

Vista Polymers
A Division of
Vista Chemical Company

Highway 25
Post Office Box 91

Aberdeen, Mississippi 39730
Phone (601) 369-8111

CHEMICAL PLANT SAFETY AND HEALTH MANUAL
ABERDEEN, MISSISSIPPI

SUBJECT PLANT EMERGENCY ACTION GUIDELINES

EFFECTIVE DATE _____

PREPARED BY *Don L. Truitt* SAFETY DIRECTOR

APPROVED BY _____ PLANT MANAGER

References 29 CFR 1910, Subpart L - Fire Protection
20 CFR 1910 1017 Vinyl Chloride

VISTA

SUMMARY OF EMERGENCY ACTIONS

The following items describe, in outline form, the actions that must be taken or considered in the event of a plant emergency. The items are not organized in order of priority. Details of this summary are found in the sections that follow.

Page No

I Immediate Actions

A	Sound the emergency alarm	3
B	Stop all hot work	3
C	Evacuate and count heads	4
D	Rescue missing personnel	5
E	Emergency Controls	5
	- Control vapor releases by remote and/or local block-in of valves	6
	- Activate Emergency Organization, if necessary	6
	- Protect personnel and extinguish fires	7
	- Secure chlorine leaks	7
	- Utilize fire protection systems	8
	- Utilize emergency manpower	9
F	Utilize outside assistance if needed	11
G	Evacuate plant and community areas as needed	12
H	Notify community as necessary	12
I	Re-enter work areas when it is safe to do so	13

II Other Emergency Organization Matters

A	Position descriptions	14
B	Reporting requirements	23
C	Emergency phone numbers	24
D	Attachments	26, 28, 31, 33, 43

GENERAL

The Aberdeen Chemical Plant Management recognizes its responsibilities to its employees and the citizens of Aberdeen in the event of an emergency. The plant will make every effort to prevent the conditions which can lead to an emergency. In event of emergency, the primary concerns shall be the safety of employees and the general public.

PURPOSE

This plan has been developed to fulfill the following purposes:

- 1 To ensure the safety and welfare of employees and the general public in the event of a plant emergency,
- 2 Minimize property damage and provide for the resumption of normal operations following a plant emergency,
- 3 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,
- 4 Describe the duties of each position listed in the emergency organization, and,
- 5 Outline the requirements for reporting plant emergencies

SCOPE

A plant emergency is any unexpected event or condition which requires immediate action to prevent:

- 1 Injury to personnel or members of the community,
- 2 Adverse environmental impact, and/or,
- 3 Serious damage to plant equipment

Plant emergencies include but are not limited to:

- 1 Toxic, flammable, or corrosive material releases,
- 2 Fires and/or explosions, or,
- 3 Personal injury that requires removal of a person from an elevated location
- 4 Bomb threats against the plant

The extent to which this plan is implemented will be determined by the severity or potential severity of the incident. This determination will be made by the Emergency Officer (alternate Area Shift Supervisor).

IMMEDIATE ACTIONS

The management of the initial response to any emergency is the key to a successful outcome. This responsibility rests with the Emergency Officer (alternate Area Shift Supervisor). During this period, the following actions must be taken or considered:

I Sound the Emergency Alarm

Anyone discovering an emergency should report the condition and location to the Vinyl control room by radio, Gaitronics or telephone extension 2200. The Lead Operator taking the call will turn on the alarm and initiate public address (P A) and Gaitronics announcements in the following sequence:

- Alarm on - 10 seconds - then off
- Announce the location and condition (vapor release, fire, etc.)

The alarm system will be tested weekly during the first system tests.

II STOP ALL HOT WORK!

Motor vehicles, portable transfer system, welding machines and other sources of ignition must be shut down immediately whenever the plant emergency alarm is sounded. Shut down and secure operations as required to prevent further injury to personnel or damage to equipment as follows:

- A Stop flow of flammable materials feeding fires or potential fires, including dryer and incinerator gas burners, inert gas generator, building heaters, etc.
- B Boiler house operation is to be shut down only in cases where unfavorable wind conditions and flammable material release is great enough to present a hazard. Boiler house shutdown will normally occur on orders from the Plant Manager, Plant Superintendent, Emergency Crew Chief, the Emergency Officer, or the Safety Director. The Utility Technician should act rapidly to shut down all ignition sources in the boiler house area. The forced draft fans on boilers may be needed to prevent vapor cloud flashback.
- C Smoking on plant property is prohibited while the plant is under an alarm condition.

IMMEDIATE ACTIONS - ContinuedIII Evacuation and Headcount

When area evacuation is necessary, all personnel will be accounted for in one of the following uncontaminated locations

- Primary evacuation area,
- Secondary evacuation area;
 - At fence south of main gate, or,
 - At east gate (drum yard) if main gate is unsafe because of smoke or high vapor concentration
- North property line in safe location

Headcounts will be done as specified in Departmental Headcount Plans (see Attachment D). Emergency response personnel will report to the emergency location after being properly accounted for

Primary Evacuation Areas

Vinyl Area - at pad north of the control room

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

Lab - Office area near radio

Utility Technicians - Boiler house

Maintenance - Main shop

Administrative Services - Canopy at main west entrance to main warehouse

Back-Shift Administrative Services - Guard house

Back-Shift - Mechanical Personnel - Shift Mechanics, pad north of Vinyl control room All other personnel report to the guard house

Main Office Personnel - Main office lobby

Back-Shift - Engineering, Research or Office Personnel - Guard house

Contractors and Truck Drivers - North of main gate

IMMEDIATE ACTIONS - ContinuedIII Evacuation and Headcount - continued

Visitors must be accounted for by escorting them to their point of entry

Vista employees (plant and non-plant) working after normal business hours must be logged in on the Off-Hours Entry Log at the main gate. These personnel must report to the guard to satisfy the headcount requirement.

The guard will review the emergency action instructions printed on the vehicle pass with all incoming truck drivers prior to entry. Plant personnel should remind truck drivers about their responsibilities if the proper actions are not being taken.

Always evacuate upwind or at right angles to the wind. Use the wind socks (417, 281 silos, 502 blend tank), or steam plumes to choose the safest, upwind escape route.

IV Rescue

Personnel who are not accounted for may be injured and rescue operations required. This will be determined by the Emergency Officer or Management Group after notification of the results of the headcount by the guard.

If the emergency is due to injury in an elevated location, the following equipment must be brought to the injury location by the first aid team:

- From First Aid - First Aid Kit
- Scoop Stretcher
- Rescue Ropes (Green Bag)

- From Emergency Equipment Station - Basket Stretcher
- Leather Gloves

Plant personnel will use this equipment under the joint direction of the Emergency Officer, Safety Director, Plant Nurse and/or ambulance personnel.

V Emergency Control

The consequences of any given emergency condition are in many cases predictable and therefore controllable. Timely actions by plant personnel can minimize the seriousness and duration of the incident. Emergency conditions require a coordinated effort using every safe and reasonable control method at our disposal. (There is a potential for emergency conditions to occur during electrical power failure. For this reason, the Vinyl Department has developed specific power failure procedures which are appended as Attachment E.)

IMMEDIATE ACTIONS - ContinuedV Emergency Control - continued

This section of the plan is divided into the following categories

- Vapor Releases
- Fires
- Chlorine
- Fire Protection Systems
- Emergency Manpower

Emergency control responsibilities are:

Vinyl Supervisor - VCM tank farm, reactor and dryer areas, boiler house and lagoons

Compound Supervisor - All remaining areas

A Vapor Releases

Vapor releases of flammable compressed gases such as vinyl chloride or propane must always be handled as if an ignition could occur at any time. Spills of other chemicals such as chlorine can be extremely dangerous and must be handled as instructed during utilities emergency training. Actions taken to control a chemical vapor release should include

Control of Risks to Plant Personnel

- Activate emergency alarm
- Obtain necessary manpower (consider use of Emergency Organization)
- Minimize personnel in area - bystanders should be evacuated
- Use fire turnout equipment and Scott Air Paks as needed
- Avoid entry into explosive vapor-air mixtures

Protection Equipment

- Start deluge systems immediately
- Provide additional fire water using fire monitors to disperse liquid/vapor as needed

Minimize Release of Material

- Block in leaking equipment remotely first - then as close as safely possible
- Recover the material from the blocked in equipment if possible

IMMEDIATE ACTIONS - ContinuedV Emergency Control - continuedConsider Community Evacuation

- If required, notify the Aberdeen Police Department at 369-6454

B Fire

Emergency personnel must evaluate the materials and circumstances involved in every fire. Liquid spill fires of flammable liquids like Methanol or gasoline should be put out. Compressed gas fires (i.e. VCM or propane) can cause destructive space explosions if they are extinguished without shut-off of gas flow. In these cases, it is recommended that the gas be allowed to burn itself out after block-in. Sound judgement by the Emergency Officer is critical to the safe control of any emergency.

The specific action taken to control fires are the same as the controls listed for vapor release.

C Chlorine

In the event of a chlorine leak, plant response must be directed toward

- Sounding the emergency alarm
- Stopping the leak safely
- Calling our supplier to obtain assistance in safe removal of the leaking container from the plant (or safely disposing of the contents)
- Community notification if needed

Thompson Hayward Chemical Company supplied our chlorine. They will respond if requested to any chlorine related problem and want to be informed if and when we experience problems with their containers. Whenever we have problems with ton tanks, they plan to respond as a matter of policy. Their emergency telephone numbers are

Jackson, Ms. Office (24 hr /day - using answering service)	1-969-3177
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Wayne Meyers (Vista Sales Contact)	1-373-4327
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John Newman (Branch Manager)	1-922-1219
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IMMEDIATE ACTIONS - ContinuedV Emergency Control - continued

The guard can make the call He/she needs answers to the following questions before the call is made

- What is leaking?
Tank size and item that is the leak source
- How bad is the leak?
Large/small, vapor/liquid, etc.
- Can we control with our emergency kits?
- When are they needed?

When the leak has been temporarily controlled with the capping kit, our preference is for them to take the cylinder to their filling plant in Memphis They will do this if it can be done safely If they feel that transporting the cylinder is not a safe approach, they will discuss other alternatives with the Plant Manager The seriousness of a chlorine leak can be reduced if the leak is on the liquid side of the tank by rolling the tank such that the leak is from the vapor side of the tank

D Fire Protection Systems

Deluge systems, fire monitors, hose stations, and other equipment have been installed throughout the plant to

- Eliminate ignition sources,
- Cool equipment,
- Dilute flammable vapors; and,
- Remove heat from fires

The various fire protection systems can be started as shown below

<u>System</u>	<u>How Started</u>	
Reactor/VCM Compressor Shed Deluge Systems*	<u>Manual</u>	- Pull box station at deluge valve
	<u>Automatic</u>	- Control panel switch - Flammable vapor detectors (reactor areas only) - Fire (heat) detectors
Sphere Weir & Fire Monitors	<u>Manual</u>	- Air bottles-field - Local switch (Weir only)
	<u>Automatic</u>	- Control panel switch - Fire (heat) detectors (Flammable vapor detectors)

IMMEDIATE ACTIONS - ContinuedV Emergency Control - continuedD Fire Protection Systems - continued

Other fire monitors and hose stations are manual

-
- * Loss of pressure in the supervisory air system below 7 psig will cause the diaphragm bypass valve (control valve) to release the water trapped in the upper chamber of the deluge valve. When this occurs, the pressure of the water from the fire water system will push the water out of the deluge valve's upper chamber causing fire water to flow automatically to the deluge spray piping system.

Deluge Systems - should be used for

- Serious leaks from rotating equipment seal
- Flammable material releases from valves, flanges, relief systems, or other process equipment NOTE Use caution when putting cold water on metal castings (i.e. compressors, vacuum pumps, Corken compressors) Thermal shock could fracture the case.
- Fires

Fire Monitors (stationary or portable) - should be used

- Where no deluge systems exist
- Where discharge is above the protected vessels' deluge spray nozzles
- To supplement deluge systems in areas of high heat or vapor concentration

Other Equipment

Additional fire fighting equipment is available to supplement fixed fire monitors and preconnected fire hose. This equipment can be found in fire hose houses marked with a (-) and at the Vinyl area emergency equipment station.

E Emergency Manpower

The objective of any plant emergency response is to control the incident without injury to personnel and minimal equipment damage. In order to achieve this objective, the Emergency Officer must concentrate his attentions on

- Evaluating the nature and extent of the emergency
- Planning the plant response
- Determining manpower and equipment needs
- If appropriate, call out the Emergency Organization
- If needed, notify or request help from the fire department, police department and/or hospital ambulance service
- Keep our neighbors in mind - evacuate them if appropriate

IMMEDIATE ACTIONS - ContinuedV Emergency Control - continuedE Emergency Manpower - continued

The basic emergency response guidelines are

- 1 Activate the plant emergency alarm from the control room as follows

- Turn on the emergency alarm for ten seconds
- Reset the alarm
- Announce the nature of the problem twice over the public address and Gastronics systems
- The guard will announce the wind direction and speed after the alarm announcements have been made

Any time the emergency alarm is sounded, all contractors and plant departments except compound, dry blend, and plasticizer will immediately follow the evacuation plan. Compound, dry blend and plasticizer personnel will await instructions from their supervisor unless the emergency involves a fire. In the event of a fire, all personnel should respond according to department fire procedures.

Lab personnel should report to the lab when the alarm sounds. Two lab personnel should be designated to respond to the vinyl control room as requested for first aid assistance. All other Lab personnel should stay near the base radio to respond to needs for first aid.

If the emergency is due to a fire, emergency crews are to follow departmental fire plans, obtain turnout gear and proceed to the upwind side of the emergency.

- 2 Activate callout of the Emergency Organization if appropriate from the control room

A Normal Office Hours Announce "Activate Emergency Organization" twice over the public address and Gastronics systems

B Back Shifts - Have control room personnel instruct the guard to call out the Emergency Organization per the call list (Attachment B)

- 3 Follow the Emergency Control Guidelines for fires and vapor releases, or personnel rescue
- 4 Initiate rescue response to locate personnel who were not accounted for during the headcount

IMMEDIATE ACTIONS - ContinuedV Emergency Control - continuedE. Emergency Manpower - continued

- 5 Initiate rescue response for personnel known to be down in the area of the emergency if it is judged safe to do so by the Emergency Officer.
- 6 Take care of injured personnel - call in an ambulance to stand by if needed
- 7 Assist the Utility Technician as needed to control emergencies in the utilities area
8. Evacuate the plant and/or community if threatened with toxic concentrations of vapor or smoke or if a fire explosion potential exists which could impact the community
- 9 Determine the extent of contamination during vapor releases During the emergency, this should be done with the Honeywell area monitoring system During office hours, the Safety Supervisor will make the determination During back shifts, the Vinyl Supervisor will make this determination using available manpower

VI Outside Assistance

Outside police, fire and medical resources should be utilized if needed The guard will call if requested

Aberdeen Fire Department	369-9551
Ambulance	369-2455
or	369-9393
Aberdeen-Monroe County Hospital Emergency Room	369-2455
Dr R E Coghlan (Office)	369-2411
(Home)	369-4418
Dr J N Turnage (Office)	369-2413
(Home)	369-6311
Dr Arthur Brown (Office)	369-6977
(Home)	369-9426
Aberdeen Police Department	369-6454

Guidelines for the use of the Aberdeen Fire Department are

- The Aberdeen Fire Department has agreed to provide assistance in the areas of manpower and fire water pressure boosting for handlines

IMMEDIATE ACTIONS - ContinuedVI Outside Assistance - continued

- The Emergency Officer is responsible for determining if fire department assistance is necessary to control a fire. If he determines that they are needed, he must initiate the call by notifying the guard. He must assign someone to meet the fire truck at the guard house. The guard should be informed as to who has been assigned to meet the fire truck so he can tell the fire truck driver who to follow. The guard will hold the fire truck until the escort arrives. Specific instructions should be given to the employee assigned to meet the fire truck so the route of travel and destination are understood. (A reactor Lead Operator can give these instructions to the fire truck driver on entrance road east of the control room.) After the instructions have been given to the fire department personnel, one of their initial respondents will return to the gate to guide additional fire personnel to the scene as a group.
- The Emergency Officer shall retain control of all fire fighting operations.
- Additional manpower from the fire department may arrive at the plant in personal vehicles. They should be allowed to pass through any roadblock. They are to park in the employee parking lot. Fire department personnel are to assemble at the gate and will be escorted to the fire location by a Vista employee, designated by the Emergency Officer or the fire department respondent. Aberdeen Fire Department personnel must be equipped with fire turnout equipment. The Emergency Officer must judge the needs and send firemen back if the turnout equipment is inadequate.

VII General Plant Evacuation and Community Notification

Vista Chemical Company will act as a responsible citizen of Aberdeen and notify the community of any toxic or flammable gas release, or fire that could pose a hazard outside the plant boundaries.

The Emergency Officer must make an initial assessment of the emergency. In this evaluation, two questions must be answered and actions initiated if appropriate.

- A Can the emergency be controlled with personnel currently in the plant? If not, notify the guard to initiate callout of the Emergency Organization as noted in Attachment B of this plan.
- B Can the gases or smoke and vapors enter other populated areas in sufficient concentration to be harmful? If other unit areas of the community can be harmed by the emergency, the following items must be considered:

IMMEDIATE ACTIONS - ContinuedVII General Plant Evacuation and Community Notification - continued

- 1 Wind direction and speed,
2. The size of the leak, release or fire,
- 3 Is the gas/smoke cloud dispersing or is it staying together and headed for nearby unit areas or neighborhoods.

Sound judgement is of the utmost importance. If the Emergency Officer or Emergency Crew Chief believes the decision to evacuate plant areas and/or notify community officials can safely wait until the Plant Manager or his designee arrives, he should do so. If, however, there is a clear risk if the decision is delayed, paragraph B below should also be implemented. The actions which follow any decision to evacuate down wind areas are

- A Instruct the Vinyl Lead Operator to sound the evacuation alarms (Gaitronics alarm for evacuation local to the plant, Gaitronics and siren for conditions when harm can come to nearby neighbors). Plant evacuation instructions should reference general plant areas to avoid confusion.
- B Instruct the guard to notify the police department.

The guard should repeat the following message to the police department dispatcher:

"THIS IS _____ (NAME) _____, SECURITY GUARD AT VISTA POLYMERS. THERE HAS BEEN A (FIRE, TOXIC GAS, FLAMMABLE GAS RELEASE AT THE PLANT). YOU SHOULD INITIATE EVACUATION PROCEDURES (DIRECTION FROM PLANT) OF THE PLANT.

INSTRUCT RESIDENTS TO LEAVE (ON FOOT, BY VEHICLE), OR STAY IN HOME AND CLOSE WINDOWS AND DOORS AND STOP AIR CIRCULATION"

- C Instruct control room personnel to turn on the big siren.

The City of Aberdeen has an evacuation plan. In order to prevent exposure to people in vehicles passing by or traveling into an emergency, roadblocks will be established as early as possible in an emergency as manpower resources are available. Plant salaried personnel will be issued to photo identification emergency roadblock passes to allow them to respond to emergencies at the plant.

VIII RE-ENTRY TO WORK AREAS

Areas that have been involved in plant emergencies shall not be entered for the resumption of work until the area supervisor has verified the problem has been corrected, the area is free of hazards, and the "all clear" alarm sounded.

EMERGENCY ORGANIZATION

Please refer to the attached EMERGENCY ORGANIZATION chart (Attachment A) 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.

I Activation

The shift supervisor responsible for the area where the emergency occurs will become the Emergency Chief. He is then responsible for all initial immediate actions which can include activation of the Emergency Organization to obtain help. If the Emergency Organization is needed, it is activated as follows:

Normal Office Hours - The Emergency Officer or Emergency Chief will have an announcement made over the public address and Gaitronics systems to "ACTIVATE EMERGENCY ORGANIZATION". The announcement and the specific assembly instructions will be given two times.

Back Shifts - The announcement and assembly instructions should be given as noted above and the guard should be instructed to make the initial callout for the area involved. Once the personnel from this callout arrive, they may request the guard to call out additional specific personnel. All personnel contacted for emergency duties should immediately report to the plant to assume their emergency duties.

The Acting Emergency Officer can request all announcements and callouts to be accomplished through the control room.

II Emergency Organization Specific Duties

The following is a discussion of the specific duties assigned to each position in the Plant Emergency Organization:

A Management Group

The Management Group will consist of the Plant Manager, the Plant Superintendent and the Employee Relations Director. The Vinyl or Compound Operations Superintendent not serving as the Emergency Officer will serve as an alternate for a vacancy in the Management Group. The duties of the Management Group are:

1. Provide leadership for the Emergency Organization and coordinate all activities connected with control of the situation. Three portable radios are designated for use in these situations. They will be kept by the Plant Superintendent.
2. Promptly release factual information to the news media in order to prevent erroneous reports.

II Emergency Organization Specific Duties - ContinuedManagement Duties - continued

- 3 Notify Corporate Management and keep them apprised on the situation
- 4 Notify next of kin in cases of serious or fatal injuries
- 5 Maintain close communication with the Emergency Officer

B 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. When the Operations Supervisor and Superintendent are both present, the Operations Supervisor will also act as an Assistant Emergency Officer. The duties of this function are

1. Work closely with the Emergency Crew Chief in determining the most effective manner of establishing control of the situation
2. Keep the Management Group informed of the situation and the action being taken to bring it under control
3. Rely on the advice and help of the Assistant Emergency Officers and the Safety Director
4. Issue instructions for the "Call-Out" of off-duty employees and advise the Security Officer of who is authorized to enter the plant

C Assistant Emergency Officers

The Chief Process Engineer and Operations Supervisor will serve as the Assistant Emergency Officers. They will assist the Emergency Officer in the evaluation of the situation and the planning of action necessary to establish control of the emergency. They will also provide any technical information regarding the equipment of process that might be necessary. They will keep the Emergency Officer informed of their whereabouts at all times. Senior Process Engineers will serve as alternates to the Assistant Emergency Officers.

D Security Officer

The Safety Supervisor will serve as the Security Officer, and will report to the Management Group. His specific duties are

II Emergency Organization Specific Duties - ContinuedD Security Officer - continued

1. Provide security protection for all plant property and material. This will include procurement and assignment of guards, as needed.
2. Dispatch personnel to the roadblocks so that authorized personnel may be identified and allowed into the area. Unauthorized personnel must be turned back in a firm, tactful manner.
3. Media representatives will be directed to the Management Group in the front office area as directed by the Plant Manager
4. Provide emergency supplies that might be needed during the emergency. This includes emergency arrangements to obtain diesel fuel for the fire pumps and emergency generators
5. Monitor VCM concentrations in the area of the secondary evacuation area southwest of the guard house. In the event of high VCM concentrations, he shall direct personnel to a safe area along the highway. If the gate area becomes unsafe due to hazardous chemicals in the air, he will direct the guard to move to the alternate evacuation gate at the east warehouse.

E Safety Director

The Safety Director will assist the Emergency Officer in controlling the emergency. 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 conditions throughout the plant. He will also see that emergency equipment is serviced and placed in the proper locations. He will act as leader of a team appointed by the Manager to make a detailed study of the causes of the emergency, action taken, and any recommendations made to prevent similar emergencies.

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

1. Review of the Fire Prevention and Emergency Plan on an annual basis.
2. Organize training programs as necessary to insure prompt and adequate response to emergencies in the following areas:

II Emergency Organization Specific Duties - ContinuedE Safety Director - continueda Basic Fire Training

All personnel who work in the plant operating areas will be given basic fire fighting training 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.

b Advance Fire Training

All operating, mechanical and engineering personnel will be trained more extensively in automatic fire control systems, operation of the plant fire water system, fire fighting methods and basic fire theory.

c First Aid

Organize annual refresher first aid training of first aid personnel.

d Mock Drills

Organize mock drills in which serious plant emergency conditions are staged. The drills will include notification of the Aberdeen Fire Department and Aberdeen Police Department. A critique will be conducted immediately following the drill. All drills and critique results will be documented and reported as necessary. For communication purposes, Walker Manufacturing will be notified of drills.

3 Emergency Crew Chief

The Vinyl Shift Supervisor will fill the position of the Emergency Crew Chief during emergencies in the vinyl unit areas, boiler house, waste treatment and VCM tank farm areas. The Compound Shift Supervisor will act as the Emergency Crew Chief in the remaining areas. The appropriate Chief will direct the Emergency Crew and others involved in fire control or other emergency action. He will work closely with Emergency Officers and the Safety Director in the effective use of manpower and equipment necessary to bring the situation under control.

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 required. The Emergency Chief will initiate the actions to put this plan into effect.

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

II Emergency Organization Specific Duties - ContinuedG Assistant Emergency Crew Chief

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

1. Make sure that all of the Emergency Crew members in his area leave for the scene of the emergency.
2. Report to the Emergency Crew Chief for instructions.

H Mechanical Chief

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

1. Organize and direct damage control work as directed.
2. He will be in charge of all personnel reporting to the shop area.
3. Assist the Emergency Officer in any way necessary to bring the situation under control.
4. Establish relations with outside utility companies and work closely with them, maintaining or restoring service as soon as possible.
5. Notify the Security Officer of the names of those people in the plant under his direction and of any who have been called out.
6. Keep the Emergency Officer informed of his whereabouts at all times.
7. Organize and direct clean-up and repair crews for the purpose of getting the plant safety back into operation as soon as possible.

I First Aid Chief and Assistants

The Nurse will act as the First Aid Chief and will report to the Emergency Officer. Laboratory "A" Technicians will act as Assistants. The alternate for the Nurse will be the Laboratory Lead Technician. The laboratory personnel will assist the Emergency Officer and/or the Nurse. The duties of this function are:

II Emergency Organization Specific Duties - ContinuedI First Aid Chief and Assistants - continued

- 1 The First Aid Chief will dispatch personnel to the emergency scene whenever the Emergency Organization is activated and there is a call for first aid help. The remaining first aid personnel will report to the Lab office area (near the radio)
- 2 Give first aid to the injured
- 3 Advise the Communications Chief if ambulances are needed
(Note An ambulance may be requested to stand by as noted in the Medical Treatment Section below)
- 4 Keep the Management Group and the Security Officer informed of injuries, including the names and estimates of severity
- 5 Accompany injured personnel being transported by ambulance

J Messengers/Escorts

The Messengers will report to the Emergency Organization member to whom they are assigned. The Mechanical Superintendent will assign Mechanical Engineers to the messenger positions as appropriate. Process Engineers not assigned duties shall report to the Management Group.

K Fire Pump Operators

Serious plant emergencies can require extended operation of fire pumps. In order to meet this need, the first pumps will be staffed using Mechanical Department personnel. During normal day operation, the Mechanical Superintendent will assign a mechanic to report to the number 1 (north) pump house, and the Shift Mechanic will report to the number 2 (south) fire pump house. Whenever the Shift Mechanic is the only employee available, he will move back and forth between the two pump house buildings during emergencies that do not involve the fire pumps, the mechanics should remain in the shop.

Normally, coverage is necessary at both pump houses anytime the Emergency Organization is called out. The guard is to call out mechanics to fill the positions as rapidly as possible.

The duties of the fire pump operator are

- 1 Monitor engine temperatures and oil pressures
- 2 Be alert for abnormal sounds and conditions
- 3 Monitor fuel levels and alert the security officer (Alternate Safety Director) when fuel levels fall below 50 percent. The Security Officer will then initiate procurement of the fuel.

II Emergency Organization Specific Duties - ContinuedK Fire Pump Operators - continued

- 4 Monitor and report any abnormal conditions to the Security Officer (Alternate Safety Director)

Whenever there is no coverage by any of the above, the Dryer Lead Operator or Reactor Lead Operator shall ensure that the north fire pumps are operating. The guard can start the pumps manually, if requested. The Vinyl Shift Supervisor shall be responsible for the shutdown of the fire pumps when any emergency condition has been corrected.

I Emergency Crews

There are two Emergency Crews. The objectives of these 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 when summoned by alarms, the Shift Supervisor, or when the Emergency Organization is activated. The crews will consist of the following based on a Vinyl area emergency.

Number 1 Emergency Crew

Emergency Crew Chief - Vinyl Shift Supervisor and personnel noted on Attachment A "Emergency Organization"

Number 2 Emergency Crew

Assistant Crew Chief - Compound Shift Supervisor and personnel noted on Attachment A "Emergency Organization"

The specific duties and responsibilities are discussed at length in the section entitled "Emergency Control" beginning on page five of this plan.

M Maintenance Support Group

The Support Group will consist of all Maintenance personnel (supervisors and hourly). They will report to the Maintenance Shop and be under the direction of the Mechanical Chief. The Maintenance Superintendent will stay in the shop with the personnel. The Mechanical Chief will contact him to assign emergency duties to this group as needed.

N Guards

The specific emergency duties of the Security Guard are

- 1 Direct ambulance and other vehicles to the emergency as noted in this plan using plant personnel as guides

II. Emergency Organization Specific Duties - Continued

N Guards - continued

- 2 Stop all vehicle traffic into the plant anytime an alarm is sounded. Have the driver park without blocking the gate. Do not permit unauthorized personnel to enter the plant (See media response below).
- 3 Phone the Emergency Organization when instructed to do so by the Vinyl Shift Supervisor, the Compound Supervisor, and their designees (See Attachment B).
4. Monitor fire pump operation as noted in K above.
5. Record wind direction and speed, barometric pressure, time and outside temperature at the time of a gas release or fire.
- 6 Announce the wind speed and direction (i e from _____ to _____) over the plant public address system.
- 7 Receive all calls regarding the headcount status This information shall be reported to the Management Group. (Alternate Emergency Officer, Emergency Crew Chief)
- 8 Media Response - In a serious plant emergency, media personnel with either be calling in or coming to the gate Calls by the media on the telephone shall be handled by requesting the caller's name, who he/she represents, a phone number where they can be reached and a promise that the message will be given to the Manager or his designee The statement should also include the fact that either the Plant Manager or his designee will call them with a statement. Media personnel who arrive at the gate will be escorted by Vista personnel from the gate area to a pre-determined location where the Manager or his designee will make statements
- 9 In the event the main gate area becomes unsafe because of smoke or high vapor concentrations, the guard shall open the east gate (Transportation Warehouse) for an evacuation exit

O. Communications Chief

The Director of Administrative Services will act as the Communication Chief His alternate will be the Plant Accountant The Security Officer will act as Communications Chief until the Director of Administrative Services or the Plant Accountant can be contacted and arrive In this capacity, he will

II Emergency Organization Specific Duties - ContinuedO Communications Chief - continued

- 1 Establish the gatehouse switchboard as an emergency and communications headquarters. An off-duty Security Guard will be provided to assist the Communications Officer
- 2 Handle all incoming and outgoing calls.

REPORTING REQUIREMENTS

All significant emergencies will be reported by the Plant Manager to the General Manager - PVC and VCM Operations within 24 hours. For this reason, the Plant Manager must be promptly informed of any emergency incident. The guidelines for reporting emergency conditions are shown below.

I Fires

- A Any fire which causes damage should be reported to the Plant Manager
- B Any other fire incidents should be reported to the Plant Manager by the next workday after the fire

All significant fires will be thoroughly investigated by a team appointed by the Plant Manager. A FIRE REPORT (Attachment C) must be completed as rapidly as possible.

II Vapor Releases and Other Emergencies

- A The Operations Superintendent will issue a written report on each VCM emergency as soon as possible, not to exceed 24 hours
- B The Plant Safety Director or the Plant Superintendent will report VCM emergencies and the facts obtainable to the OSHA Area Director as required by OSHA regulations
- C The Environmental Coordinator or the Chief Process Engineer will report VCM emergencies and the facts obtainable to the Mississippi Bureau of Pollution Control and/or the Environmental Protection Agency if required by regulations.
- D The Environmental Coordinator or the Chief Process Engineer must be notified regarding any spill of a potentially hazardous material as soon as the spill is discovered. He will promptly report the spill to the Superfund National Response Center if required by regulation.

MEDICAL TREATMENT

Anyone who is injured during an emergency is to be treated promptly

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 (material) which is suspected of causing the injured person to be overcome. Material Safety Data Sheets are available at the Aberdeen-Monroe County Hospital Emergency Room.

If needed, the Aberdeen-Monroe County Ambulance Service may be requested to stand by at the plant to treat/transport personnel.

EMERGENCY TELEPHONE NUMBERSMedical

Ambulance, Monroe County Hospital	369-2455
Dr Coghlan, Office	369-2411
Home	369-4418
Dr Turnage, Office	369-2413
Home	369-6311
Dr Brown, Office	369-6977
Home.	369-9426

Police

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

Fire Department

Aberdeen Fire Department	369-9551
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Light and Water Department

Aberdeen Light & Water Department	369-4731
or	369-2159
or	369-6454

Gas Company

Mississippi Valley Gas	961-6900
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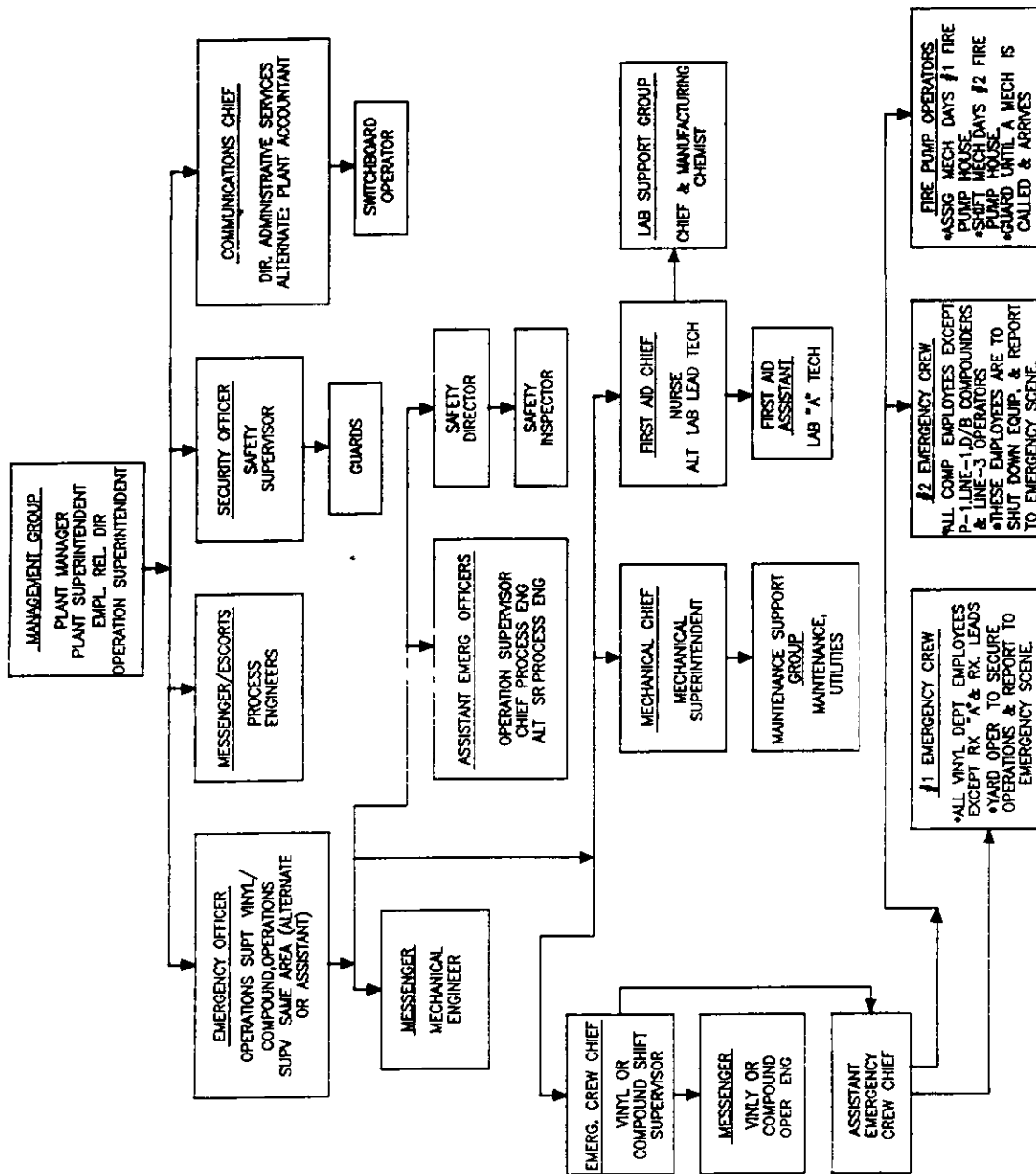
EMERGENCY NUMBERS - ContinuedHeadquarters Personnel

R D. Gamblin, Office.	713-531-3586
Home..	713-531-0674
T. H. Huffman, Office..	713-531-3496
Home.....	713-579-9832
M. S. Reynolds, Office	713-531-3210
Home ..	713-726-0936
T. G. Grumbles, Office.....	713-531-3445
Home .	713-445-4053
J. C Ledvina, Office ..	713-531-3446
Home .	713-879-8732
J R Drumwright, Office .	713-531-3444
Home .	713-492-8449

ATTACHMENT A

EMERGENCY ORGANIZATION

ATTACHMENT "A" EMERGENCY ORGANIZATION



ATTACHMENT B

EMERGENCY ORGANIZATION LIST

Attachment BEmergency Organization Call List

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

<u>Call Sequence</u>	<u>Vinyl</u>	<u>Compound</u>	<u>Utilities</u>
1	Rodger Collins 369-6184	Charles Worlow 369-8862	Terry Noland 1-205-698-9568
2.	John Olson 1-327-4356	Steve Hillman 369-7892	Jimmie Autrey 1-328-2955
3	Chris Markerson 1-840-7395	Chris Markerson 1-840-7395	Chris Markerson 1-840-7395
4.	Paul Kober 1-328-0173	Paul Kober 1-328-0173	Paul Kober 1-328-0173
5	Jerald Uptain 369-8109	Jerald Uptain 369-8109	Jerald Uptain 369-8109
6.	Jerry Roberts 369-7451	Jerry Roberts 369-7451	Jerry Roberts 369-7451
7	Steve Carroll 1-328-7811		
8	Dean Honeycutt 343-5595		

Attachment B-1 is a Secondary Call List. The personnel to be called by the Guard will be identified by any of the above noted Emergency Organization respondents after they arrive on the scene.

Effective date

February 23, 1995

Attachment B-1Mechanical

Johnny Hull
343-8495

Dale Andrews
369-4582

Craig English
1-329-8766

Joseph Hegwood
1-356-4118

Michael Carter
1-680-4655

Sam Brown
256-8164

John Ray Hamilton
369-8290

Gilbert Morgan
369-6522

Process Engineering
& Environmental

Ted Nickerson
369-9235

Veldon Messick
1-328-2474

Kenny Akins
1-327-3851

Reed Mackay
1-329-2533

Rory Sneed
1-329-2368

Lab

Amy Bagwell
369-4406

Richard Williams
256-3810

Charles Clark
369-6255

Administrative

Mike Swierc
1-328-5887

Tommy Cummings
369-6058

Joe Beall
1-328-1189

Janice Cullum
369-6768

Vinyl

Alton Reeves
369-4315

Billy King
256-7086

O C Pace
256-3791

David Covington
369-7301

Mike Langford
256-7693

Compound

James Howell
256-8991

Bill Davis
369-9181

Ronnie Gilreath
343-5406

Dave Gathings
343-5815

Effective date

February 23, 1995

ATTACHMENT C

FIRE REPORT

ABERDEEN CHEMICAL PLANT

FIRE REPORTPART I. (To be filled in by Supervisor of area or activity involved)Date of Fire: _____ Time: _____ A.M.
P.M.

Exact location of fire: _____

Equipment involved (tank no., pump no., name of bldg., etc.) _____

How did the fire start? _____

How was the fire put out? _____

Description of personnel injuries: _____

Description of property damage: _____

What immediate action have you taken to prevent a recurrence? _____

Was fire protection adequate? _____

Estimate of damage: (A) 0 - \$1000 (B) \$1000-\$15,000 (C) \$15,000 +

Production delays. _____

Signed _____ Date _____ Signed _____ Date _____
(Supervisor) (Dept. Head)PART II. (Safety Department Review)

Remarks: _____

Signed _____ Date _____
(Safety Director)PART III. (Management Review)

Remarks. _____

Signed _____ Date _____ Signed _____ Date _____
(Plant Supt.) (Plant Mgr.)

RETURN TO SAFETY DEPARTMENT

ATTACHMENT D

DEPARTMENTAL HEADCOUNT PLANS

COMPOUND, DRY BLEND, PLASTICIZER EVACUATION PLANNon-Fire Emergency

The Shift Supervisor will be responsible for the headcount during a non-fire related emergency evacuation. All personnel except the following will evacuate to the Primary Evacuation Area (warehouse at northwest corner of the staging area directly south of the auditorium)

- Line V Mill Operator
- Line I Mill Operator
- Dry Blend Compounder
- Line III Mill Operator
- Plasticizer Operator
- Shift Supervisor

The Shift Supervisor will take a headcount at the Primary Evacuation Area and direct those personnel to evacuate as appropriate. After he has reported his headcount results to the guard, he will return to the operating area to assist the above personnel in the shutdown of the process equipment. When shutdown is complete, he will lead the evacuation of the above personnel and report headcount results to the guard.

In the event that the Primary Evacuation Area is contaminated, the alternate evacuation site will be used. The alternate evacuation area is the fence line east of the parking lot and south of the guard house. If the alternate site is contaminated, the personnel will move to a safe location along the property line north of the plant.

Fire Emergency

The Line I Mill Operator will be responsible for the headcount during a fire emergency. The fire team from the Compound Department will consist of

- Shift Supervisor - Team Leader
- Line III Compounder
- Dry Blend Utility Operator
- Line I Compounder
- Line I Utility Operator
- Automatic Bagger Operator
- Line V Compounder
- Line V Utility
- General Helper Assigned to Compound

Upon notification of a fire, each member of the fire team will report to the Line I mill area for headcount and assembly. When the team has assembled/organized, they will depart for the equipment storage point or emergency location whichever is appropriate. The Line I Mill Operator will report the results of the headcount to the guard.

Fire Emergency - Continued

The following personnel will remain in the department to shut down the process equipment

Line I Mill Operator - Headcounter
Dry Blend Compounder
Line III Mill Operator
Plasticizer Operator
Line V Mill Operator

The Line I Mill Operator will lead the evacuation of the above personnel after all equipment has been shut down. Normal procedure will be to evacuate to the Primary Evacuation Area, take a headcount and report as a group to the emergency scene. Again, the headcount results must be reported to the guard.

MECHANICAL DEPARTMENTMAINTENANCEMonday Through Friday, 7 00 A M to 3 30 P M

All Maintenance Supervisors, the Maintenance Engineer, and all hourly personnel will report to the Primary Evacuation Area (Maintenance Shop) The Maintenance Supervisor will be responsible for performing the headcount and will report the name of those individuals not accounted for to the guard

Headcount Backup The Maintenance Engineer will be responsible for headcount should the Maintenance Superintendent not be available If both the Maintenance Superintendent and Maintenance Engineer are absent, the I&E Supervisor will be responsible for headcount

Evacuation Backup The secondary evacuation point is the guard house and will be used in the event conditions make the maintenance shop unusable Should both the shop and the guard house become inaccessible, the east gate (by the drum storage area) will be used for evacuation

ALL OTHER SHIFTS

During all other shifts, Maintenance personnel (excepting the Shift Mechanic) will report to the guard house for headcount purposes, after reporting to the guard, the personnel will go to the Primary or Secondary Evacuation Points (described previously) until released When arriving at the plant, the Mechanical Chief will check the time cards to confirm the accounting of all personnel

UTILITIES

In all cases, the Utility Technicians will evacuate to the boiler house and notify the guard as to their location

CONTRACT PERSONNEL

Contract personnel will go to the Primary Evacuation Point and report to their supervisor After reporting at his evacuation area, the Contract Supervisor will consolidate the contractors' reports and report to the guard The Senior Mechanical Engineer will backup for these duties

Evacuation Area

Primary - Visitor parking area north of guard house

Secondary - East gate (by drum storage area)

LABORATORY

The Primary Evacuation Area for laboratory personnel is the radio area of the lab. If this area is contaminated, lab personnel shall proceed to the guard house and assemble as a group. Any visitors must be escorted to their point of entry to clear their name from the visitor log.

WHEN THE EMERGENCY ALARM SOUNDS - All lab personnel are to assemble at the primary evacuation area for a headcount. The Chief Plant Chemist will assign a laboratory technician to monitor the Honeywell VCM monitor in the laboratory. Two personnel are to be available to be dispatched to the vinyl control room with the first aid equipment and the lab portable radio. The remaining lab personnel are to remain near the radio for immediate dispatch as needed. When an ambulance is needed, one of the lab personnel may be dispatched to the gate to escort the ambulance along a safe route to the scene.

VINYLNon-Vinyl Emergency

All personnel are to report to the Primary Evacuation Area at the concrete pad north of the Vinyl control room. The Old Module Lead Operator will be responsible to account for all personnel. A status of all personnel will be given to the Vinyl Shift Supervisor as soon as possible with missing personnel reported to the guard.

The people that are to report to this area are

- Chief Operator
- Old Unit "A" Operator
- New Unit "A" Operator
- Dryer "A" Operators (2)
- Yard Operator
- General Helpers assigned to Vinyl
- Shift Mechanic (off-hours)

An alternative to reporting to the area would be to contact the Lead Operators by radio with the operator giving his position. All operators must report either in person or by radio. The Old Module Lead Operator will report the headcount results to the guard.

After the headcount has been done, the Vinyl Emergency Crew will assemble to respond to the emergency.

Vinyl Emergency

During an emergency in Vinyl, the Emergency Crew will assemble at the scene of the problem with the Vinyl Shift Supervisor reporting personnel status of the Crew to the Old Module Lead Operator. The reactor "A" operators are to report in person to the Supervisor if the problem is in their unit, or in person or by radio to the Lead Operator if the problem is not in their unit.

The Old Module Lead Operator will be responsible to account for all personnel. All personnel not on the Emergency Crew are to report to the Primary Evacuation Area. The only exception will be the reactor "A" operators as previously discussed. The remaining personnel include

- 1) Yard Operators
- 2) General Helpers assigned to Vinyl
- 3) Shift Mechanic (off-hours)

The Yard Operator will escort outside truck drivers to the guard to clear their name from the entry log after all engines have been shut down for all non-yard related emergencies.

In the case of an emergency in the VCM tank farm, the Yard Operator is to report to the Primary Evacuation Area to be counted and will then proceed to the tank farm.

VINYL - ContinuedVinyl Emergency - continued

If the Primary Evacuation Area is declared unsafe, proceed to the Secondary Evacuation Area near the guard gate. If the guard gate cannot be used (due to hazardous vapors), the east gate will be open for an evacuation exit.

TornadoesTornado Alert or Watch

A tornado watch issued by the Weather Bureau warns that conditions exist for tornadoes to develop. The weather radio should be monitored closely if Monroe County is included in the watch area.

Tornado Warning

A tornado warning is issued by the Weather Bureau after a tornado has been sighted. Once a tornado warning has been issued that includes Monroe County, all reactors are to be killed using normal kill procedures. The possibility of a power failure will be large so preparation according to the Power Failure Procedures should be followed. No reactor will be charged back until the tornado warning has been lifted.

If a tornado is within sight of the plant with reactors not killed, use the emergency AMS system in the automatic mode. Monitoring levels of AMS added will be of little concern. Secure the recovery systems and all fired equipment (dryers and incinerator). Evacuate personnel to a safe area away from the reactor areas.

ADMINISTRATIVE SERVICES DEPARTMENT

This plan is intended to provide the guidelines necessary to

- 1 Assemble department personnel in the designated evacuation area,
- 2 Designate an individual responsible for performing and reporting the results of the personnel headcount,
- 3 Provide guidance to department employees on actions to take in response to emergency situations

An emergency situation is defined as, but not limited to, the following

- 1 Fire,
- 2 A release of toxic, flammable or corrosive materials, or,
- 3 Explosion

Emergency Action

In the event of an emergency situation, department personnel should take no action other than reporting to the situation to the Vinyl control room and clearing the area. When clearing the area, care should be taken not to take any action which would impede the action(s) of emergency crews responding to the situation or which would endanger the health and safety of the employee or emergency crews. Such action would include, but are not limited to

- 1 Failure to shutdown internal combustion engines or electrically powered operating equipment, or
- 2 Entering or passing through contaminated areas

Assembly

When notified that an emergency situation exists, department personnel are to assemble in the department evacuation area which is located

- 1 During normal working hours Beneath the canopied entrance to the main warehouse adjacent to the administrative offices
- 2 Outside normal working hours (after 4 15 p m , on weekends and holidays)
At the main gate guard house
- 3 If primary evacuation area (1 or 2 above) is contaminated Along the fence east of the parking lot and south of the guard house. If the guard house area is contaminated, the alternate secondary evacuation area is the east Transportation warehouse gate

ADMINISTRATIVE SERVICES DEPARTMENT - ContinuedAssembly - continued

- 4 The Receiving and Warehouse leads are to escort outside truck drivers to the guard to clear their name from the entry log after all engines have been shut down

If further evacuation is necessary, personnel will be instructed to move to a safe location along the property line north of the plant

Personnel movement to an evacuation area should be orderly and by the most direct route available. Car should be taken when approaching a contaminated area. The rule of thumb is to move around the contaminated area at right angles to the prevailing wind, keeping yourself between the wind and the source of contamination. Wind direction may be determined by observation of the wind socks located atop silos 417 and 281 or slurry blend tank 502.

Headcount and Reporting

Immediately upon reporting to the appropriate evacuation area, the Warehouse Purchasing Supervisor must commence a headcount of all assigned personnel. After completion and reconciliation of the headcount, a report of all missing personnel by name(s) and the last known location(s) must be made to the security guard. In the absence of the Warehouse Purchasing Supervisor, responsibility for the headcount shall pass to the following personnel in numerical order:

- 1 Plant Accountant
- 2 Stores/Supervisor
- 3 Materials Coordinator

Warehouse personnel working outside normal hours, on weekend or holidays will be counted by the lead warehouse person. A report of missing personnel, of those reporting to work, will be made to the security guard as stated above.

MAIN OFFICE PERSONNEL⁽¹⁾DURING REGULAR WORKING HOURS

Primary Evacuation Area Main Office Lobby

Secondary Evacuation Area Guard House

HEADCOUNT

Responsibility

Primary Senior Mechanical Engineer
Secondary Senior Process Engineer

The following will be accounted for

Production Schedulers
Mechanical Engineers
Process Engineers
Drafters
Environmental Coordinator
Employee Relations Assistant
Secretaries
Visitors as noted in main office log book

The following other main office personnel have other responsibilities to attend to and the headcount will be made as part of the emergency organization

Plant Manager
Plant Superintendent
Employee Relations Director
Vinyl Operations Superintendent
Compound Operations Superintendent
Mechanical Superintendent
Maintenance Engineer

The Operations Engineers will report to their departments' evacuation area

OFF-SHIFT

All main office personnel and visitors must log in and out at the guard house. The primary evacuation area for off-shift personnel is the guard house. The guard is responsible for checking the log book and accounting for personnel during an emergency evacuation.

- (1) Includes visitors for which main office personnel are responsible. All visitors must sign in and out. If during normal working hours at log book in the lobby, if off-hours, at guard house. Personnel on test runs will be informed of evacuation responsibilities by the individuals responsible for the test run.

ATTACHMENT E

POWER FAILURE PROCEDURES

POWER FAILURE PROCEDURESI INTRODUCTION

When a power failure occurs, the first consideration is the in-plant personnel and secondly, to secure the plant. When power is lost, the reactor agitators stop and cooling tower pumps and fans are lost. This makes each reactor in the polymerization mode a potential runaway reactor where the pressure and temperature may rise significantly and uncontrollably. Most power failures are of short duration (just a few seconds) but occasionally an extended power outage will occur. All shift personnel must know what action to take in either situation. These procedures will be outlined in this manual along with steps to take once power is regained.

II UNEXPECTED AND EXPECTED POWER FAILURE PREPARATIONS

Unexpected power outages are hard to plan for. Preparations can be made for expected power outages that could result from the presence of threatening weather such as thunderstorms.

- A Weather Awareness - All operating personnel should be appraised of upcoming weather conditions. There are two ways to do this. The first is just looking at the cloud patterns and current conditions, the second is the weather alert radio monitor in the Vinyl Shift Supervisor's office which will sound an alarm as severe weather approaches our area. The change of a power outage increases during thunderstorms and we should prepare ourselves accordingly.
- B Dress For the Occasion - If thunderstorms are approaching, operations personnel should be prepared by getting rainsuits on in advance of rain downpour. All Shift Supervisors, Chief Operator, and Reactor "A" Operators should always carry a radio when outside the control room, regardless of the weather. All field personnel should have a flashlight and a pair of channel locks.
- C Double Check Emergency AMS Systems - Prior to thunderstorms, all Emergency AMS Kill Systems are to be double checked. It is important that these systems work when needed.
- D Preload Catalyst Bombs - Preload catalyst bombs of each reactor in polymerization mode with kill solution. This will allow these reactors to be killed on a timely basis if the decision is made to kill reactors early.
- E Panel Operator Precautions - In the event of imminent severe weather, the panel operator in each module should take the following precautionary measures.

II UNEXPECTED AND EXPECTED POWER FAILURE PREPARATIONS - ContinuedE Panel Operator Precautions - continued

- Normally kill any reactors which have been running at least four hours (three for D-700 and 745) These reactors will have a fair amount of resin conversion and will be one less reactor to worry about should a power failure occur
- Do not charge any reactors back until the weather front has passed and charging is approved by the Shift Supervisor
- If possible, hold an empty reactor in each module down and under a vacuum This will allow you to vent a reactor to another if necessary
- Keep a mental track of which reactors would need to be killed first and keep your Shift Supervisor, Chief Operator, and Reactor "A" Operator advised of which reactors he will have to kill and in what order if the power does go out

F Reactor "A" Operator Stationing - As severe weather approaches, the "A" Operator for each module is to be stationed in that module and be prepared to manually kill reactors as necessary

G Shift Supervisor and Chief Operator Stationing - Shift Supervisors and Chief Operators should be in the control room or in their assigned module

Shift Supervisor - Old Module

Chief Operator - New Module

H Panel Operator Stationing - All panel operators should be at their respective panel station

I Yard Operator - As severe weather approaches, the Yard Operator should shut down all VCM unloading compressors and block in each liquid and vapor line Contact Shift Supervisor or Chief Lead after this is done

III WHEN THE POWER GOES OUT

A Short Duration Outage - Most of the power outages at the plant are of short duration (a few seconds) Actions during this time period mainly involve restarting equipment (reactor agitators, cooling tower pumps and fans, incinerator, etc) but do not normally require use of the emergency systems Panel operators should closely monitor each reactor during the time frame of the power outage and when power is restored to ensure that the agitator restarts, cooling water flow is re-established, and the polymerization reaction is under control Reactors can be bumped/killed with AMS using the normal injection system if needed

III WHEN THE POWER GOES OUT - ContinuedB Extended Power Outagea) Panel Operator Response

- Reset all panel alarms
- The dryer panel operator is to turn on the emergency power systems by turning on the toggle switch in the supply room for the emergency lighting generator and place the battery pack in emergency by throwing the switch into the "Emergency" position
- The dryer panel operator is to be the timekeeper on how long the power has been out, and communicate this information with reactor panel operators
- The reactor panel operators should relay the status and pressure of each reactor to the affected field personnel
- Reactor kill guidelines during a power failure
 - Bump 5265/5305 batches using a manual mode of "AUTO" system within thirty seconds after the power is lost. These products run at higher pressures and an increase in pressure in these reactors is more critical. Have Shift Supervisor or Chief Lead check outage in AMS pots to verify addition to reactor
 - You will have between one and two minutes to kill the remaining reactors. All reactors must be killed within two minutes
 - Reactors which have run the longest and those just reaching heat-up will tend to run away first
 - Once a reactor starts to run away, it will become increasingly difficult to kill. The reactor contents stop swirling after three to four minutes and AMS injection is much less effective at this time
 - The automatic kill system should be used in the "Manual" mode to add short AMS injections to a reactor. The field personnel should verify addition by monitoring the level in the sightglass on the AMS Emergency Kill pots. If addition is not successful through the automatic AMS line, the manual addition system should be used
 - The "Auto" mode of the automatic system should be used as a last resort. If repeated short AMS injections are not successful in controlling the polymerization reaction (in conjunction with use of the Emergency Cooling Water System), the "Auto" mode should be used which will inject the entire AMS pot contents into a reactor

III WHEN THE POWER GOES OUT - ContinuedB Extended Power Outage - continueda) Panel Operator Response - continued

- After approximately five minutes (time necessary to activate the Emergency Instrument Air System), the Emergency Cooling Water System can also be used for reactor control. The Emergency Cooling Water System supplies enough cooling capacity for one reactor in each module. Do not use the Emergency Cooling Water System if there is inadequate firewater available to fight an existing fire since the diesel pumps supplying emergency cooling water also supply water to the plant's firewater system. Operating procedures for each reactor module are as follows:

New Module

- 1 Close CV-104 (New Module Recovery Cooling Water Supply Valve) by using the switch located on the new module recovery panel
- 2 Open CV-102 (New Module Emergency Cooling Water Supply Valve)
- 3 Open the cooling water control valve on the reactor condenser that is to be supplied with emergency cooling water. Close off other cooling water control valves in the new module by placing the individual reactor cooling water flow controller in manual and setting the output at 0%.
- 4 Emergency cooling water flow can be switched from one reactor to another by opening and closing appropriate cooling water control valves

Old Module

- 1 Open CV-101 (Old Module Emergency Cooling Water Supply Valve) by using the switch located on the new module recovery panel
- 2 Open the cooling water control valve on the condenser that is to be supplied with emergency cooling water. (Close all other cooling water control valves in the old module by placing the individual reactor cooling water flow controller in manual and setting the output as 0%.)
- 3 If cooling water is needed for D-300 and D-400, open CV-103 (Emergency Cooling Water Supply Valve for D-300/D-400)

III WHEN THE POWER GOES OUT - Continued

B Extended Power Outage - continued

a) Panel Operator Response - continued

Old Module - continued

4. Emergency cooling water flow can be switched from one reactor condenser to another by opening and closing the appropriate cooling water control valves

- Switches for major equipment such as recovery vacuum pumps and compressors, charge pumps, etc should be switched off to minimize a potential power surge when power is regained
- If power is lost during a charge, take all pumps out of "AUTO" position or charge will restart when power is restored

C Reactor "A" Operator Response

- If you are not on top of the reactors when the power goes out, you should go there immediately. The only exception is if the Shift Supervisor determines that the weather is too severe for the Reactor "A" Operator to safely climb to the top of the reactor structure. The reactors will be killed using the "Manual" mode of the automatic AMS Kill System. This mode allows for short AMS injection through the automatic kill line.
- The 5265 or 5385 batches running will be bumped with AMS during the first thirty seconds of the power failure by using the "Manual" mode of the automatic AMS injection valves for two seconds or until the Shift Supervisor or Chief Operator give instructions to close the valves.
- The Shift Supervisor or Chief Operator will be stationed at the base of the reactor and will check that the AMS pot level has changed.
- When all reactors have been killed and are under control, assist the Shift Supervisor or Chief Operator in putting the duraseal systems on nitrogen, blocking in the mechanical seals on the recovery vacuum pumps and compressors, blocking in the VCM charge pumps, block in stripping steam supply to each reactor and to batch water strippers, and block in steam supply to blowdown tank. Monitor the nitrogen pressure on the duraseal systems. If the pressure does not hold, it will be necessary to block in the reactor seals.

III. WHEN THE POWER GOES OUT - Continued

D. Shift Supervisor and Chief Operator Responsibility

- If you are not at the base of the reactors when the power goes out, go there immediately

Shift Supervisor - Old Module

Chief Operator - New Module

- You will be responsible for monitoring the pots and making sure AMS gets in when the panel operator kills a reactor.
- The panel operator directs reactor killing from the control room. The Shift Supervisor may elect to kill reactors earlier at his discretion if in his judgement the situation is serious enough to do so
- When all reactors have been killed and are under control, assist the Reactor "A" Operator in putting the duraseal systems, blocking nitrogen, blocking in the catalyst injection systems, blocking in the mechanical seals on the recovery vacuum pumps and compressors, blocking in VCM charge pumps, block in stripping steam supply to each reactor and to the batch water strippers and block in steam supply to blowdown tank. Monitor the nitrogen pressure on the duraseal systems. If the pressure does not hold, it will be necessary to block in the reactor seals.
- The first responsibility of the "A" operators assigned to drier room is to start-up the Emergency Instrument Air System as soon as possible. The reactor panel operators cannot use the Emergency Cooling Water System until instrument air pressure is established. Cooling water is essential to reactor control. Start-up procedures for the Emergency Instrument Air System are as follows
 1. Check to see if the generator is operating. The generator should start automatically on power failure. If the generator is not running, make sure the starting mode switch on the generator's control panel is in the "Auto" position. If the generator still will not start, check the trouble indicating lights on the generator's control panel to determine the problem
 2. Close the chain operated 3" cooling water valve located under walkway west of the Deltech building
 3. Start the sump pump supplying cooling water to the Joy reciprocating air compressors and Deltech air dryer. This pump is the east - most pump on the north side of the chiller building

III WHEN THE POWER GOES OUT - ContinuedD Shift Supervisor and Chief Operator Responsibility - continued

4. Start the Deltech air dryer by pressing the local "Start" button on the dryer's instrument panel. If the dryer does not start, press the "RESET" button on the instrument panel and then the "START" button. If the dryer does not start, start air compressors.
 5. Start either no. 8 or no. 9 compressor, located northwest of the Deltech building, by pressing the local "START" button.
 6. After the compressor has started and the air system pressure has risen to at least 40 psig, notify the vinyl control room that the Emergency Air System is operating and that the Emergency Cooling Water System can now be used.
- After the Emergency Instrument Air System has been started up and instrument air pressure has been established, the dryer "A" operators should then block in all blend tank aeration lines. This will prevent slurry from backing into the air lines. Also close slurry supply valves from each blend tank.

E Yard Operator

- Lock out silo unloading valves to prevent valves from operating

IV WHEN THE POWER COMES ONA Panel Operator

- Check with Shift Supervisor, Chief or "A" Operator to see if duraseal units and mechanical seal purge water pumps have been restarted and that duraseal and lip seal flow to each reactor seal has been established. If so, restart agitators.
- The dryer panel operator should turn off emergency lighting generator and reset battery pack power to normal mode.
- Set up cooling water system to normal operating position by opening/closing Emergency Cooling Water valves.

B Reactor "A" Operator

- Set up reactor agitator seals to normal operating position. Restart duraseal units and check reactor seals.
- Set up the VCM charge pumps to normal operating conditions.
- Set up mechanical seals on the recovery vacuum pumps and compressors to normal operating conditions.

IV WHEN THE POWER COMES ON - ContinuedB Reactor "A" Operator - continued

- Check all catalyst ram valves to be sure all are closed and then set up injection systems to normal operating positions. The "RESET" switch must be depressed before the ram valve will operate
- Measure and record outage in each of the AMS kill pots. Relay this information to Shift Supervisor or Chief Operator. Refill each pot to proper level

C Shift Supervisor and Chief Operator

- Restart cooling tower pumps and fans
- Restart the incinerators
- Contact Reactor "A" Operators for outages in each AMS kill pot
- Reset deluge diesel fire pumps
- Once the threat of power outage has passed, instruct utility operator to return instrument air system to normal operating positions. The utility operator should also be told that the cooling water system has been returned to normal so that he can start chemical treatment of the water to prevent possible scaling in heat exchangers and condensers

D Dryer "A" Operator

- Once air pressure has been re-established, set up blend tank aeration
- Flush slurry lines
- Restart all equipment, one dryer line at a time
- Empty cones on fluid bed

Once the power outage has passed and all systems have been returned to normal, the decision must be made as how to process the emergency killed batches. Accurate outages from all AMS kill pots are essential in determining what steps to take. The Vinyl Operations Supervisor or Superintendent will make the decision as to how each batch is to be handled.