



PVC PLANT SAFETY & HEALTH MANUAL
ABERDEEN, MS

SUBJECT: FIRE PREVENTION AND EMERGENCY PLAN

EFFECTIVE DATE: March 15, 1982

PREPARED BY:

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APPROVED BY:

[Signature]

TITLE: MANAGER

OBSOLETE
PROCEDURE

References: C FR 1910, Subpart L - Fire Protection, 1910.35, 1910.37, 1910.38

PURPOSE: Due to the nature of the chemical process industry and specifically, the Aberdeen Chemical Plant, the potential for a vapor release and/or fire can only be minimized by conscientious operation of the plant. Emergency conditions caused by human error or equipment failure can ultimately lead to serious personal injury, loss of life, or severe damage to plant equipment. This plan is therefore being issued to:

1. Minimize the potential for fires and related emergencies through positive housekeeping and control of flammable materials and ignition sources.
2. Insure the safety and welfare of employees and the general public in the event of a plant emergency;
3. Minimize property damage and provide for the resumption of normal operations following a plant emergency;
4. Satisfy the legitimate concern of employees, their families, and the general public by providing prompt, accurate information concerning the extent and effects of plant emergencies; and,
5. Insure that all fire protection systems operate properly by routine testing and maintenance of critical systems.

FIRE PREVENTION PLAN

Fire related losses which can occur in the chemical industry are particularly severe. Due to the nature of the materials which are routinely handled in the Aberdeen Plant (primarily VCM, natural gas, propane, and other hydrocarbon fuels), operating personnel must exercise preventive control of hazards which can lead to fires. The Fire Prevention Plan is therefore being incorporated into the body of the Emergency Plan and its specific provisions will be reviewed on a routine basis by operating departments.

FIRE PREVENTION PLAN - (Continued)

Many of the materials used to make PVC and its compounds are flammable or combustible. Table I, below, is a list of commonly used materials which are flammable or combustible and can be fire hazards if not properly controlled. The majority of these materials are supplied as finely divided dusts and in some cases are capable of causing an explosion if dust accumulations are allowed to form an ignitable cloud.

TABLE I

VINYL DEPARTMENT

Flammable

PVC Initiators (Oxidizer)
Gasoline
Natural Gas/Propane
Vinyl Chloride Monomer

Combustible

Alpha Methyl Styrene (AMS)
Odorless Mineral Spirits (OMS)
Bubble Breaker
Cardboard Boxes
Diesel Fuel
2-Ethyl Hexaldehyde
Glycerine
Methocel
Paper Bags
PC-555
Shell Sol 71 Code 83195
Hydroquinone

COMPOUND DEPARTMENT

Flammable

Gasoline

Combustible

Antimony Trioxide
4310 R-1 Violet
Expoxidized Soybean Oil
Bisphenol A
Cardboard Boxes
Color Concentrates (Vinyl Base)
Cyasorb UV-531
Lead Stabilizers
Dibasic Lead Stearate
Ferro ThermOCheck 1827
Hal-Lub-D
Hostalube XL 165
Hystrene 5016

"Mark" Compounds
Mineral Oil
Molydenum Trioxide
Oncor 75 RA
Paper Bags
Plastiflow POP
"Plastolein" Products
PX-316
R-4067 (Interstab)
Santicizer 419
Synpron 1438
"Vinylene" Products
Wax Lubricants (polyethylene,
Petroleum)

DRY BLEND DEPARTMENT

Flammable

Gasoline

Combustible

"Acryloid" Products
Acrawax
"Advastab" Products
Advawax

Calcium Stearate
Cardboard Boxes
Diesel Fuel
"Mark" Products
Paper Bags
Thermolite 101
Wax Lubricants (polyethylene,
petroleum)

PLASTICIZER DEPARTMENT

Flammable

Gasoline

Combustible

Alcohols
Phthalic Anhydride
"Darco" Carbon Black
Cardboard Boxes
Diesel Fuel

Bisphenol A
Paper Bags
Sulfonic Acid Catalyst (liquid)
(Scott Air Pak and turnout gear
required for fire fighting)

MAINTENANCE DEPARTMENT

Flammable

Acetylene
Amercor Mark III
Gasoline
Hydrogen Gas
Natural Gas
Propane
Paints and Thinners
Sulfuric Acid (generates hydrogen gas)

Combustible

Agitene (Regular, Super)
Amerzene 35
Ammonium Nitrate (Highly Dangerous
if mixed with Oils)
Biocide 285
Biosperse 201
Cardboard Boxes
Conoco Lube Oils and Greases
Drewplex 505
Drewperse 738
Mitee Thread Cutting Oil
UCON Lubricants and Heat
Transfer fluids

LABORATORY DEPARTMENT

Numerous flammable and combustible liquids and solids are stored and used in small quantities in this department.

Many of the above noted chemicals classified as combustible are used routinely and are not commonly thought to be fire hazards due to the very high temperatures required to ignite them. Special precautions are outlined in the Safety Control Permit System Procedure which will govern all hot work operations in areas where flammable or combustible materials are used or stored. Hot work in the vinyl and propane processing area should be allowed only when there is no other reasonable method.

Fire protection and control systems used in the plant range from simple hand held fire extinguishers to sophisticated water spray deluge systems. This equipment is routinely checked by Safety and/or Instrument Personnel to insure that it operates properly when needed. The Safety Director is responsible to see that all fire protection systems are maintained in an operational condition.

Supervisory personnel plant wide are responsible for controlling fuel source hazards through conscientious operation and the Safety Control Permit System. Smoking will be permitted only in areas of the plant specifically specified for that purpose. Fire protection rules in the Safety Rule Book will be strictly adhered to.

Table II, below, is a listing of fire protection equipment which is available for use in the event of a fire related emergency.

TABLE II

FIRE FIGHTING EQUIPMENT

<u>Equipment</u>	<u>Area(s) of Coverage</u>
Diesel Driven Fire Pumps for Water Supply (4-2000 GPM, 100 psig Units - North pump house) (2-2000 GPM, 130 ¹³⁰ psig Units - South pump house)	Areas processing vinyl chloride monomer (propane area upon completion of phase III fire protection improvements).
Process Water System	Propane area fire protection equipment, warehouse area sprinkler systems.
Deluge Spray Systems	Vinyl reactors and tank farm.
Fire Monitors (Fixed)	Vinyl reactor, VCM and propane tank farm, VCM incinerators.
Fire Monitors (Portable)	Emergency equipment station, initiator storage freezers.
Dry Chemical Wheeled Fire Extinguishers	New reactor module, old reactor module, south compound cooling tower.
Dry Chemical Hand Portable Fire Extinguishers	Various locations plant wide.
Hose Houses and Fire Hydrants	Various locations plant wide.

Plasticizing compound, and warehouse buildings

TABLE II (Continued)

<u>Equipment</u>	<u>Area(s) of Coverage</u>
1 1/2 inch Fire Hose and Nozzles <i>fire hose and Nozzles</i>	Warehouse areas and vinyl reactor and propane tank farm areas <i>hose houses</i> .
Fire Turnout Clothing (Hats, Coats, Boots and Gloves)	Available for use plant wide, stored in the Emergency Equipment Station.
Extra Fire Hose (3 inch hose with 2 1/2 inch couplings)	Hose reel cart in Emergency Equipment Station.
Scott Air Paks	Various locations plant wide.
Additional Firefighting Nozzles and Related Equipment	Available for use plant wide, stored in the Emergency Equipment Station.
CO ₂ (Carbon Dioxide) Fire Extinguishers	Laboratory and Motor Control Centers.
Halon 1211 Fire Extinguishers	Behind vinyl control panel and in telephone switching room.

HOUSEKEEPING - Along with proper control of flammable and combustible materials, maintenance of high housekeeping standards is critically important. The proper disposal of trash from the various plant operations will minimize the accumulation of combustible materials and thereby reduce the potential for fire. The following is a list of basic housekeeping requirements for fire prevention purposes.

1. Ordinary hazard materials such as floor sweepings, paper bags, used filters, rags, and other miscellaneous discarded items shall be placed in dumpsters which are routinely dumped into the central trash compactor.
2. Initiator bottle disposal shall be done in accordance with current Vinyl Department procedures. Disposal of initiators which cannot be used in our operations shall be done under supervision of the Safety Department.
3. Inventories of empty drums in the various operating areas shall be kept to a minimum. All empty steel drums shall be taken to the drum storage area east of the API separator. Empty fiber drums should be placed in the large open top trash containers located south of the plasticizer building.
4. Clean-up and disposal of dust type materials which have been contaminated with a substance hazardous to health, such as lead, shall be done with vacuum cleaning methods.
5. Housekeeping requirements for operations which involve hot work are specified in the Safety Control Permit System Procedure.
6. Motor control center areas (breaker rooms) shall be maintained free and clear of discarded materials and shall not be used as storage areas. Whenever breaker panels are located in storage areas, a clear access lane of at least 36 inches from the front of the breaker panel shall be maintained.

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HOUSEKEEPING - (Continued)

7. Containers of laboratory solvents and reagents, once empty, shall be disposed of as ordinary hazards (see paragraph 1). Waste chemicals shall be disposed of in accordance with approved waste disposal procedures.

FIRE PROTECTION SYSTEM MAINTENANCE - The fire protection systems and equipment used in the plant undergo routine testing and maintenance. The Safety Director is responsible to see that all systems are operational and that routine testing is accomplished. Also, he is responsible to see that repair work on systems and equipment is accomplished on a timely basis whenever problems are discovered. Table III below specifies testing requirements and frequencies for the various systems and equipment.

TABLE III

FIRE PROTECTION SYSTEM
AND
EQUIPMENT MAINTENANCE

<u>System/Equipment</u>	<u>Frequency</u>	<u>Checkout Requirements</u>
Fire Pumps	Weekly	1) All engines start on pressure drop and sequence. 2) Battery and charger condition. 3) Engine operating temperature. 4) Engine oil pressure. 5) Engine hours. 6) Fuel levels. 7) Flowing and static pressure. 8) Engine RPM
	Annual	1) Flow studies. 2) Verify engine RPM with tachometer. 3) Cooling system flush and charge with fresh coolant. 4) Verify thermostat operation.
Deluge Systems (Reactors & Tank Farm)	Weekly	1) Flow gas over gas detector field sensors on gas detection system - check for system release. 2) Proper operation of deluge valves - trip and reset. 3) Systems drain freely. 4) No breaks in deluge piping systems.
	Quarterly	1) Check flowing pressure on each system.

FIRE PROTECTION SYSTEM MAINTENANCE - (Continued)

TABLE III (Continued)

<u>System/Equipment</u>	<u>Frequency</u>	<u>Checkout Requirements</u>
VCM Storage Sphere Fire Monitor Nozzles	Weekly	1) Remote and local control operation of actuated valve (pit). 2) Nozzle orientation directed at bottom half of sphere.
Stationary Fire Monitor Nozzles	Semi- Annual	1) Free operation of valve. 2) Flush until water is clear. 3) Nozzle free of debris.
Sprinkler Systems	Annual	1) Flow test at inspector check point. 2) All systems protected by anti-freeze solution if wet.
Post Indicator Block Valves and Other Fire System Valves In Each Unit	Weekly	1) Check to insure that firewater supply valves to unit deluge valves are open and locked. 2) Verify all thermostatic release air line valves are open and locked.
	Monthly	1) Check to insure that all underground supply line block valves are open and locked.
Fire Hose	Annual	1) Hydrostatic pressure test of at least 200 psig maintained for at least 15 seconds. 2) Hose shall not leak or jacket threads break. 3) Dried and reinstalled in hose house, or rack, preconnected to hydrant or supply valve.
Fire Extinguishers	Monthly	1) Fluff dry chemical powder. 2) Charged to specified pressure or CO ₂ cartridge seal in-tact. Release mechanism sealed. 3) Cylinder hanger, handle, and hose undamaged. 4) Wheeled units - hose properly coiled, valve in OFF position. 5) Stamp each extinguisher tag to indicate it has been inspected.

FIRE PROTECTION SYSTEM MAINTENANCE - (Continued)

TABLE III

<u>System/Equipment</u>	<u>Frequency</u>	<u>Checkout Requirements</u>
Fire Extinguishers (Hydrostatic)	Five or Twelve Years	1) Done under contract with licensed cylinder hydrostatic test contractor.
Emergency Alarm	Monthly	1) Test alarm modes (vapor, fire, evacuation) one per month on rotating cycle. 2) Test public address system alarm and all clear.
Smoke Detection System	Semi- Annual	1) Check voltages, detectors and alarm signal devices for proper operation. 2) Check supervisory circuitry.
CO ₂ Fire Extinguishing System - Lab Chemical Storage Room	Semi- Annual	1) Weigh CO ₂ supply bottles, refill as needed. 2) Check actuating mechanism for proper operation. 3) Check pre-alarm for operation and audibility. 4) Assure that all piping connections are secure and that there are no system leaks.

EMERGENCY PLAN

Definition of Plant Emergencies

A plant emergency is any unexpected event or condition which requires immediate action to prevent injury to personnel and/or damage to equipment. Plant emergencies include, but are not limited to: fires, explosions, release of toxic, flammable, or corrosive materials, or an injury which requires removal of an employee from an elevated location.

A "Vinyl Chloride Emergency" is any massive release of vinyl chloride. This does not include minor leaks of temporary concentrations above permissible exposure limits.

Immediate Actions to be Taken in Event of a Plant Emergency

Immediate actions are the direct responsibility of the Emergency Officer. In his absence, they are the responsibility of the Emergency Crew Chief (Shift Supervisor).

EMERGENCY PLAN - (Continued)

Immediate Actions to be Taken in Event of a Plant Emergency - (Continued)

The extent and severity of a plant emergency shall dictate the extent to which the emergency plan is utilized. The initial determination of required action shall be made by the Shift Supervisor in charge of the affected area(s). The action taken may range from handling the emergency with personnel present at the time to full alert of the emergency organization. In general, the following actions, as applicable, are required during an emergency:

1. Activate the Emergency Alarm System

Anyone who detects an emergency situation shall communicate it to the Vinyl Control Room by the radio, the Gaitronics System, or by dialing 2200 on the plant telephone system. In each case, the caller shall clearly communicate the location and nature of the problem to control room personnel (this information must be recorded on the forms provided). The Operator who takes the message shall then activate the appropriate alarm by depressing that button on the emergency alarm system control panel. Once the alarm system has been activated and the alarm is no longer operating, the operator shall dial 641 on the plant telephone system and give the nature and location of the emergency in a clear, calm, and distinct manner. This message must be given a minimum of three (3) times in order that plant personnel understand the nature and location of the problem.

Plant Emergency Alarm Codes

The plant emergency alarm siren is a dual tone type which produces a high and low pitch simultaneously during normal operation. Signal coding is achieved by alternately turning the siren motor on and off, and by opening and closing the air supply tubes feeding the rotating (sound producing) elements of the siren. On the following page is a graphical illustration of the alarm codes used in the Aberdeen Plant.

Whenever a plant emergency occurs, the nature of the problem will be communicated to the plant via the siren and the plant P.A. system as noted above. If the conditions require a general plant evacuation, the evacuation signal should be given only after the fire or vapor alarm. This allows evacuation signal to act as a tornado warning when used by itself as noted in the storm warning section below.

2. Use the Proper Emergency Equipment

All employees directly engaged in correcting emergencies involving VCM liquid/or vapor concentrations in excess of permissible exposure limits (1 ppm averaged over an 8-hour period with excursions to 5 ppm averaged over a 15 minute period) shall be equipped with personnel protective equipment which is appropriate for the hazards involved. In the case of VCM emergencies, the location of the spill must be evaluated prior to action on the part of any employee. If the discharge is occurring from a reactor relief line, Scott Air Paks may be the only personnel protective equipment required. In the case of major discharges which occur in and around electrically driven process equipment, the Supervisor in charge may require his personnel to also wear full fire turnout gear to maintain

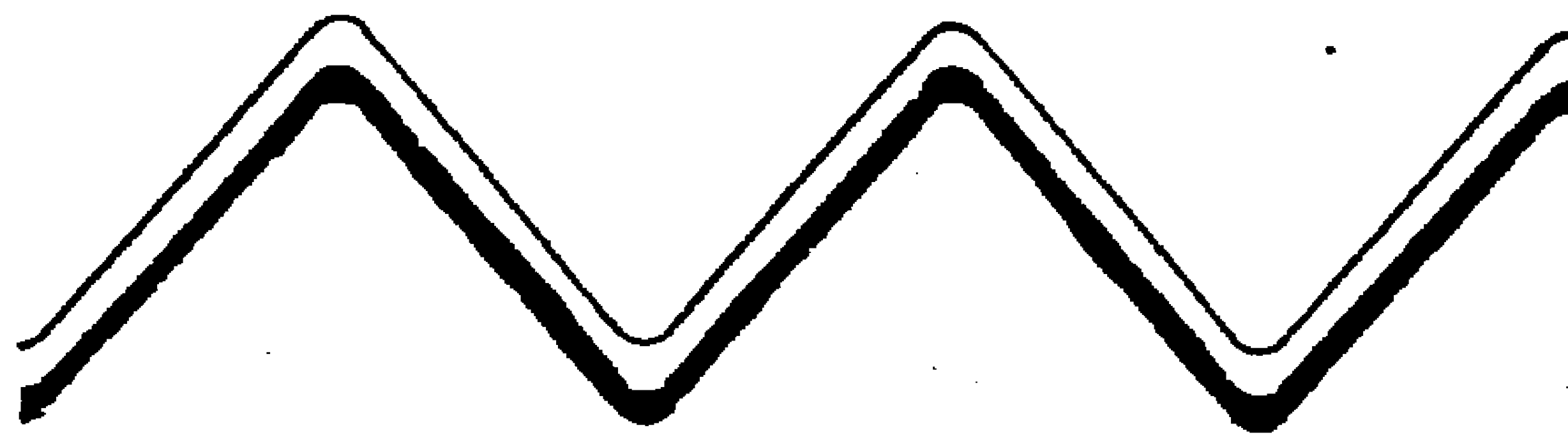
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PLANT EMERGENCY ALARM CODES

Vapor
(Steady Signal)

HIGHER FREQUENCY (PITCH)
LOWER FREQUENCY (PITCH)

Fire
(Wailing Signal)



Evacuation
(Undulating Pulsed/
Dual Tone Signal)



All Clear

Dial 2209 OR 2210



EMERGENCY PLAN - (Continued)

2. Use the Proper Emergency Equipment - (Continued)

safety in the particular emergency operation. Whenever emergency situations occur where liquid (VCM or propane) is involved, personnel must wear special heat and liquid resistant gloves to protect from freeze burns and potential flash fires.

3. Evacuate Non-Essential Personnel from Danger Areas

Always evacuate non-essential and all personnel not properly equipped with personnel protective equipment which is appropriate for the hazards present. Emergency crews are to report to the emergency location as directed in the Emergency Crew Section below. Such personnel shall not be allowed to return until the emergency situation has been corrected. In all cases, evacuated personnel shall immediately proceed to primary evacuation areas as noted below. If the wind directs hazardous vapors into the primary evacuation areas, evacuated personnel shall proceed to the secondary evacuation area at the guardhouse and assemble in departmental groupings as noted on the fence located east of the parking lot and south of the guardhouse. If that area is noted as being contaminated by VCM vapor, evacuated personnel will be moved to a safe location along the property line north of the plant. ALL EVACUATIONS MUST BE PROMPT AND ORDERLY!

PRIMARY EVACUATION AREAS

Vinyl Area - At pad north of the control room.

Lab & Compound/Plasticizer - Warehouse at northwest corner of the staging area directly south of the plant auditorium.

Maintenance, Receiving Warehouse/Stores, Yard - Main shop

Transportation - Warehouse at northwest corner of the staging area but east of the lab and compound/plasticizer group.

Off-Shift Yard and Mechanics - At pad north of vinyl control room.

Office Personnel - Lobby in each office area.

Contractors - North of main gate.

4. Account for all Personnel

When personnel have assembled in the primary evacuation areas, head counts must be made as noted in EVACUATION OF WORK AREAS below. Personnel not accounted for at this time must be regarded as trapped and/or injured and rescue efforts initiated. It is extremely important for all personnel to understand the location of their primary evacuation areas and to get to them as quickly as possible; otherwise, other personnel may have to jeopardize their personal safety during search and rescue operations. NOTE: Where supervisors have been pre-assigned duties under this plan, other arrangements must be made by the various departments to insure that personnel are accounted for on a timely basis (see evacuation of work areas for more information).

5. Rescue Trapped Personnel

Search and rescue operations during VCM and propane vapor releases and fires must be attempted only with fire turnout gear due to the likelihood of vapor ignition causing a flash fire or explosion.

In the event that rescue operations are required during serious plant emergencies, the Emergency Officer (Emergency Crew Chief on off shifts) will utilize personnel who are not assigned specific emergency duties to conduct search and rescue operations. In all cases, the buddy system is required to perform these duties and the Emergency Officer must take that into account as he assigns the duties. Personnel protective equipment requirements must be defined by the Emergency Officer. This can vary from nothing to the use of fire turnout equipment and Scott Air Paks depending upon the circumstances.

Rescue operations may become necessary due to serious personal injury in elevated plant locations. In this event, the rescue equipment kept in first aid and the Emergency Equipment Station must be assembled and utilized by plant personnel under the joint direction of the Emergency Officer and either the Plant Nurse or ambulance attendant.

EMERGENCY PLAN - (Continued)

6. Activate Fire Protection Systems

Activate and utilize Emergency Crews, support personnel present (under the direction of the Mechanical Superintendant as noted in the EMERGENCY ORGANIZATION SPECIFIC DUTIES section below) and the Emergency Organization as necessary to prevent or extinguish fires, explosions, or chemical exposures. Activate the deluge system and/or fire monitors as follows:

Deluge System - These systems should be activated whenever emergencies require deluge system operation. These emergencies include but are not limited to the following:

- Serious leaks from rotating equipment seals.
- Abnormal discharges of flammable material from process piping, valves, and relief systems.
- Serious leaks in the VCM compressor shed at the tank farm.
(CAUTION: Water can damage the Corken compressors if they are hot. The system should be used only during fire conditions or when serious VCM leaks may cause a fire. In all cases, the appropriate piping should also be blocked in to prevent the release of large amounts of VCM).
- Fires resulting from any of the above.

Fire Monitors - Permanently installed fire monitors in the various areas provide supplemental fire water to locations which may need additional water for equipment protection due to direct flame impingement, high concentrations of VCM vapor, or during periods when the deluge system is out of service. During VCM vapor releases which involve the reactor relief systems, the Supervisor may decide to utilize only the fire monitors since the point of discharge is above all other operating equipment. Due to high volume demand of the deluge systems, fire streams from monitor nozzles may not reach the top of the relief lines with both systems in operation. If supplemental fire water is needed or in cases where there is no permanently installed fire protection system (i.e. the initiator freezers), the Supervisor should utilize the portable fire monitor and hose reel stored in the Emergency Equipment Station.* Lead Operators should make sure the fire pumps are operating when major leaks occur in the reactor areas and only the fire monitors are in use. If the pumps are not operating and there is flow through the monitors from the process water system, the pumps can be started by briefly opening and closing the deluge water valve to the sphere from the old module control panel. (NOTE: For additional information regarding the operation of fire protection equipment in the VCM tank farm area, consult the VCM Tank Farm Operating Manual.)

Whenever the fire alarm is activated, all hose crews shall report to a location upwind of the fire, and assemble by emergency crew grouping. The Chief and Assistant Chief shall survey the problem and direct their personnel accordingly. In all cases where significant size fires are noted, fire fighting personnel must be properly outfitted with fire turnout gear.

* Phase IV of the Fire Protection Improvement Project will provide a hose house at the initiator storage freezer.

EMERGENCY PLAN - (Continued)

6. Activate Fire Protection Systems - (Continued)

Water Wall Nozzles - Special nozzles which are used to protect other exposed equipment during emergencies are available in the emergency equipment station. The water wall nozzle is designed to be coupled in between or at the end of our large (3 inch) firehose. The pattern of water supplied by these nozzles creates a vertical curtain of water that could be used to protect cooling towers, other vessels, equipment or buildings during fires.

7. STOP ALL HOT WORK! - Motor vehicles, portable transfer systems, the incinerator, welding machines and and other source of ignition must be positively shutdown immediately whenever the plant emergency alarm is activated! Shut down and secure operations as required to prevent further injury to personnel or damage to equipment.

8. Stop flow of:

- A. Flammable materials feeding fires or potential fires, including dryer and incinerator gas burners.
- B. Boilerhouse operation is to be shutdown only in cases where unfavorable wind conditions and flammable material release is great enough to present a hazard. Boilerhouse shutdown can occur only on direct orders from the Emergency Crew Chief, the Emergency Officer, or the Safety Director.

9. Utilize outside assistance and notify the community as required.

- A. Aberdeen Fire Department369-9551
- B. Ambulance.....369-2455
- C. Hospital Emergency Room369-2455
- D. Dr. R. E. Coghlan (Office).....369-2411
(Home).....369-4418
- E. Dr. J. N. Turnage (Office)369-2413
(Home).....369-6311
- F. Aberdeen Police Department369-6454

Have local police warn adjacent plant and residential areas if they are threatened by fire, flammable material releases or toxic gases (chlorine or hydrogen chloride (HCl) as a result of a VCM fire). Plant Manager approval is required prior to contacting the police department unless the delay increases the danger to the community (see PUBLIC ALERT below).

EMERGENCY PLAN - (Continued)

10. Locate the boundaries of contaminated areas during vapor releases. This will normally be done by the Safety Supervisor during weekdays. The vinyl shift supervisor will perform this duty during off-shift hours only after he has successfully contained the emergency condition and completed the work assignments necessary to clear the emergency.

RESPIRATORY PROTECTION REQUIREMENTS

Plant emergencies involving VCM and chlorine shall require the use of Scott Air Paks. Emergencies involving propane and other materials require the use of Scott Air Paks only if concentrations of vapor might decrease the oxygen content of the leak area to levels which will not support life.

REPORTING

All emergencies will be reported by the Plant Manager to the General Manager of Manufacturing within 24 hours. For this reason, the Plant Manager must be informed in a timely fashion of any emergency incident. The guidelines for reporting emergency conditions are shown below.

Fires

1. Any fire which causes serious damage should be reported to the Plant Manager immediately.
2. All other fire incidents should be reported to the Plant Manager by the next workday after the fire.

All fires will be thoroughly investigated by a team appointed by the Plant Manager. A FIRE REPORT must be completed as rapidly as possible for use by the investigating team.

Vapor Releases and Other Emergencies

1. The Operations Superintendent will issue a written report on each VCM emergency as soon as possible, not to exceed 24 hours.
2. The Plant Safety Director will report VCM emergencies and the facts obtainable to the OSHA Area Director as required by OSHA Regulations.
3. The Chief Process Engineer will report VCM emergencies and the facts obtainable to the Mississippi Bureau of Pollution Control and to the Regional Administrator of the Environmental Protection Agency as required by NESHAP and State regulations.
4. The Chief Process Engineer must be notified regarding any spill of a potentially hazardous material as soon as the spill is discovered. The Chief Process Engineer will promptly report the spill to the Superfund National Response Center if required by regulation.

A PLANT EMERGENCY ALARM DATA SHEET must be completed by the operator whenever the alarm is activated (tests included). When completed, it must be sent to the Safety Director.

EMERGENCY ORGANIZATION

Please refer to the attached EMERGENCY ORGANIZATION chart for the following discussion. When activated, this organization shall be directed by the Management Group, which bears overall responsibility for meeting the objectives of the plan.

Activation - Whenever an emergency occurs in the plant, The Shift Supervisor responsible for the affected area(s) will be in charge of all immediate actions, including activation of the Emergency Organization if and as required. During normal office hours, the organization shall be activated by the Shift Supervisor by announcing "ACTIVATE EMERGENCY ORGANIZATION" three (3) times over the P.A. system. During off hours and weekends, the Shift Supervisor shall instruct the Plant Guard to "call-out" the Emergency Organization. The Guard shall then call all personnel listed on the Emergency Organization Call List in rank order. If an individual cannot be reached, the Guard should then call the next person listed on the list. Once contacted, these personnel are to immediately come to the plant and assume their emergency duties.

Specific Duties - The following is a discussion of specific duties assigned to each position in the Plant Emergency Organization.

1. Management Group

The Management Group will consist of the Plant Manager, the Plant Superintendent and the Employee Relations Director. The duties of the Management Group are:

- A. Provide leadership for the disaster group and coordinate all activities connected with control of the situation.
- B. Promptly release factual information to the news media, preventing erroneous reports and creating the best possible public image for the company.
- C. Notify Corporate Management and keep them up to date on the situation.
- D. Notify next of kin in cases of serious or fatal injuries.
- E. Maintain close communication with the Emergency Officer.

2. Emergency Officer

The Operations Superintendent of the area affected will serve as the Emergency Officer. He will report directly to the Management Group and will be in overall charge of emergency control activities. He will be assisted in this duty by the Safety Director and the Chief Process Engineer. The alternate to the Operations Superintendent is the Operations Supervisor of the area involved. The duties of the Emergency Officer are:

- A. Work closely with the Emergency Brigade Crew Chief in determining the most effective manner of establishing control of the situation.

EMERGENCY ORGANIZATION - (Continued)

2. Emergency Officer - (Continued)

- B. Keep the Management Group informed of the situation and the action being taken to bring it under control.
- C. Rely on the advise and help of the Assistant Emergency Officer and the Safety Director.
- D. Issue instructions for the "Call-Out" of off-duty employees and advise the Security Officer of who is authorized to enter the plant.

3. Assistant Emergency Officer

The Chief Process Engineer will serve as the Assistant Emergency Officer. He will assist the Emergency Officer in the evaluation of the situation and the planning of action necessary to establish control of the emergency. He will also provide any technical information regarding the equipment or process that might be necessary. He will keep the Emergency Officer informed of his whereabouts at all times. The alternate to the Chief Process Engineer is the Senior Process Engineer.

4. Security Officer

The Security Officer position will be filled by the Safety Supervisor and he will report directly to the Management Group. His specific duties are:

- A. Provide security protection for all plant property and material. This will include procurement and assignment of Guards, if needed.
- B. Dispatch personnel to the road blocks so that authorized personnel may be identified and allowed into the area. The unauthorized personnel must be turned back in a firm, tactful manner.
- C. Provide emergency supplies that might be needed during the emergency.
- D. Monitor VCM concentrations in the area of the secondary evacuation area southwest of the guardhouse.

5. Safety Director

The Safety Director will assist the Emergency Officer in any way necessary in bringing the situation under control. His primary responsibility is in helping with fire fighting and rescue efforts. He will work closely with the Emergency Crew Chief.

Following an emergency, the Safety Director will assist Department Heads in restoring safe condition throughout the plant. He will also see that emergency equipment is serviced and placed in the proper locations. He will act as a team leader to make a detailed study of the causes of the emergency, action taken, and any recommendations made to prevent similar emergencies.

EMERGENCY ORGANIZATION - (Continued)

5. Safety Director - (Continued)

The Safety Director will also be responsible for the following areas of emergency readiness:

- A. Review the Fire Prevention and Emergency Plan on an annual basis and issue revisions in accordance with the work calendar.
- B. Organize training programs as necessary to insure prompt and adequate response to emergencies in the following areas.

Basic Fire Training -

- 1. Make sure that all operating, maintenance, support groups and professional personnel are exposed to basic fire fighting techniques pertaining to the use of portable fire extinguishers, emergency alarm systems and evacuation procedures. This will normally occur on an annual basis. New employees will receive basic fire training within 120 days of employment.

Advanced Fire Training -

- 2. Vinyl Department employees and members of the emergency crews will be trained more extensively in automatic fire control systems, operation of the plant fire water system, fire fighting methods and basic fire theory.

First Aid -

- 3. Organize annual refresher first aid training of off-shift first aid personnel.
- C. Insure that fire fighting and emergency equipment is maintained in operable condition at all times.

6. Emergency Chief

The Vinyl Shift Supervisor will fill the position of the Emergency Crew Chief during emergencies in the Vinyl Reactor, Vinyl Dryer, Boilerhouse, Waste Treatment and VCM Tank Farm areas. The Compound Shift Supervisor will act as the Emergency Crew Chief in the Compound, Plasticizer, Laboratory, Office and Warehouse areas. The appropriate Chief will direct the Fire Crew and others involved in fire control or other emergency action. He will work closely with the Safety Director in the effective use of manpower and equipment necessary to bring the situation under control.

EMERGENCY ORGANIZATION - (Continued)

6. Emergency Chief - (Continued)

The Emergency Chief will usually be the first individual in authority to recognize the existence of an emergency situation. He must make the immediate decisions regarding the emergency action and continue in this capacity until the Emergency Organization can assemble, if it is required. The Vinyl Shift Supervisor, acting as the Emergency Chief, will initiate the necessary action to put this plan into effect.

The specific duties of the Emergency Chief in time of emergency are listed under "IMMEDIATE ACTIONS..." section above.

Once the Emergency Officer arrives, the Emergency Chief will report to him.

7. Assistant Emergency Chief

The Compound Shift Supervisor will serve as the Assistant Emergency Chief during emergencies in all areas of the plant, except Compound, Plasticizer, Laboratory and Warehouse. In those areas, the Vinyl Shift Supervisor will act as Assistant Emergency Chief. The Assistant Chief's duties will be as follows:

- A. Make sure that all of the Fire Brigade members in his area leave for the scene of the emergency.
- B. Report to the Emergency Chief for instructions.

8. Mechanical Chief

The Mechanical Superintendent will act as the Mechanical Chief during the time of the emergency. The alternate is the Mechanical Superintendent. In this capacity, the Mechanical Chief will report to the Emergency Officer. He will carry out the following duties:

- A. Organize and direct damage control work as directed.
- B. He will be in charge of all personnel reporting to the Shop Area.
- C. Assist the Emergency Officer in any way necessary to bring the situation under control.
- D. Establish relations with outside utility companies and work closely with them, maintaining or restoring service as soon as possible.
- E. Notify the Security Officer of the names of those people in the plant under his direction and of any who have been called out.
- F. Keep the Emergency Officer informed of his whereabouts at all times.
- G. Organize and direct clean-up and repair crews for the purpose of getting the plant back into operation as soon as possible.

EMERGENCY ORGANIZATION - (Continued)

9. First Aid Chief and Assistants

The Nurse will act as the First Aid Chief and will report to the Emergency Officer. The Laboratory Lead Technician will act as an Assistant. The alternate for the Nurse will be the Laboratory Shift Supervisor.

- A. The First Aid Chief and Assistants will go immediately to the emergency scene whenever the Emergency Organization is activated or there is a call for First Aid help.
- B. Give First Aid to the injured.
- C. Advise the Communications Chief if ambulances are needed.
- D. Keep the Management Group and the Security Officer informed of injuries, including the names and estimates of severity.
- E. Transport injured personnel to ambulance.

10. Messengers

The Messengers will report to the Emergency Organization member to whom they are assigned.

11. Fire Pump Supervisor

During the first shift on weekdays, the Safety Inspector will act as the Fire Pump Supervisor. When alerted by emergency signals, he will report to the Fire Pump House. He will keep all four (4) pumps running until the "ALL CLEAR" is sounded. He will be assisted by the Tool Room Man. In the Tool Room Man's absence, the Day Shift Mechanic will assist the Safety Inspector. At all other times, the position of Fire Pump Supervisor will be filled by the on-duty Shift Mechanic. Whenever there is no coverage by any of the above, the Plant Guard shall insure that all fire pumps are operating. The Vinyl Shift Supervisor shall be responsible for the shutdown of the fire pumps when the emergency condition has been corrected.

12. Emergency Crews

There are two emergency crews. The objectives of these crews are to insure that, through quick action, we will be able to protect employees and minimize any damage due to fire. Both crews are to report to the announced location of the emergency immediately when summoned by alarms, the Shift Supervisor, or when the Emergency Organization is activated. The crews will consist of the following:

EMERGENCY ORGANIZATION - (Continued)

12. Emergency Crews - (Continued)

#1 Emergency Crew

Emergency Crew Chief -

Vinyl Shift Supervisor
Chief Operator
Dryer "A" Operators (2)
Dryer Utility

#2 Emergency Crew

Assistant Emergency Crew Chief -

Compound Shift Supervisor
Automatic Bag Operator
Line I Bagging Utility
Line III Mill Utility
Dry Blend Utility - if available
Line I Compounder

Emergency Crew Duties - The prompt and proper response of Emergency Crew members is essential to the protection of lives and property.

The following are the duties to be performed in the event of a serious plant emergency:

- Any emergency call out, not just shall result in call out, not just if there are to be used.*
- what are manual methods?*
- if don't know what this means?*
- F. (See over)*
- A. *Emergency Crew Chief to initiate call out of the Emergency Organization if fire hoses will be required.*
- B. Obtain fire fighting protective clothing from the Emergency Equipment Station (next to yard scale house) and Scott Air Paks for personnel protection.
- C. Make sure that fixed fire protection systems (deluge systems and fire monitors) are being used to the greatest advantage. *Supplement fixed systems by use of portable fire monitors and hose lines to protect equipment from damage by heat from the fire until manual methods can be used in accordance with item E below.*
- D. Provide help to block-in fuel sources by closing valves as specified by the Emergency Crew Chief. *Always do this with fire turn out gear on and properly fitted if in an area near the fire.*
- E. Perform manual fire fighting operations under the direction of the Emergency Crew Chief. *When manpower levels allow a minimum of seven (7) personnel per attack team and adequate back up personnel on fire monitors or supplemental hose lines.*

13. Support Group

The Support Group will consist of all Maintenance, Warehouse, and Yard Personnel (Supervisors and Hourly). They will report to the Maintenance Shop and be under the orders of the Mechanical Chief. The Maintenance Superintendant - Mechanical will stay in the shop with the personnel. The Mechanical Chief will contact him for assistance.

14. Guards

- A. Direct ambulance and other vehicles to the emergency scene.
- B. Stop all other vehicle traffic into the plant and have it park without blocking the gate. Do not permit any unauthorized personnel to enter the plant.
- C. Phone the Emergency Organization when instructed to do so by the Vinyl Shift Supervisor, the Compound Supervisor, or their designees.

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EMERGENCY ORGANIZATION - (Continued)

14. Guards - (Continued)

- D. Monitor fire pump operation as noted in 11 above.
- E. Record wind direction and speed, barometric pressure, time and outside temperature at time of occurrence if a gas release or fire has occurred.
- F. Announce the wind speed and direction (i.e., from _____, to _____) over the plant public address system if a gas release or fire has occurred.

15. Communications Chief

- A. The Director of Administrative Services will act as the Communications Chief.
- B. Establish the gatehouse switchboard as an emergency and communications headquarters. The Communications Chief shall also prearrange for a Secretary to act as the Switchboard Operator. Several alternates should be planned. The Switchboard Operator should be contacted immediately following receipt of the call to activate the Emergency Organization.
- C. Handle all incoming and outgoing calls.

EVACUATION OF WORK AREAS

As noted in the IMMEDIATE ACTIONS...section of the plan, all non-essential personnel being evacuated from their work area due to fire or large uncontrolled vapor release shall shut down the equipment for which they are responsible and proceed to the PRIMARY EVACUATION AREAS for a head count. (To expedite the head count, each department shall maintain a current list of personnel by shift grouping on a clipboard in the Supervisor's office. A listing of office personnel shall also be maintained in or near the lobby of each office area.) If conditions warrant further action to avoid danger, evacuated personnel shall proceed to the SECONDARY EVACUATION AREA, southwest of the plant guard house. In all cases, evacuated personnel must assemble by departmental grouping for a head count. In the event that this area is unsafe, all personnel must assemble at a safe location south of Highway 25 along the north plant property line. Supervisors must designate non-emergency personnel to act in their place for head count purposes if the emergency condition requires the activation of the Emergency Crews or Emergency Organization.

Wind direction at the time of a gas or vapor emergency will play an important role in the choice of escape routes. Evacuation routes should always be at right angles to the wind (cross-wind). Use the wind socks located on silos 415 and 281 or slurry blend tank 502 to determine the wind direction.

PUBLIC ALERT

During an emergency, the Plant Manager, or his designee, will determine if and when action is required to protect the public, including request for Law Enforcement Assistant. Any requests for information from reporters or other persons outside the plant including employees shall in all cases be directed to the Plant Manager or his designee.

REENTRY TO WORK AREAS

Personnel, except those required to deal with the emergency condition, shall not be allowed to reenter endangered areas until the emergency condition has been corrected and verified.

Upon establishment of control over VCM releases, the Shift Supervisor, equipped with Scott Air Pak and HNU Photoionizer shall verify that all areas have returned to safe levels. Whenever an employee reenters a work area in which a VCM release has occurred, for the purpose of verifying safe levels, there shall be at least two other persons equipped with Scott Air Paks observing from a safe distance. In some cases, this may be done by Honeywell readings.

During normal office work hours, the Safety Supervisor shall monitor public and total plant area safety with portable monitoring instruments and Scott Air Pak, if necessary. During his absence, this task shall be performed by the Vinyl Shift Supervisor. Again, this may be done by Honeywell readings.

MEDICAL TREATMENT AND SURVEILLANCE

Anyone who is injured during any emergency is to be immediately treated as appropriate to circumstances.

Anyone who loses consciousness because of inhalation of any substance is to be taken to the Aberdeen-Monroe County Emergency Room as soon as possible. In all cases, the treating physician must be given the chemical name of the agent (gas) which is suspected of causing the injured person to be overcome.

Medical treatment of any employees injured by any substance will be that determined most appropriate by the Corporate Medical Division or its designee.

EMERGENCY TELEPHONE NUMBERS

1. Medical

Ambulance, Monroe County Hospital.....	369-2455
Dr. Coghlan, Office.....	369-2411
Home.....	369-4418
Dr. Turnage, Office.....	369-2413
Home.....	369-6311

EMERGENCY TELEPHONE NUMBERS - (Continued)

2. Police

Aberdeen Police Department.....369-6454
Sheriff's Office.....369-2468
Mississippi State Police.....(Contact Police Dept.)

3. Fire Department

Aberdeen Fire Department.....369-9551

4. Light and Water Department

Aberdeen Light & Water Department.....369-4731
or.....369-2159

5. Headquarters Personnel

R. E. Lehmkuhl, Office.....(713) 965-1727
Home.....(713) 780-1270

R. D. Gamblin, Office.....(713) 965-2100
Home.....(713) 531-7242

M. S. Reynolds, Office.....(713) 965-2806
Home.....(713) 445-9187

J. J. Hall, Office.....(713) 965-1709
Home.....(713) 376-8154

6. Public Relations Personnel

Houston.....John Gehbauer (office).....(713) 965-3115
(home).....(713) 376-9279

Lake Charles.....Carlton Adams (office).....(318) 494-4215
(home).....(318) 477-9640

7. CHEMTREC Emergency Numbers

See CHEMTREC Call Manual

STORM WARNING

These procedures are established to give personnel early tornado warning.
When atmospheric conditions indicate that a tornado is possible:

1. The guard will continuously monitor National Weather Service broadcasts for weather reports.

STORM WARNING - (Continued)

2. If the Weather Service announces a tornado watch for the area, the Guard will:
 - A. On days - contact Plant Manager, Plant Superintendant, and all Department Heads.
 - B. During off-shifts and weekends - contact the Viny, Lab, and Compound Supervisors.
 - C. Be watchful for an approaching tornado cloud.

NOTE: Whenever the Vinyl Shift Supervisor is notified of an approaching severe weather system, he may direct his employees to stop charging and to initiate any other measures dictated by operating procedures to prevent the release of VCM.

3. If the Guard spots an approaching tornado cloud, he will call the Vinyl Control Room and ask that the tornado alert alarm, on the plant siren be sounded, and announce it over the plant P.A. system.
4. Whenever an approaching tornado cloud is announced, all personnel will take whatever action and cover that is established by departmental procedures.

FIRE PREVENTION AND EMERGENCY PLAN
PAGE 25

EMERGENCY ORGANIZATION CALL LIST

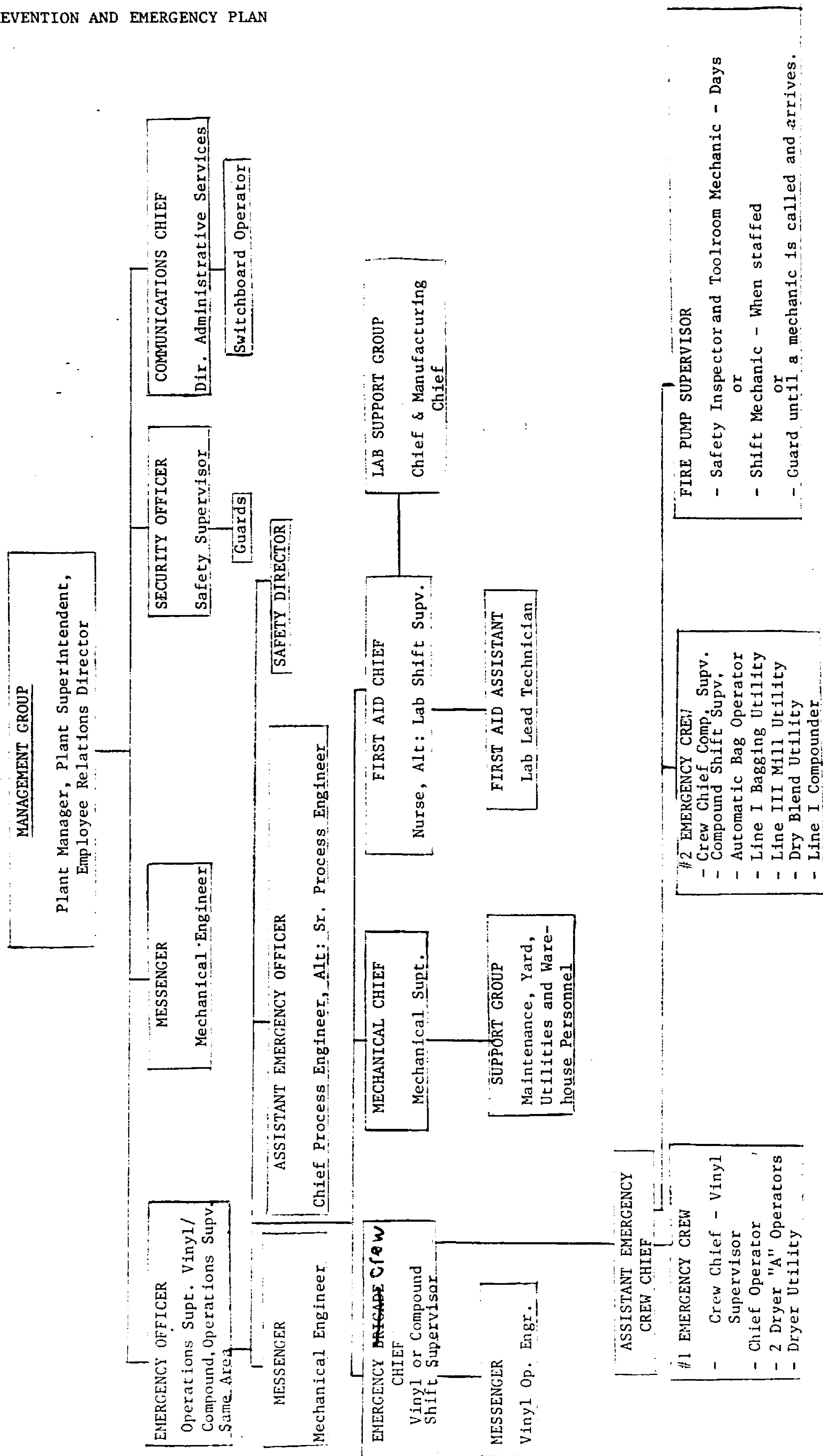
When advised by the Shift Supervisor, or his designee, the guard will start calling the names listed below in numerical sequence (rank order) from the appropriate list.

<u>VINYL</u>		<u>VCM TANK FARM</u>		<u>COMPOUND</u>		<u>UTILITIES</u>	
1.*	P. E. Markey 369-6019	1.*	L. D. Honeycutt 343-5595	1.*	R. G. Gilreath Unlisted	1.*	J. L. Horstman 369-6005
2.*	C. R. Miller 369-9100	Then call Vinyl listings.		2.*	P. J. Kober 369-7096	2.*	F. W. Frantz 369-8508
3.*	M. P. Blackwell 1-323-2997			3.*	C. R. Miller 369-9100	3.*	C. R. Snowden 1-327-7382
4.*	A. H. Sather 369-9271			4.*	A. H. Sather 369-9271	4.*	C. R. Miller 369-9100
5.*	V. A. Belk 369-4416			5.*	V. A. Belk 369-4416	5.*	A. H. Sather 369-9281
6.*	J. Friend 369-7377			6.*	J. Friend 369-7377	6.*	V. A. Belk 369-4416
				7.* J. Friend 369-7377			
<u>SWITCHBOARD OPERATOR</u>							
		(1)	Frossard, J.	369-6990			
		(2)	Michels, L.	369-6743			
		(3)	Pope, J.	Unlisted, (Call So. Central Bell Operator)			
7.*	R. G. Gilreath Unlisted			7.*	P. E. Markey 369-6019	8.*	P. E. Markey 369-6019
8.*	P. J. Kober 369-7096			8.*	M. P. Blackwell 1-323-2997	9.*	M. P. Blackwell 1-323-2997
9.*	J. L. Horstman 369-6005			9.*	J. L. Horstman 369-6005	10.*	R. G. Gilreath Unlisted
10.*	C. R. Snowden 1-327-7382			10.*	C. R. Snowden 1-327-7382	11.*	P. J. Kober 369-7096
11.*	F. W. Frantz 369-8508			11.*	F. W. Frantz 369-9508		
12.*	J. G. Roberts 369-8059	16.*	R. A. Frohreich 1-327-6070	20.	J. A. Dixon 369-8372	24.	A. L. Barr 369-8232
13.*	J. V. Uptain 369-8109	17.*	V. L. Thornhill 369-8952	21.	R. A. Miller 1-327-0951	25.	R.D. Jackson 256-4639
14.*	R. W. Rye 369-4730	18.*	W. F. Higginbotham 1-327-0827	22.	J. L. White 369-2991	26.	J.R. William 256-3810
15.*	G. A. Morgan 369-6522	19.	C. E. Davis 369-8780	23.*	L. D. Honeycutt 343-5595	27.	V.E. Messick 1-327-0741
				28. D.S. Cox 369-8752			

*Telephone Number Programmed into Guardhouse Telephone Ringer.

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EMERGENCY ORGANIZATION



A

PLANT EMERGENCY

ALARM DATA SHEET

DATE: _____

TIME: _____

ALARM: Fire Vapor Evacuation* Tornado**
(Circle One)

- * Evacuation alarm must follow either the fire or vapor alarm.
- ** The tornado alarm and the evacuation alarm are the same alarm. The difference lies in the fact that the evacuation alarm by itself means a tornado is approaching. The evacuation alarm must be preceded by either the fire or vapor alarm.

LOCATION: _____

SPECIFIC NATURE OF PROBLEM

Alarm Activated By: _____