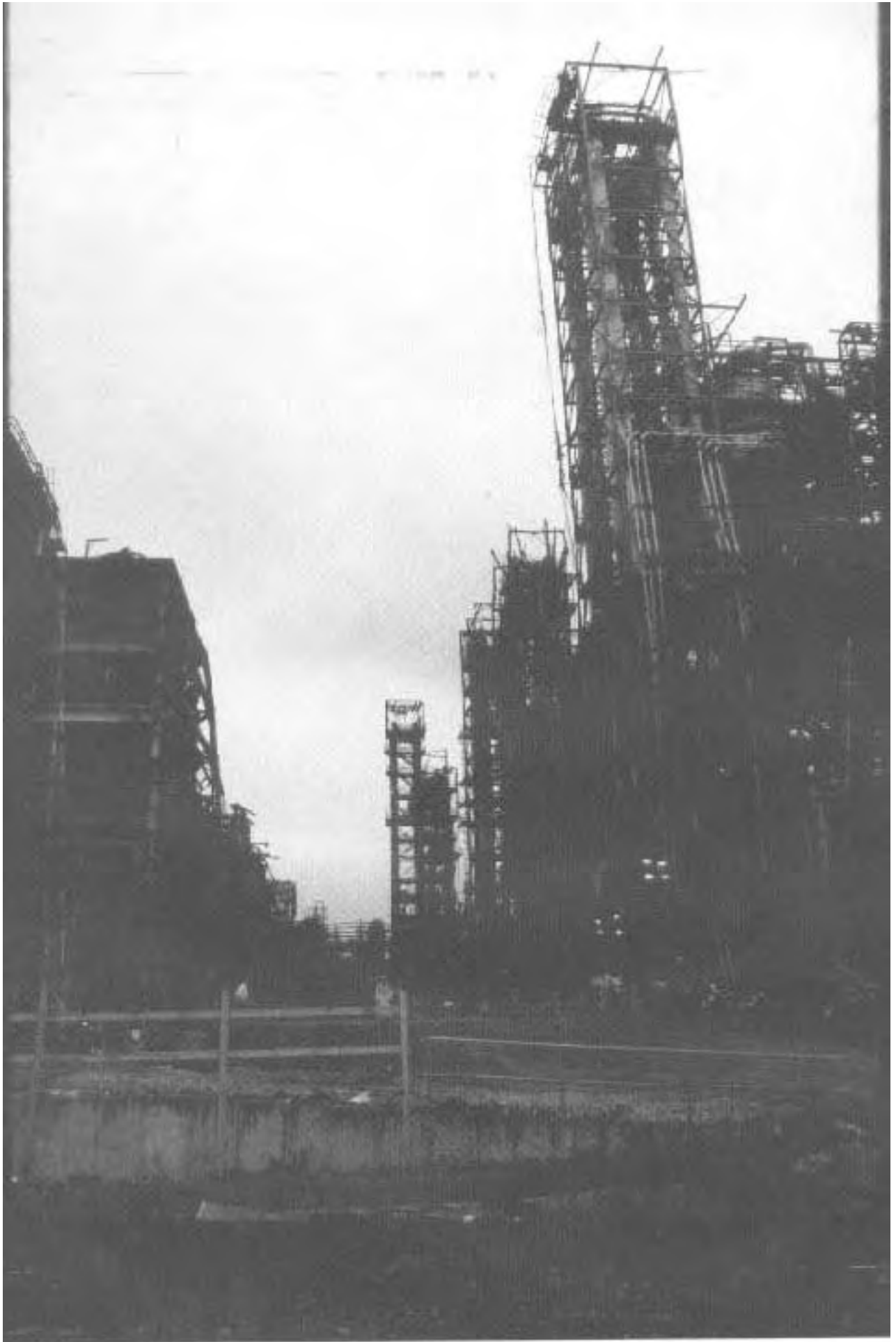


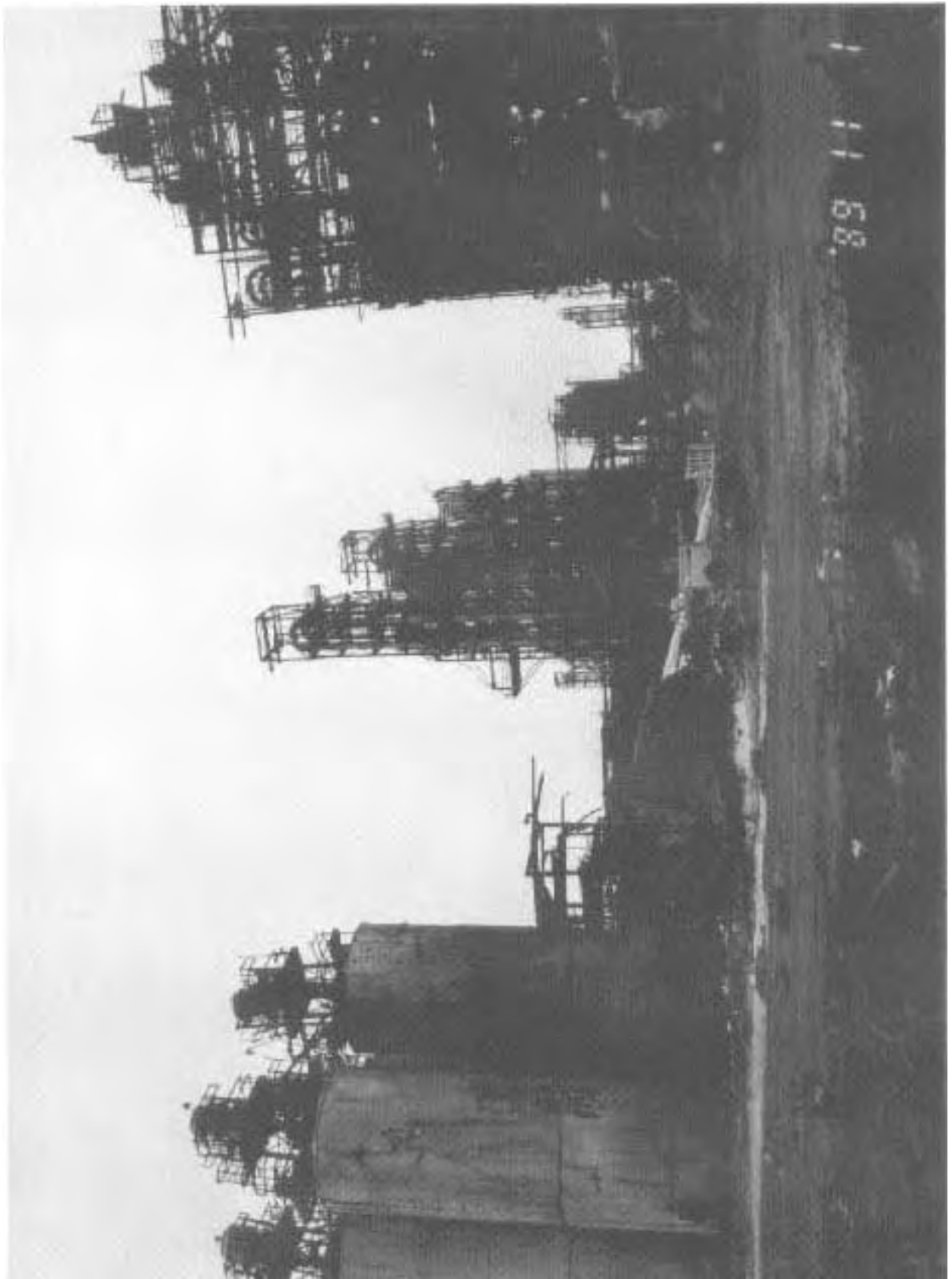














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