ICRP Index of Annexes

ARKEMA
INNOVATIVE CHEMISTRY

Document Name:			
Integrated Contingency and Response Plan **Incident Command Crisis Communication Guide**			
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Revision No.	Date	Revision Description (last three)
0	21 December 2018	First Issue
1	20 September 2019	Minor clarifications and added fire protection equipment flow rates
2	10 December 2019	Update to reflect current ERT membership and contact information

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Jay Fulton Manager of Safety and Health	Carl Stewart Plant Operations Manager

Incident Command Crisis Communication Guide
Limited to Company Use Only
(Guard Actions Checklist)

	ITEMS TO BE EVALUATED/ACCOMPLISHED IMMEDIATELY	Complete	Time
1	Notify the Shift Supervisor (SS). In the event the SS is not available, notify the designated Shift Incident Commander immediately.		
2	Notify Plant Personnel ✔ Ask SS whether to evacuate employees or shelter-in-place…….. ✔ Sound Plant Alarm System with appropriate message…….. ✔ Radio notifications to channels 1, 2, 3, and 6 …… ✔ Make 555 notifications…….. ✔ Call in Incident Commander (IC) to replace SS		
3	Remind SS/IC to use Send Word Now to call-in ERT if needed.		
4	Ask SS/IC if Area Ringdown should be activated. If yes, prompt SS/IC to decide on area evacuation, shelter-in-place, or notify only. (Circle the one used.)		
5	Remind SS/IC to consider notifying Emergency Message/Media/Area Managers via Ringdown System Code 50.		
6	Call Safety/Health: Jay Fulton: 270-776-5963…… Call Environmental: Greg Watson: 270-559-5692		
8	If needed, advise CIMAP via radio– **Confirm with SS/IC first**: ask SS/IC whether we are requesting aid or putting CIMAP on standby. See page 3 for description of Levels 0, 1, & 2, if needed.	Level 0: Level 1: Level 2:	
9	**If directed by SS/IC**, call 911 to: ✔ Activate Area Warning Sirens…… ✔ Police…… ✔ Ambulance……(Advise if it is SAFE to enter facility) …….. ✔ Notify Marshall County LEPC……(270-527-1333)…….. ✔ Notify Livingston County LEPC…(270-928-2196)……..		
	POST INCIDENT		
10	ALL CLEAR Notification at direction of SS/IC ✔ Plant Personnel on Plant Alarm…… ✔ Plant Personnel on radio channels 1, 2, 3, and 6…… ✔ Area Ringdown, if previously activated…… ✔ Ringdown System Code 50, if previously activated…….. ✔ CIMAP, if previously notified…… ✔ 911/LEPC's if previously notified		
11	Remind IC/SS to hold debrief with Personnel involved in incident (responders, guards, IC staff, etc.)		

Incident Command Crisis Communication Guide

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CIMAP/Plant Levels of Response to Emergencies

Crisis Communication	**Level 0**	**Level 1** **CIMAP: Notification**	**Level 2** **CIMAP: Required Assistance**
Level of Emergency Notification	**In-plant Incident**	**Impact off-site Notification**	**Impact off-site CIMAP Assistance Required**
Actions to be taken:	**Guard will:**	**Guard will:**	**Guard will:**
	Announce over 555/Plant Alarm System Instructions to plant personnel	Announce over 555/Plant Alarm System Instructions to plant personnel	Announce over 555/Plant Alarm System Instructions to plant personnel
	Determine from Plant Manager, Operations Manager, Shift Super, or person in charge if ERT needs to be called in	Notify CIMAP of Level 1 incident and sound 555/plant alarm to notify all employees Announce Wind Direction/Speed	Notify CIMAP of Level 2 condition, and sound 555/plant alarm system that evacuation is needed. Give wind direction/speed and location to assemble
		Immediately call Safety/ Environmental on-call personnel /ERT	Immediately notify personnel: Safety, Environmental, ERT
		Notify plant manager(s) as soon as feasible	Notify plant manager(s) as soon as feasible
		Close access gates and notify roving patrol to return to main gate for support and or assistance	Evacuate gate area if needed: Lock gates, turn on entrance **STOP** signs, take portable hand held radio, ICRP, etc.
		Keep CIMAP informed with updates every 10 minutes	Contact 134A Control Room. Call 911 for support in controlling road access (1523 & 95)
			Keep CIMAP informed with updates every 10 minutes

Command Post Locations/Staging Areas

Location of Command Posts:	Administration Building Main Guard Gate (Primary) 134a Control Room (Alternate) Engineering/Technical Building (Alternate)
Relocation Area:	Rolling Hills Shopping Center Calvert City Fire Training Center
Staging Areas:	**Plant: (dependent on wind direction)** **Primary: West Guard Gate** **Secondary: East Guard Gate**

OFF SITE NOTIFICATIONS

IC or DESIGNEE

Activation of area warning system:
- Call 911
- Give information from the list below
- When in doubt sound the alarm

CIMAP Notification:
- Determine appropriate level of CIMAP notification
- Request guard to make CIMAP notification

Activation of Area Ringdown System:
- Determine need for community notification
- Determine need for managers/media (Code 50) notification
- Follow activation instructions on pocket card

SAFETY

KYOSHA notification required when:

- ✔ 1 or more fatalities, within 8 hour period
- ✔ ≥3 **in-patient hospitalizations** (not ER visits or medical cases, but hospitalizations) w/in 8 hour period
- ✔ Amputation, loss of eye, or hospitalization of ≥ 2 employees as a result of a single work-related incident w/in 72 hour period
- ✔ Call 1-502-564-3070 KYOSHA, or after hours 1-800-321-6742, Central OSHA Office.
- ✔ **DO NOT LEAVE A MESSAGE, SPEAK TO A PERSON**

Have following information available:

a. Company name
b. Location of incident
c. Time of incident
d. Number of fatalities or hospitalizations
e. Name of any injured employees
f. Contact person and phone number
g. Brief description of incident

Notify Plant Manager, Safety & Health Manager and Environmental Manager ASAP. They will make the required notifications per Incident Reporting and Investigation Procedure, AIMS-ADM-0077

ENVIRONMENTAL

Notify Environmental Engineer On-Call **ASAP. See Posting on Shift Supervisor's Bulletin Board.**
If no answer, contact the Environmental Manager

Outside Agency Phone Numbers: Refer to External Incident Reporting procedure, HES-212-022, only rely on list below if procedure is unavailable.

Kentucky Emergency Response Team	(800) 928-2380
Kentucky Emergency Response Commission	(800) 255-2587
Kentucky 24-hour Environmental Response Line	(800) 928-2380
Kentucky Environmental Cabinet Paducah Regional Office	(270) 898-8468 [telephone] (270) 898-8640 [fax]
Kentucky OSHA Central OSHA Call Center	(502) 564-3070 or (800) 321-6742
Livingston County Local Emergency Planning Committee	(270) 928-2122 or (270) 928-2196 (Sheriff)
Marshall County Health Department	(270) 527-1496
Marshall County Local Emergency Planning Committee	(270) 527-1333 [telephone 1] (270) 527-6289 [telephone 2] (270) 527-4370 [fax]
National Response Center	(800) 424-8802
Paducah Water Works	(270) 442-4747
ATMOS (Natural Gas)	1-800-482-8429 362-8350 or 443-7235 If no contact call David Russell (cell phone) 556-6789
U. S. Coast Guard	(270) 442-1621 (Press #0 for Louisville, KY, & #2 for Paducah Office)
Tennessee Valley Authority (TVA)	Electric (270) 856-4500 Water / Reservoir (270) 362-4221

Outside Emergency Response Groups

Calvert City Fire Department	(270) 395-7138 or 911
Calvert City Police	(270) 395-4545 or 911
Kentucky State Police	(270) 856-3721
Lourdes Hospital	(270) 444-2444
Marshall County Ambulance	(270) 527-1243 or 911
Marshall County Hospital	(270) 527-4800
Marshall County Sheriff	(270) 527-3112 or 911
Baptist Hospital	(270) 575-2100

Neighboring Facilities

Carbide Graphite	(270) 395-4143
Sekisui	(270) 395-8500
Estron	(270) 395-4195
Ashland	(270) 395-4165
Waste Path	(270) 395-8313
P & L Railroad Trainmaster	(270) 444-4408
CCMA	(270) 395-7631
Wacker	(270) 395-4181
Westlake Chemicals	(270) 395-4151
Westlake Monomer	(270) 395-3222
Westlake PVC	(270) 395-4860

Key Plant Contacts

Facility Manager: Jeff Hall (270) 527-1031 or (270) 703-4222

HES Department Contacts and On-Call Listings are posted on the Shift Superintendents Bulletin Board

Manager of Safety & Health: Jay Fulton (270) 776-5963

Environmental Manager: Greg Watson (270) 559-5692

Communication Guide: Incident Commander Contact Listing, Refer to ICRP Annex 20 available in SS Office and on Document Directory. Only rely on list below if procedure is unavailable.

NAME	POSITION	PLANT PHONE NO.	HOME PHONE NO.	CELL PHONE NO.
HOME ADDRESS			RESPONSE TIME	
Carl Stewart*	Operations Manager	6585	(618) 524-3731	(270) 493-0628
7489 Providence Ln, Golconda IN 62938			45 Minutes	
Brent Lents	Technical Manager	6345	(270) 354-9216	(270) 205-7566
649 Salem Chapel Rd. N., Benton, KY 42025			30 Minutes	
Jim Ashford	Maintenance & MI Mgr.	6593	(618) 995-2141	(618) 751-0089
512 N. Ferne Clyffe Rd., Goreville, IL 62939			70 Minutes	
Jeff Hall	Plant Manager	6364	(270) 527-1031	(270) 703-4222
1897 Foust Sledd Rd., Benton, KY 42025			15 Minutes	
Brian Shemwell	Shift Superintendent	6379	None	(270) 205-0808
1358 Vanzora Rd., Benton, KY 42025			**30 Minutes**	
Dennis Bugg	Shift Superintendent	6379	(270) 354-8755	(270) 703-4650
1320 Olive Hamlett Rd. Benton KY 42025			**30 Minutes**	
Adam Mathis	Shift Superintendent	6379	(270) 395-9798	(270) 703-3931
352 Pugh School Rd., Benton, KY 42025			15 Minutes	
Jim Forsythe	Shift Superintendent	6379	(270) 354-6798	(270) 252-5291
185 Mermie Rd., Hardin, KY 42048			30 Minutes	

* Individual designated as primary IC

REACTS CONTACT LIST

Emergency Control Center	Call List Member	Work	Ext.	Home	Cell	Pager	Fax at Main Gate
Calvert City, KY All	Jay Fulton (TL)	270-395-6509	6509	270-437-3862	270-776-5963	N/A	270-395-7516
Calvert City, KY - Any Shipments involving Fluorochemicals	Garrick Ramage (And also Alternate TL)	270-395-6626	6626	270-928-9989	270-969-0700	N/A	270-395-7516
	Rance Dycus	270-395-6629	6629	270-395-5384	270-493-1751	N/A	270-395-7516
Fluorochemicals - Technical and Chemical Advice Department of Occurrence: Fluorochemicals – Div 4	Chris Douglas	270-395-6408	6408		270-217-1616	N/A	270-395-7516
	John Elliott	270-395-6639	6639	618-564-3212	618-638-3461	N/A	270-395-7516
	Brent Lents	270-395-6345	6345	270-354-9216	270-205-7566	N/A	270-395-7516
	Wayne Brooks	270-395-6652	6652		270-703-3929	N/A	270-395-7516
	Jason Perry	270-395-6441	6441	270-527-2857	270-906-5354	N/A	270-395-7516
	Jason McHaney	270-395-6310	6310		270-816-0400	N/A	270-395-7516
Fluoropolymers (Kynar) - Technical and Chemical Advice Department of Occurrence: Fluoropolymers – Div 38	Dustin Thompson	270-395-6419	6419		270-703-3866	N/A	270-395-7516
	Bryan Snow	270-395-6658	6658		270-994-1080	N/A	270-395-7516
	Wayne Brooks	270-395-6652	6652		270-703-3929	N/A	270-395-7516
	Jason Perry	270-395-6441	6441	270-527-2857	270-906-5354	N/A	270-395-7516
	Jason McHaney	270-395-6310	6310		270-816-0400	N/A	270-395-7516

ERT Members, Phone Numbers, Response Times and Shifts			
Name	Cell Phone No.	Response Time	Shift
Anderson, Doug[2]	(406) 855-2559	30 minutes	Days
Bugg, Dennis[2]	(270) 703-4650	20 minutes	C
Cash, Chad[2]	(270) 564-7906	60 minutes	Days
Conway, Mike [2]	(270) 625-2212	40 minutes	Days
Coakley, Price	(270) 331-2364	35 minutes	C
Cronon, James[2]	(270) 804-2551	25 minutes	Days
Dunn, Jon	(270) 804-9052	40 minutes	D
Forsythe, Jim[2]	(270) 205-1055	45 minutes	B
Gautney, Stan[2]	(270) 836-0044	20 minutes	Days
Goins, Chad [2]	(618) 645-1238	45 minutes	A
Gore, Adam[2]	(270) 703-8502	25 minutes	C
Henson, Alexis[2]	(270) 217-9940	10 minutes	Days
Henson, Scott	(270) 564-3516	12 minutes	D
Holland, Brad [2]	(270) 519-9888	25 minutes	C
Hooks, Billy	(270) 619-3925	40 minutes	B
Hounshell, Raea[2]	(270) 205-7360	30 minutes	Days
Leslie, Derek[2]	(270) 252-4491	30 minutes	Days
Long, Donald [2]	(270) 703-6775	10 minutes	Days
Massa, Tim [2]	(270) 519-0469	25 minutes	Days
Mathis, Adam [2]	(270) 703-2629	15 minutes	D
Miller, Kevin[2]	(270) 703-3867	20 minutes	Days
Mohon, Brian	(270) 705-9017	40 minutes	B
Moyers, Calvin	(270) 804-5024	45 minutes	C
Peden, Tony[2]	(419) 709-2565	20 minutes	Days
Reynolds, Mark [2]	(270) 205-7991	40 minutes	A
Rowland, JP[2]	(270) 556-0988	30 minutes	D
Schell, Monty[2]	(270) 210-0452	35 minutes	Days
Shemwell, Brian[2]	(270) 205-0808	30 minutes	A
Smith, Rodney [2]	(270) 908-1682	30 minutes	Days
Sterrie, Chris[2]	(270) 994-3586	30 minutes	Days
Thomas, Brian [2]	(270) 703-8582	20 minutes	Days
Winfrey, Barry	(270) 705-8346	25 minutes	B
Yancy, Jonathan	(270) 210-0773	25 minutes	Days
Medical Responders Only			
Fulton, Jay[2]	(270) 776-5963	30 minutes	Days
Crowe, Clark[2]	(270) 226-3403	45 minutes	Days
McHaney, Jason[2]	(270) 703-2496	30 minutes	Days

[1] – EMT Personnel (If designated)
[2] – Emergency Medical Responder Personnel
All plant personnel are First Aid/AED/CPR Trained

CRISIS COMMUNICATIONS: Emergency Response Safety Plan

Incident:

Location:

Date: **Time:**

SITE CHARACTERIZATION (Including Off-Site)

Area Affected by Release:

SURROUNDING EXPOSURES:

Temperature: **Wind Direction:** **Wind Speed:**

Access to Scene:

SITE HAZARDS

Substance Involved:

Primary Hazard:

Secondary hazard:

Primary Risk:

Secondary Risk:

CONTROL OF UTILITIES

Electric	**Turned**	**ON**	**OFF**
Gas	**Turned**	**ON**	**OFF**
Water	**Turned**	**ON**	**OFF**
Nitrogen	**Turned**	**ON**	**OFF**

AIR MONITORING
Initial Readings:

%LEL **%O2** **CO (ppm)** **H2S (ppm)**
Other Specific Chemicals

Final Readings:

%LEL **%O2** **CO (ppm)** **H2S (ppm)**

Other Specific Chemicals

CRISIS COMMUNICATIONS: WORK PLAN

CONTROL MEASURES

Plan of Action to Stop Source of Release
Sign Activated
Site Secured **Facility Shutdown**
PPE Level: A B C **Downgrade: B C D**
Decon Stations Established **Decon: Wet Dry**
Medical Assistance (Requested)

Personnel Assignments – Buddy System/Two-In-Two Out

Team Pre-Entry Briefing – Time:

Team De-Briefing – Time:

EMERGENCY PLAN

Signal to Exit Hot Zone

Evacuation Plan

Signals to be used if radio communications fail:

Communications: Radio channel 4 - Headcount
Radio channel 5 – Incident Communications

ATTACHMENTS

IC Flowchart
PPE Matrix
Decon Worksheet
Personnel Assignment and Accountability Form
Spill Report/Notification Form
Equipment List and Location

SKETCH OF INCIDENT AREA

North

East West

South

CRISIS COMMUNICATIONS: PERSONNEL ACTIVITY & ACCOUNTABILITY

Position	Name	Time Assigned
Incident Commander		
Safety Officer		
Public Information Officer		
Communications Officer		
Decon Officer		
Operations Officer		
Medical		
Environmental		

PERSONNEL ACTIVITY LOG (Minimum two in-two out)

Team No	Name	Assignment	Time In	Time Out

EVACUATION ACCOUNTABILITY

Time Evacuation Sounded:
Personnel Unaccounted:
Contractor/Vendor Unaccounted

PERIMETER CHECKED_____

ALL CLEAR ISSUED:_____

Crisis Communications Guide: POST-EVENT PLANNING

Recovery Plan:

Serious emergencies require that the Incident Command team manage the facility while the emergency is being dealt with. Included on this team are key decision-makers from each of the major departments of the plant. Their role is to provide staff support to the Incident Commander during the emergency, to maintain oversight of their particular areas of responsibility and to evaluate the restarting of effect areas.

Depending on the extent of damage, it may be prudent to initiate recovery procedures at the onset of any emergency. Just like the emergency response plan, a recovery team must be in place to cope with the various emergencies that could occur.

Recovery Team composition:

Plant Manager
Plant Operations Manager
Area Operations Managers
Technical Manager
Human Resources and Purchasing Manager
Manager of Safety & Health
Environmental Manager
Maintenance & MI Manager
Logistics Superintendent
Shift Superintendent(s)
Various Area Process Superintendents, Supervisors, and Engineers

The following business areas will have to be considered and the team will determine applicable assignments of responsibility.

Marketing:

- Provide continual management of all company-marketing programs.
- Complete client notification in a prioritized fashion (Telephone, Fax, letter, etc.).
- Manage and control all notifications to clients throughout the recovery operation.

HR/Purchasing:

- Coordinate the ordering, shipment and delivery of equipment, and supplies
- Ensure the retrieval and transfer of information and data files.
- Control the movement of equipment and supplies to and from effected site to alternate sites when applicable.
- Coordinate the transportation of company resource personnel to/from effected site and alternate sites.

Information systems:

- Manage and support requirements for process DCS systems.
- Contact local telecommunication vendor.
- Replace any damaged telecommunications.
- Replace any damaged Emergency Alarm systems.
- Identify and retrieve all software backup files.
- Establish data communications with mainframe, if necessary.
- Purchase any PC/LAN damaged hardware and software.
- Restore PC/LAN communications to end user location.

Other Considerations:

- Pertinent records;
- Critical accounting information;
- Raw materials information;
  - Specifications
  - Anticipated delivery times
  - Minimum quantities required
- Finished Product inventory;
- Plant engineering data on building, utilities, and equipment;

Business Resumption Checklist:

Part of being prepared for disaster is having a plan for resuming work safely once the danger has passed.

- Structural security: Have the structural integrity of the building or facility validated by qualified professionals before anyone else enters.
- Safe entry: Contact the proper government agencies to get approval to resume occupancy of the building.
- Clean-up safety: Train employees in proper selection and use of personal protective equipment such as eyewear, gloves and dust masks/respirators for cleaning and other operations.
- Air quality assessment: Make sure the workplace atmosphere is tested for asbestos and other chemical/toxic agents, as applicable.
- Ventilation: Have vents checked to assure water heaters and gas furnaces are clear and operable. Dust and debris can stop or impede airflow, decreasing its quality and healthfulness. Safely start up heating, ventilation and air conditioning systems; inspect lines before energizing and pressurizing. Test systems after inspection or have a qualified specialist do so. Blow cold air (vs. warm air) through HVAC systems first to help prevent the growth of mold in duct systems.
- Interior, exterior exposures: Inside, ensure wall and ceiling materials are not in danger of falling. Check for cracked windows and outside building materials, as these could fall onto pedestrians now or in the future.
- Protection equipment: Be sure fire and smoke alarms have been cleaned and tested before resuming occupancy. If such systems are wired into other systems, ensure they are still compatible and work efficiently and effectively. Thoroughly inspect fire-fighting systems such as sprinkler and chemical equipment functions.
- Electrical safety: Have electrical systems, computer cables and telecommunications equipment checked to ensure they are still safe and there is no danger of exposure to electricity. Wiring inspections should be conducted from the outside in to ensure wiring and connections will not short out due to water damage from rain or fire-fighting efforts.
- Use existing federal guidelines: Use start-up guidance materials provided by government agencies such as FEMA (www.fema.gov) and NIOSH (www.cdc.gov/niosh).
- Health/sanitation issues: Facility sanitation systems should be inspected and tested to guard against potential employee exposure to toxic agents. Any unused foodstuffs should be discarded. If the workspace has a kitchen, inspect oven hoods and other ventilation devices to ensure they are not clogged and are working efficiently.
- Office furniture: Inspect furniture to ensure it can withstand expected loads and usages. Ensure that binder bins (storage devices screwed or bolted to railing systems on walls and panels) have not become unstable due to water damage or shaking from explosions. Inspect office equipment to ensure it is level and stable and cannot tip over.
- Lighting: Make sure there are adequate illumination levels for employees. Emergency lighting should be checked to ensure it operates and functions correctly.
- Emergency planning: Ensure there is a clear path of egress for emergency employee evacuation. Ensure fire extinguishers are still operable and check for damage and serviceability. Replace damaged extinguishers immediately.

- Solid/hazardous waste removal: Safely gather and dispose of broken glass, debris or other materials with cutting edges immediately. (However, be sure such materials can be disposed of before collection to avoid creating even bigger hazards for both employees and the public.)
- Power checks: If there is no access to electricity on the site, do not use fueled generators or heaters indoors. Ensure there are no gas or sewer leaks in your facility. Check with local utilities for information regarding power, gas, and water and sewer usage. Check mainframes: If your facility has mainframe computer applications, have lines and cabling for chiller systems checked to avoid chemical leak out.
- Emergency procedures: Create a new emergency plan and distribute it to employees as soon as they return to work. In case of emergency, designate a place for employees to gather once out of the building or a phone number they should call following the emergency so all can be accounted for. Frequently update the emergency contact list with current names and phone numbers.
- Machine inspections: Inspect the condition of drain, fill, plumbing and hydraulic lines on processes and machines. It would be prudent to have plumbing lines evaluated and tested to detect any hazardous gases.
- Surfaces: Make sure flooring surfaces are acceptable and won't cause slips, trips or falls -- the second-leading cause of on-the-job deaths in the United States. ANSI standard A1264 -- Protection of Floor and Wall Openings is a good starting point.
- Have the Radiation Safety Officer (RSO) verify the status of the nuclear gauges. Comply with all reporting requirements as stated in USNRC Rules and Regulations, Title 10, Chapter 1, Parts 70 through 71, and KY Environmental Nuclear Regulatory Department.
- Report to State of KY OSHA any incident that meets the reporting requirements.

RESCUE TRUCK INVENTORY

Item	Quantity	Item	Quantity
Tri Pod	1	Rope Pads	5
Wench	1	SCBA's	4
Hooker Pole	1	Oxygen Bottle	1
Stokes	1	Edge Rollers	4
Back Board	1	Portable 4-1	3
Reeves	1	25' Portable 4-1	1
Sked	1	Set of Wristlets	1
Head Blocks	1	Bolt Cutters	1
Spider	1	Bungee Cords	10
Fan	1	1st Responder Kit	1
Fan Hose	1	100ft. Extension Cord	1
1 1/2" hand line w/nozzle	1	Lanyard	2
2 1/2" hand line w/gated "Y"	1	Webbing	4
2 1/2" working line	1	Prussic	4
Fire Monitor	3	Construction Harness	1
Repell Rack	8	5 gal. Buckets Foam	4
4" Single Pulley	12	LSP Half Back	1
540	2	Danger Tape	1
Utility Straps	9	Caution Tape	1
Stokes Harness	1	Box Alcohol Wipes	1
4" Double Pulley	4	Nomex Hoods	3
2" Double Pulley	4	Respirator Face Piece	2
4" Prussic Minding Pulley (single)	2	Fire Helmets	2
4" Prussic Minding Pulley (double)	2	Fire Gloves (pair)	2
I.D.	3	Fire Boots	3
Figure 8	2	Hose Keepers	4
Rigging Plate	2	Spanner Wrench	2
Utility Carabiners	3	Hydrant Wrench	3
Gibbs	5	Automatic Nozzles	3
XL Carabiners	4	Fire Axe	1
Regular Carabiners	8	Assortment of fittings	1
Swivels	2	Teflon Tape	1
Bags of Rope	3	Roll of Wire	1
Bolt Hole Anchors	2	Assortment of Gaskets	1
Threaded Bold Hole Anchors	3	Foam Eductors	2
"I" Beam Anchor	1	Assortment Plastic Nozzles	1
Pipe Wrench	3	Gated "Y"	2
Side Cutters	1	Block Valves	2

Safety Training Building Storage

Tripods
Wenches
Explosion Proof Lights
Confined Space Ladders
Ventilation Fans

Ambulance Building

Stokes with Backboard
Foam
Oxygen Compressor Trailer
Spare SCBAs and 5-Minute Escape Bottles
SKED

Head Count Officers and Assigned Areas

NAME	ASSIGNED AREA
Rhea Ann Phillips	Administration Building
Debbie Kipers	Administration Building
Clay Story	Boiler
Jared Whybark	Boiler
Sandra Forsythe	Technical Building
Karen Jones	Technical Building
Jeremy Leonard	Technical Building
Tracy Henson / Engineering Department Representative	East Gate
Guards	Main Gate
Zachary Howard	Storeroom
Shannon Cathey	Storeroom
Blake Abbott	Storeroom
Cory Carter	Storeroom
Guards	West Gate
*Heather Wadley	Head Count Officer
Lacey Duckett	Head Count Officer
Melinda Clapp	Head Count Officer
Amber Guess	Head Count Officer

* Individual designated as primary HCO

In the event of an evacuation, if the above named personnel are not available at their assigned location, a Head Count Officer will need to assign someone to assume their duties.

Locations of Emergency Centers

Location of Command Posts: Administration Building Main Guard Gate (Primary)
134a Control Room (Alternate)
Technical Building (Alternate)

Relocation Area: Rolling Hills Shopping Center

Hazardous Waste Emergency Response Information

Hazardous waste is managed in a variety of ways on site including Satellite Drum accumulation areas, less than 90 Day Drum Storage areas, as well as permitted Hazardous Waste Tanks, designated for specific waste streams from the process units. A brief description of each waste stream stored in permitted storage tanks and the capacity of permitted storage tanks is listed below, including a map with their location in the facility.

Hazardous Waste maintained in drums at the laboratory areas consist of Acetone, Methanol, Nitric Acid, and Hydrochloric Acid and will not exceed 120 gallons at any time. Hazardous Waste maintained at the North Waste Pad will typically consist of Aerosol Cans, MEK, TCE, DCM, Methyl Chloroform and other various wastes depending on plant application or process generating, but will not exceed 2500 gallons total at any given time.

PART II - Specific Conditions - Management of Hazardous Waste in Tanks:

Condition No.	Item ID	Condition
T-223	GSTO4 (Tank Group)	PART II - Specific Conditions - Management of Hazardous Waste in Tanks: Permitted Tanks. The following is a list of the permitted hazardous waste storage tanks at the facility:

Tank #	Permitted Capacity (gallons)	Diameter (ft)	Length (ft)	Corrosion Allowance (in)
V-0119	22,843	12	23	0.0625
V-0119A	22,850	12	23	0.2500
V-0121	6,266	8	14	0.0625
V-0229	6,000	7	18.5	0.1250
V-6103	23,688	12	24	0.1250

Waste(s) Stored:
Tanks V-0119 and V-0119A: D002, D003, D004, D006, D007, D008, D028, and D029 wastes from the Forane 141b, 142b, and/or F32 plants.
Tanks V-0121and V-0121: D001, D002, D006, D007, D008, and D029 wastes from the Kynar monomer plant.
Tank V-6103: D003, D007, D008, D029, D039, and D040 wastes from the Forane 134a plant.
Based on the following regulation: [401 KAR 34:190 Section 1]

V-0119 and V-0119A

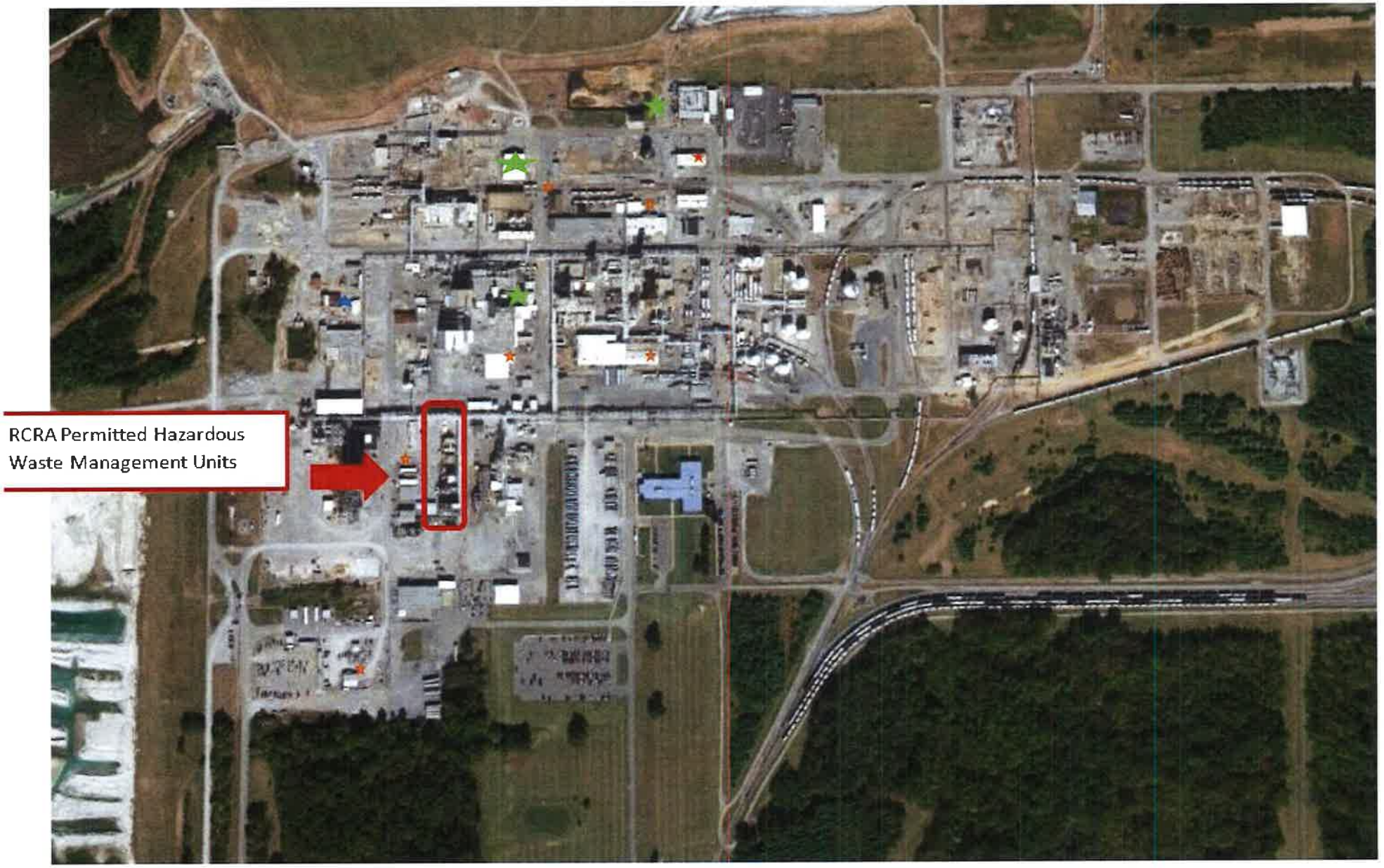
The hazardous waste generated during the manufacture of Forane® 141b and 142b are the reaction by-products left in the process reactor. Referred to internally as "tars", the Forane® 142b reactor bottoms are sent to hazardous waste storage tanks V-0119 and/or V-0119A. The hazardous waste generated during the manufacture of Forane® 32 is a result of reaction by-products accumulated in the system. These heavies are transferred to hazardous waste storage tanks V-0119 or V-0119A. These wastes carry hazardous waste codes for Corrosivity, Reactivity, Metals including Arsenic, Cadmium, Chromium, and Lead, 1,2-Dichloroethane, and 1,1-Dichloroethylene. Human exposure to this waste would require special treatment by plant medical personnel or plant medical experts.

V0121 and V-0229

The Monomer production process produces a halogenated organic heavies stream referred to as the Kynar® monomer recycle column bottoms. This stream, referred to internally as "recycle column bottoms", is sent to hazardous waste storage tanks V-0121 and/or V-0229. These wastes carry hazardous waste codes for Ignitibility, Corrosivity, Metals including Cadmium, Chromium, and Lead, and 1,1-Dichloroethylene. Human exposure to this waste would require special treatment by plant medical personnel or plant medical experts.

V6103

The hazardous waste generated during the manufacture of Forane® 134a is a result of reaction by-products accumulated in the system. These heavies, referred to as the Forane® 134a organics, are sent to hazardous waste storage tank V-6103. These wastes carry hazardous waste codes for Reactivity, Metals including Chromium, and Lead, 1,1-Dichloroethylene, Tetrachloroethylene, and Trichloroethylene. Human exposure to this waste would require special treatment by plant medical personnel or plant medical experts.

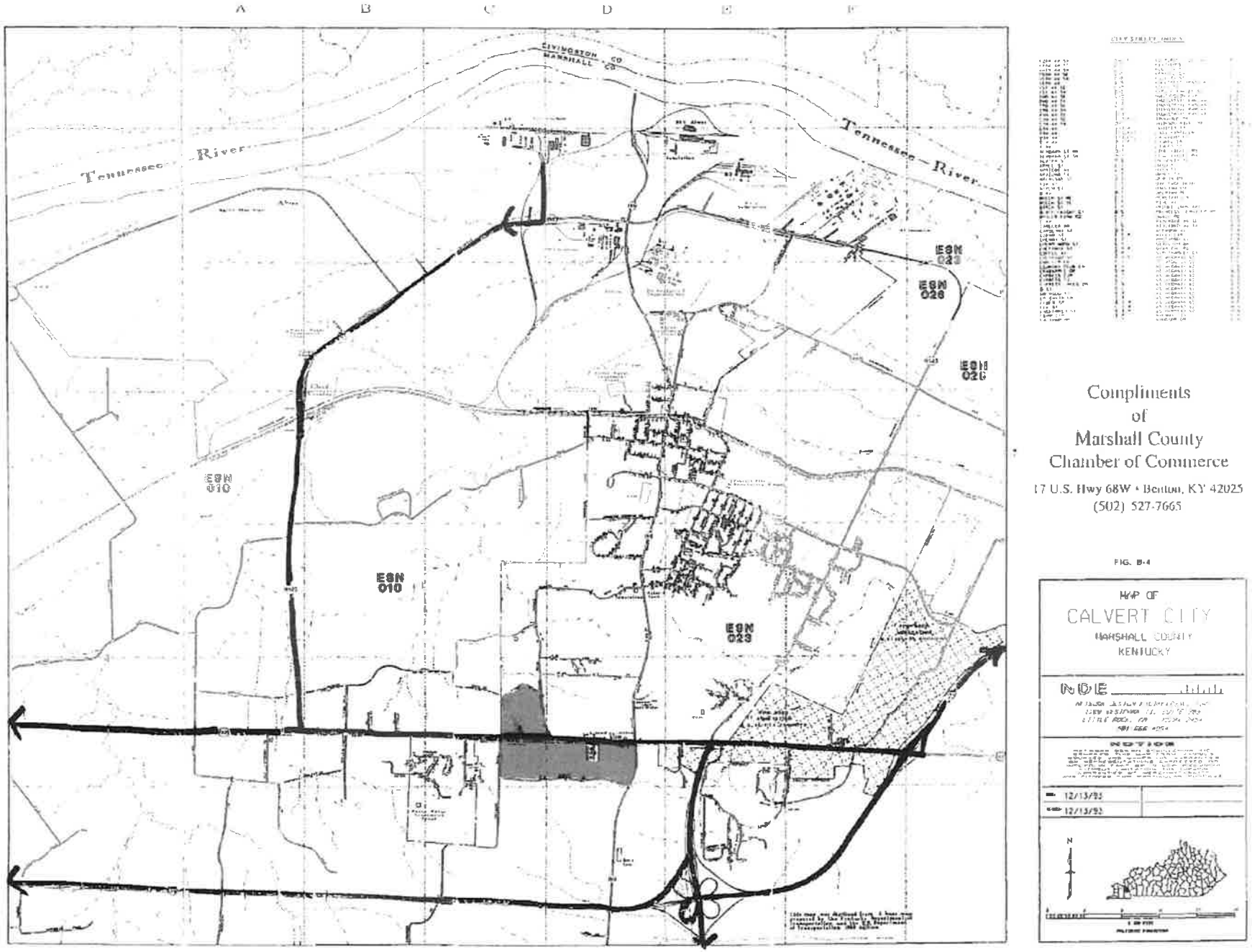


Hazardous Waste Satellite Accumulation Areas – Routine

Aerosol Cans (Orange) and MEK/Paint Waste (Blue)

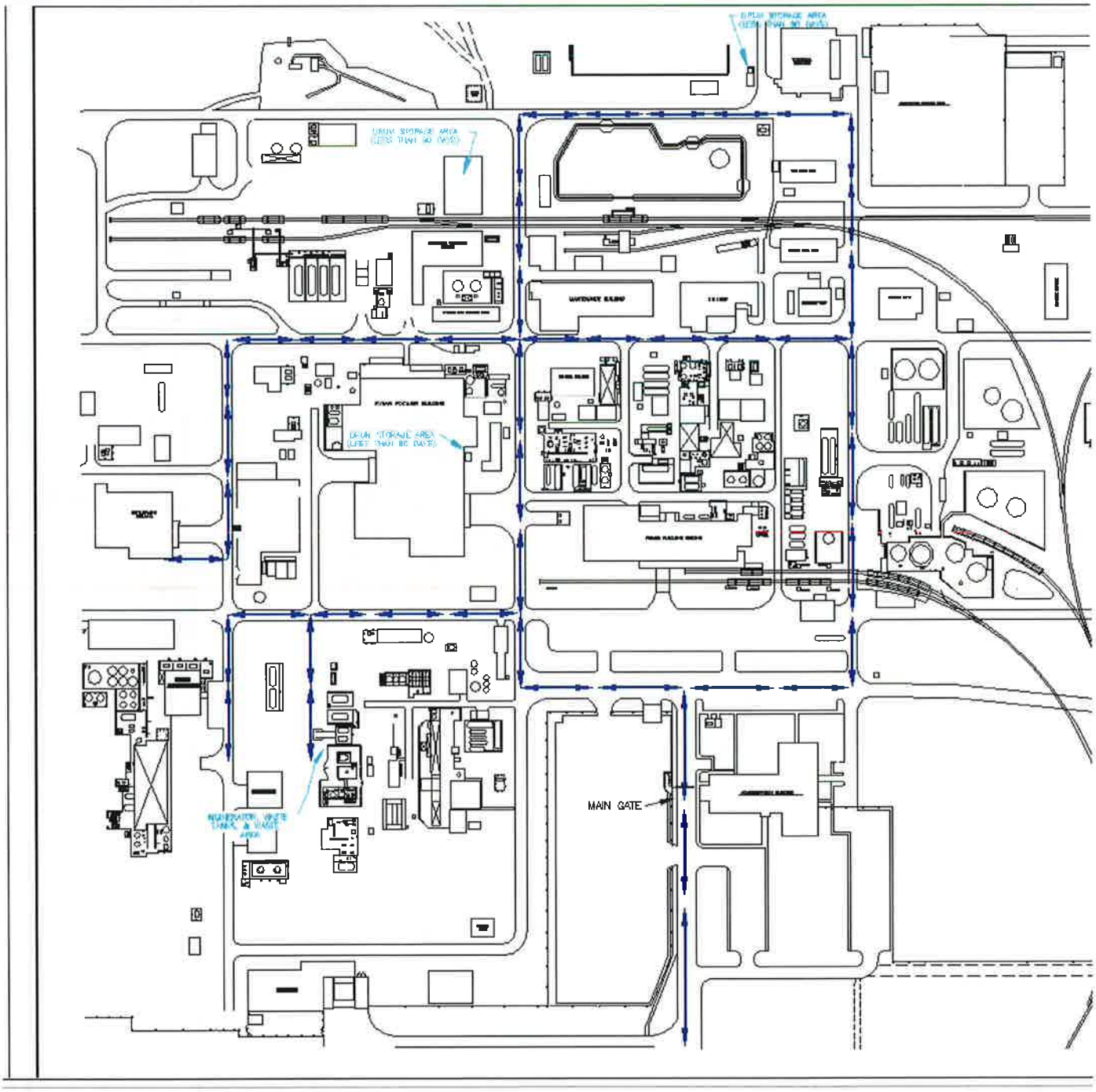
90 DAY STORAGE - GREEN

External Hazardous Waste Traffic Pattern

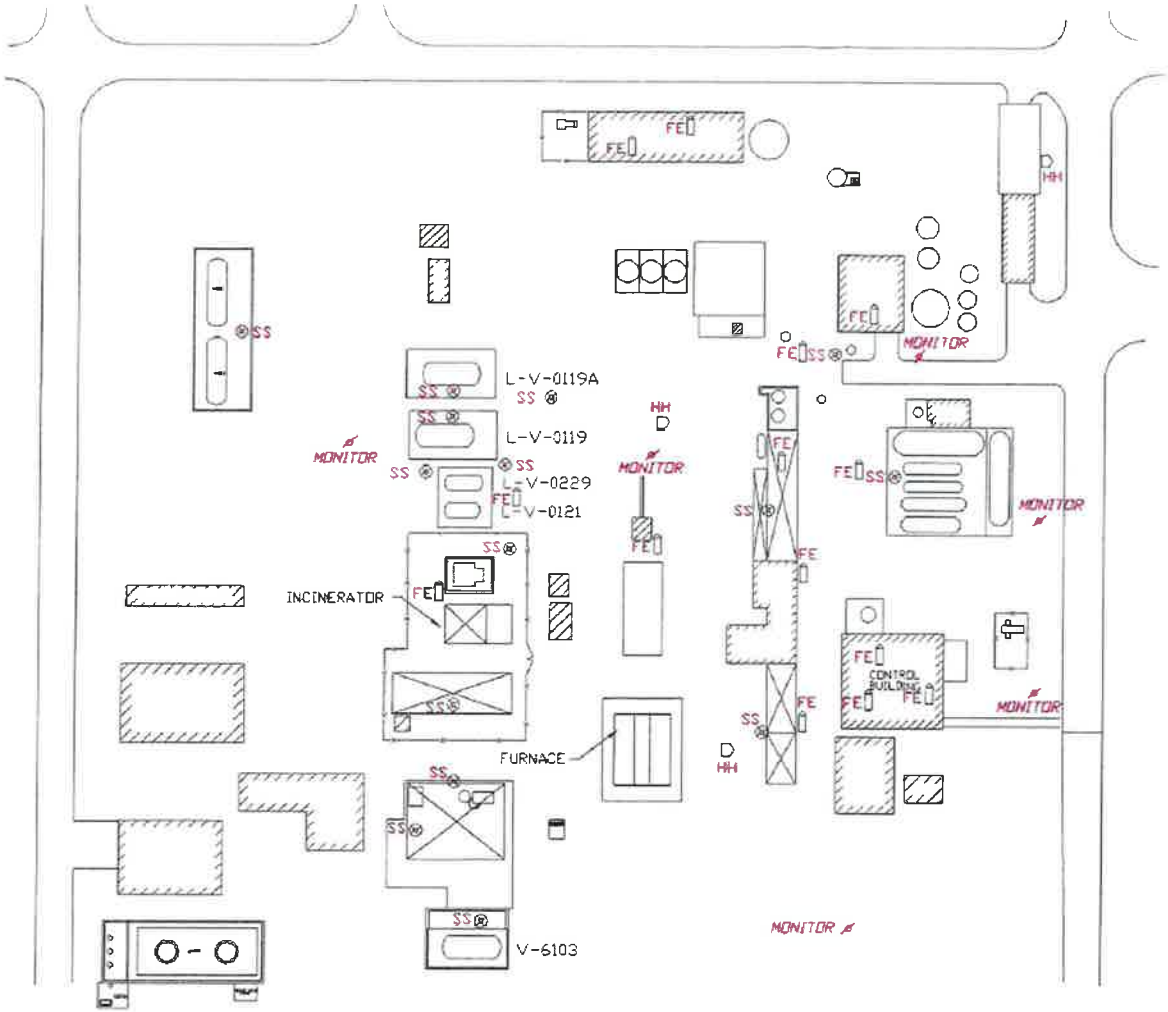


Internal Plant Hazardous Waste Traffic Pattern

Current Drawing = K-11171-X



Incinerator Area Safety Equipment



Fire Systems in the Incinerator and Hazardous Waste Tank Area are supplied by the plant's high pressure fire water system. Approximate flow rates are listed below:

Fixed Fire Protection Monitors – 750 GPM
Hydrant with 2 ½" Hose – 275 GPM

LEGEND

- D HOSE HOUSE & HYDRANT
- FIRE MONITOR NOZZLE
- SAFETY SHOWER
- FIRE EXTINGUISHER

SAFETY EQUIPMENT INCINERATOR AREA			
SCALE	1" = 60'	DATE	11-13-96
DRAWN	JAM/ACAD	APP'D	
NO.	FIGURE G-2		

Incident Commander and PIO Listing

** SEE PAGE 9 OF THIS GUIDE FOR INCIDENT COMMANDER LISTING **

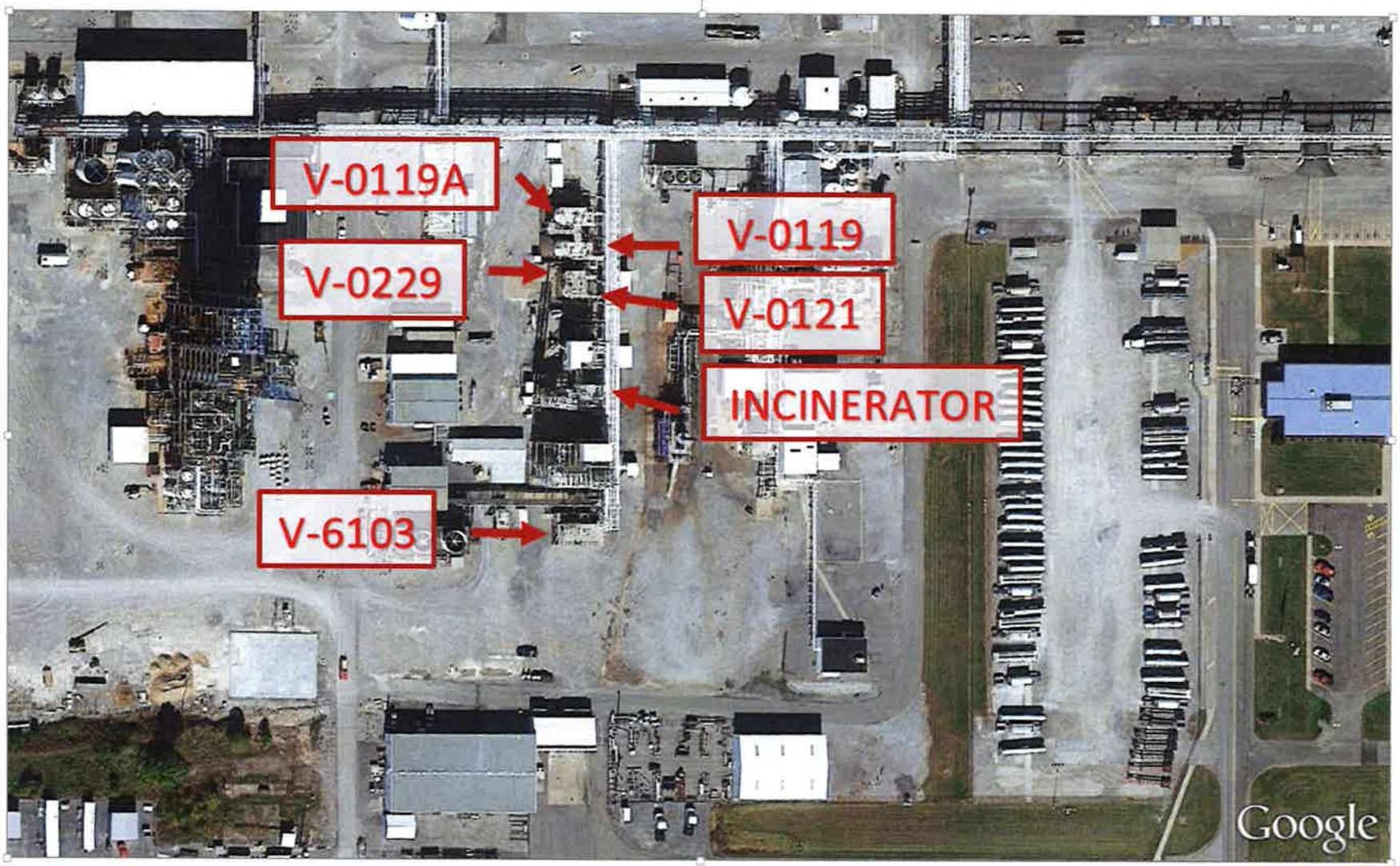
Table 3

PUBLIC INFORMATION OFFICERS

NAME	HOME PHONE NUMBER	CELL PHONE NO.	RESPONSE TIME
* Bobby Smith	(270) 395-8275	(270) 703-0159	15 minutes
Jeff Hall	(270) 527-1031	(270) 703-4222	15 minutes

* Individual designated as primary PIO

Incinerator Area Equipment Location



Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081	Page: 1 of 9	Revision No.: 20	Issue/revision/review date: 20 September 2019

Only the electronic version on the Calvert City Plant Directory intranet is valid.

0	Unknown	First issue of combined ICRP.
Revision No.	Date	Revision Description (last three)
18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review; updated Incident Commander contact information
20	20 September 2019	Annual Review, minor clarifications

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Jay Fulton Manager of Safety and Health	Greg Watson Environmental Manager

Purpose and Scope of Plan Coverage

This Integrated Contingency and Response Plan (ICRP) has been prepared to comply with the requirements of Federal and Kentucky regulations, including RCRA Contingency Plan requirements, and Corporate policies and procedures concerning contingency, preparedness and emergency action plans, and internal and external incident reporting. Those Federal and Kentucky regulations specifically covered by this ICRP are listed in *Index of Legal and Other Requirements*, AIMS-ADM-0067. Corporate policies and procedures are listed on ANNIE, the corporate intranet site. No known local statute or regulation exists concerning these issues. This Plan is applicable to the Arkema Inc. Calvert City, Kentucky facility.

This Plan does not address the facility security plan for the various threat levels established by the Department of Homeland Security, and the United States Coast Guard. The facility security plan is classified Security Sensitive Information and is not available to the public.

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AIMS-ADM-0081-6 Plant Maps and Drawings

AIMS-ADM-0081-7 Emergency Preparedness and Prevention Plan

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AIMS-ADM-0081-16 Acronyms and Definitions

Current Revision Date

Revision: 19
Last modified: December 2018

General Facility Identification Information

Facility Name

Arkema Inc.
Calvert City, Kentucky Plant

Parent Company

Arkema Delaware Inc.

Owner

Arkema Inc.
900 First Ave.
King of Prussia, PA 19406
(610) 205-7000

Physical Address of the Facility

4444 Industrial Parkway
Calvert City, KY 42029-0187
Marshall County

Latitude: North 37° 03′ 24″
Longitude: West 88° 22′ 00″

Mailing Address of the Facility

P. O. Box 187
Calvert City, KY 42029-0187

Other Identifying Information

SIC codes: 2819, 2821, and 2869
NAICS codes: 325188, 325211, and 32512
Water permit No.: KY0003603
Hazardous waste permit No.: KYD 006 370 159

Key Contacts and Phone Numbers for Plan Development and Maintenance

* Monty Shell (270) 395-6342
  Jeremy Rowe (270) 395-6522
* Individual designated as Emergency Response Coordinator, responsible for the development and administration of this plan.

Key Contacts, Titles and Phone Numbers for the Facility

Jeff Hall	Plant Manager	(270) 395-6364
Carl Stewart	Primary Incident Commander	(270) 395-6585

Facility Phone Number

(270) 395-7121

Facility Fax Number

(270) 395-4725

Discovery

The initial responder is responsible for the prompt reporting of an incident to his or her immediate supervisor or the shift superintendent, as appropriate. The immediate supervisor or shift superintendent is responsible for confirming the seriousness of the incident, notifying the appropriate Calvert City Health, Environmental and Safety (HES) Department personnel, controlling ongoing or secondary effects of the incident and activating the plant's response management system and the emergency response team, as appropriate.

Initial Response and Sustained Actions

After being notified of an incident, the plant's response management system will be activated, if necessary, as outlined in Annex 2. The system includes the following elements:

1. Internal and external notifications (see Annexes 10 and 11).
2. Preliminary assessment of the situation, including identification of incident type, hazard involved, magnitude of the problem, and resources threatened.
3. Head count and plant evacuation, if needed (see Annex 5).
4. Establishment of objectives and priorities for response to the specific incident, including: immediate goals/tactical planning (e.g., protection of workers and public as priorities).
5. Mitigating actions (e.g., discharge/release controls, containment, and recovery, as appropriate).
6. Identification of resources required for response.
7. Implementation of tactical plan.
8. Mobilization of resources.

Termination and Follow-up Actions

The Incident Commander will coordinate with the Safety and Environmental Officers to determine if any additional actions are necessary prior to officially terminating the incident. Investigation efforts, if not already initiated during the response activities, will begin immediately after the response activities are terminated. Requirements for incident documentation and investigation are outlined in Annex 11. Furthermore, the plant has specific requirements for response critique, and plan review and modification, if required after each activation of the plant's response management system (see AIMS-ADM-0081-2).
Termination Requirements

Immediate

- Sound the all-clear signal via the plant alarm system, radio and 555.
- Notify neighboring facilities via CIMAP radio.
- Direct each area manager to access if any damage or concerns are present in their area.
- Establish a de-brief time and location.

Essential

- Collect any information which require immediate attention for reporting at the de-brief.
  - Pictures
  - PI data
  - Eye witness reports
- Gather any personnel injury information for reporting as required, family notification should be handled only by the Human Resources Department.
- Notify state and federal agencies as required, if not already done.
- Update notifications to state and federal agencies if needed
- De-brief LEPC/CIMAP personnel
- De-brief plant personnel

Follow-Up Actions

- Follow-up briefings will occur as necessary until plant operations return to normal.
- Announcements to plant personnel to keep everyone up-to-date.
- Notify Corporate Insurance Department if needed

- Finish any and all decontamination of equipment, and the environment.
- Restock all expended response supplies.

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-1	Page: 1 of 7	Revision No.: 20	Issue/revision/review date: 10 December 2019

Only the electronic version on the Calvert City Plant Directory intranet is valid.

0		
Revision No.	Date	Revision Description (last three)
18	6 November 2017	Updated provisions for containment on temporary chemical storage containers.
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 1

General Guidance for Chemical Spill Response and Prevention

Proper spill response is essential for the protection of human health, the environment, and property at this facility. Given the various types of chemicals that are handled, personnel may have difficulty responding to the release of a specific chemical. Appropriate personal protective equipment (PPE) must be worn during a response (see Annex 21 for a detailed description of appropriate PPE), and any debris or residue from a response must be disposed of properly. The following is a guide of general response information.

Chemical and Oil Spill Kits

The Calvert City plant has several spill kits throughout the facility equipped with different forms of absorbent materials. The locations of these spill kits are given in Annex 14, Table 5. Some kits are equipped with absorbent materials that are suitable for most chemicals that are handled in the facility. A list of these chemicals is included in the chemical spill kit and are labeled as chemical spill kits. The majority of the kits are equipped with absorbent materials that are suitable for oils, but not for chemicals. These oil spill kits do not contain a chemical list and are labeled as oil spill kits.

Organics

Appropriate PPE for a minor organic release may include neoprene boots and gloves, a full-face respirator with an organic vapor cartridge or a self contained breathing apparatus (SCBA), and a hard hat. Personnel not responding to the release should evacuate the immediate area. Minor organic releases can be absorbed and containerized for latter proper disposal by the Environmental Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Acids

Appropriate PPE for a minor acid release may include neoprene boots and gloves; a full-face respirator with an acid gas cartridge or a self contained breathing apparatus (SCBA), and a hard hat. Personnel not responding to the release should evacuate the immediate area. Minor acid releases can be washed into the industrial sewer system where the elementary wastewater neutralization systems will neutralize the acid prior to discharge. Larger acid releases should be neutralized with soda ash prior to being washed into the industrial sewer system. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Caustics

Appropriate PPE for a minor caustic release may include neoprene boots and gloves, a full-face respirator with an acid gas cartridge or an SCBA, and a hard hat. Personnel not responding to the release should evacuate the immediate area. Minor liquid caustic releases can be washed into the industrial sewer system where the elementary wastewater neutralization systems will neutralize the caustic prior the discharge. Larger liquid caustic releases should be neutralized prior to being washed into the industrial sewer system. Releases of solid caustics should be cleaned up and containerized for latter proper disposal by the Environmental Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Oxidizers

Appropriate PPE for a minor oxidizer release may include neoprene boots and gloves, SCBA, and a hard hat. Personnel not responding to the release should evacuate the immediate area. If the oxidizer is a liquid and is not water reactive, dilute the oxidizer to approximately a 5% concentration and absorb the liquid with absorbent. The absorbent should then be containerized and labeled for proper disposal by the Environmental Department. Releases of solid oxidizers should be cleaned up and containerized for latter proper disposal by the Environmental Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Compressed Gases

Appropriate PPE for an uncontrolled compressed gas release may include neoprene boots and gloves, other protective clothing, SCBA, and a hard hat. Open doors and windows to provide ventilation. Personnel not responding to the release should evacuate the immediate area, and depending on the severity of the release evacuation of the building may be required. Check the area for the oxygen concentration and the lower explosive limit (LEL) prior to taking further action. If the concentration is 10% of the LEL, or greater, evacuate the building. If the release cannot be controlled, and it is a cylinder that is leaking, move cylinders out of the building if it can be safely accomplished. Otherwise, allow the cylinder to completely vent in-place. If the release is from a piping system, shutdown the affected system in a safe manner.

Flammable Materials

Appropriate PPE for a flammable material release may include other protective clothing, SCBA, gloves, and a hard hat. Open doors and windows to provide ventilation, and eliminate potential sources of ignition. Personnel not responding to the release should evacuate the immediate area, and depending on the severity of the release evacuation of the building may be required. Check the area for the oxygen concentration and the LEL prior to taking further action. If the concentration is 10% of the LEL, or greater, evacuate the building. The responder must have a fire extinguisher of the proper classification. Liquid releases should be absorbed with absorbent material, and solids should be cleaned up. All materials should be containerized for latter proper disposal by the Environmental Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Low-Hazard Materials

Appropriate PPE for a minor low-hazard material release may include safety glasses, safety toe shoes, gloves, and a hard hat. Liquid releases should be absorbed with absorbent material, and solids should be cleaned up. All materials should be containerized for latter proper disposal by the Environmental Department. Remediation of the site should be performed using normal and appropriate procedures as approved by the Environmental Department.

Confined Space Entry/Oxygen Depleted Atmosphere

Confined spaces and enclosed buildings that were not designed for normal occupancy represent special hazards that are covered by specific plant procedures and training to assure the safety of individuals entering these spaces.

Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

The liquid waste stored in tanks L-V-0121 and L-V-0229 may be classified as flammable. Safeguards taken to prevent ignition of this waste include:

- The storage tanks are designed to American Society of Mechanical Engineers (ASME) code and the piping used is welded with a minimum number of flanged connections.
- Pressure relief devices are designed to exhaust at a safe height and distance.
- All process equipment is operated under pressure. This prevents air from entering the waste system and eliminates the risk of ignition of the waste stream within the equipment.
- The distance between the incinerator and L-V-0121 and L-V-0229 is greater than 50 feet as recommended by National Fire Protection Association (NFPA).
- Class 1, Group D, Division 2 electrical code has been followed.
- Proper signs, visible from a minimum distance of 25 feet from all accesses, are posted warning of the ignitable hazard and prohibiting sources of ignition.
- Smoking is limited to posted "Smoking Areas."
- Safety procedures exist that require welding, cutting, and other hot work to be conducted only after proper testing for a non-explosive condition.
- Proper fire fighting equipment is located in the area. Properly trained personnel are available to respond to a fire emergency.
- The incinerator is equipped with controls that prevent flame start-up without first establishing a pilot flame or unit purge.

The waste contained in tanks L-V-0119, L-V-0119A, and L-V-6103 are considered reactive due to the free hydrogen fluoride content. It is important that this waste is prevented from contacting water or leaking into the air. These precautions are achieved by utilizing the following:

- The storage tanks are designed and constructed according to ASME code and with an adequate corrosion allowance.
- The venting of these tanks is reduced by their pressure vessel construction (L-V-0119 and L-V-0119A: 300 psig design pressure, 280 psig control pressure and 70 to 130 psig

normal operating pressure; L-V-6103: 150 psig design pressure, 150 psig control pressure and 20 psig normal operating pressure).
- Procedures and controls are in place to prevent overfilling of these tanks.
- Transfer piping is constructed of welded piping with a minimum number of flanged connections.

Flammable and reactive wastes are also stored in containers for less than 90 days. A description of precautions taken to prevent ignition of these wastes follows:
- Proper signs, visible from a minimum distance of 25 feet, are posted warning of the presence of flammable materials and prohibiting sources of ignition.
- Smoking is limited to posted "Smoking Areas."
- Safety procedures exist that require welding, cutting, and other hot work to be conducted only after proper testing for a non-explosive condition.
- Fire fighting equipment is located nearby. Properly trained personnel are available to respond to a fire emergency.
- All containerized ignitable waste is stored in excess of 50 feet from the property boundary.
- Minimum aisle space between rows of containers is maintained at all times.

General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

Incompatible wastes are not mixed with the liquid waste in tanks L-V-0119, L-V-0119A, L-V-0121, L-V-0229, or L-V-6103. The following equipment and design provisions serve to prevent reactions that generate extreme heat or pressure, fire, explosion or violent reactions; damage to the structural integrity; or threaten human health or the environment.

- All wastes are transferred by pipeline to the incinerator.
- All the hazardous waste storage tanks are equipped with secondary containment.
- Other areas vulnerable to spillage are curbed and drained to treatment.
- In the event of an instrument air failure, all valves will fail in the safe position.

Management of Ignitable or Reactive Wastes

The Arkema Calvert City facility stores ignitable or reactive wastes in containers for less than 90 days. These containers are stored in areas that are at least 50 feet from the facility property boundary.

Ignitable wastes are also stored in pressure vessels dedicated to this service. The five hazardous waste storage tanks at the facility are located approximately 2,000 feet from the property boundary. This distance exceeds the minimum distance requirements specified by NFPA Code 30. Liquid and vapor from these tanks are only discharged to the hazardous waste incinerator. These tanks are equipped with secondary containment capable of holding the entire contents of the tank.

Waste piles, surface impoundments, landfills, and land treatment units are not used at the Arkema Calvert City facility for the treatment or storage of hazardous wastes. Therefore, ignitable or reactive waste issues are not applicable to this facility.

Management of Incompatible Wastes

Incompatible wastes and materials are not stored in the same container or tank at the Arkema Calvert City facility. If a container or tank is to be used for the storage of a waste or material that is incompatible with the previous contents of the container, the container or tank will be washed to remove any hazard that might have been posed by incompatibility.

Waste piles, surface impoundments, landfills, and land treatment units are not used at the Arkema Calvert City facility for the treatment or storage of hazardous wastes. Therefore, incompatible wastes issues are not applicable to this facility.

Container Spills and Leakage

Containers that have questionable structural integrity will be overpacked or transferred to another container, and any release that may have occurred will be cleaned up. In certain situations it may be more expedient to remove other containers from the area before repairing and/or overpacking the questionable container.

Temporary Bulk Liquid Storage Containment

If a need arises for any bulk chemical to be stored in an area for a routine or non-routine activity, containment must be provided. For drums or totes of liquid, a containment pallet or containment shed may be used. For frac tanks or vacuum boxes, a pre-use water test shall be performed to check for any potential leaks and a temporary berm utilized while in service. Contact the Environmental Department with any questions regarding this policy.

Tank/Railcar/Trailer Spills and Leakage

If there is a release from a hazardous waste tank system, a chemical storage tank system, a railcar, or a trailer an immediate inspection will be conducted to determine the source of the release. If the release can be readily traced to ancillary equipment (i.e., pumps, piping, etc.) then only the affected ancillary equipment will be taken out of service. Isolation of the tank system, railcar, trailer or ancillary equipment will be accomplished by closing block valves. If necessary, the material flow will be diverted.

After the chemical storage tank, railcar, trailer, or the affected ancillary equipment has been isolated, the equipment will be cleared and purged to reduce the potential of further release to the environment. Material will be cleared into another storage tank, as available storage capacity permits, or into a container. Once the equipment is empty, it will be purged to clear the equipment in preparation for inspection and repair.

Hazardous waste tanks or the affected ancillary equipment will be isolated, and the equipment cleared and purged to reduce the potential of further release to the environment. Waste will be cleared into a permitted hazardous waste storage tank, as available storage capacity permits, or into a container. Once the equipment is empty, it will be purged to clear the equipment in preparation for inspection and repair.

All released material within the secondary containment area will be removed within 24 hours or in as timely a manner as possible to prevent harm to human health or the environment. Any released material on the ground will be removed and containerized. All reasonable measures will be taken to minimize or prevent migration of the release to the environment.

Decontamination

All emergency response personnel and equipment shall be decontaminated using appropriate decontamination methods prior to exiting the contaminated area. Emergency equipment for decontamination of chemically contaminated personnel, such as safety showers and eye wash stations, is located throughout the facility. The safety shower is the primary "gross" decontamination unit used in this facility for personnel. Flags and lights throughout the structures in the plant indicate the location of this equipment. Equipment should go through a gross decontamination at the site and then be taken to the decontamination pad for decontamination. Proper containment of decontamination waters will be as directed by the Environmental Officer.

Any personnel who need to be transported by ambulance will be decontaminated and all clothing removed prior to being transported. Appropriate Tyvek or other suitable covering will be provided along with copies of MSDSs for the chemicals they were contaminated with.

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-2	Page: 1 of 7	Revision No.: 21	Issue/revision/review date: 10 December 2019

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0		
Revision No.	Date	Revision Description (last three)
19	2 Mar 2018	Changes – Financial Officer Addition
20	31 Dec 2018	Annual Review
21	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 2 Response Management System

This Annex contains a general description of the Arkema Calvert City plant's response management system and specific information necessary to guide or support the actions of each response management function during a response. Lists of individuals trained as Incident Commanders, Public Information Officers, and Head Count Officers are identified in Annex 20, tables 2 through 4, respectively.

General

The plant has adopted the National Incident Management System (NIMS) Incident Command System (ICS) and has established a preplanned command structure. The ICS includes personnel fulfilling a number of different roles. The number of people involved and the role of each person depend on the types and nature of emergencies that could occur at this plant. Preplanning, training and practice is required to ensure that each person knows his or her role within the ICS. Each person has been trained for his or her assigned role(s). **Following ICS guidelines, the important element is to anticipate and prepare for change.**

The Emergency Response Team (ERT) should gather at the emergency response building near the main gate. If that location is not safe, then the ERT should gather at the safety training room west of the logistics building.

Command Operation

The following positions are part of the organization of the Arkema Calvert City Plant:

- Incident Commander
- Operations Officer
- Public Information Officer
- Safety Officer
- Environmental Officer
- Logistics Officer
- Medical Officer
- Scribe
- Entry Team Leader
- Head Count Officer
- Security Officer
- Access Officer
- Financial Officer

The following is a description of the various positions and the duties that are required of that particular position. Activation of the ICS is dependent on the nature and severity of the given emergency. Several positions may be combined together depending on the severity of the emergency and other considerations.

Incident Commander

The Incident Commander (IC) coordinates all aspects of the emergency response (the term "Emergency Coordinator" is used in 401 KAR 34:040 to describe the same responsibility and function). This individual has the authority to commit the resources (personnel and monetary) of Arkema. During the off-shifts, weekends and holidays the Shift Superintendent will maintain control of the incident until a qualified IC arrives and relieves the Shift Superintendent. During normal working hours any available and qualified IC will perform the function of Incident Commander.
Table 2 of Annex 20 lists all individuals identified as the principle Incident Commanders, starting with the individual designated as the primary IC and descending in the order in which they would assume responsibility as IC. The arrival on site of a designated IC, who is listed above the individual performing the duties as IC, does not mean that the new individual will assume the duties of IC.

The IC will establish the command post, the chain of command, and arrange for coordination with off-site personnel as dictated by conditions. Communications will be maintained with all direct reports and the incident documented with the assistance of the Scribe. A basic concern in any emergency is the information flow. All actions, directions, and response concerns that may affect the overall response to any conditions are to be directed to the Incident Commander. This shall not be deviated from. All other reports shall be directed to the appropriate officer in charge.

Operations Officer

The Operations Officer reports directly to the Incident Commander. This individual is responsible for analyzing available resources, planning, and executing corrective actions. Communications will be maintained with the Incident Commander and with all direct reports.

Logistics Officer

The Logistics Officer reports directly to the Operations Officer. This individual is responsible for the acquisition, transportation and staging of all supplies, transportation, food, shelter, etc. Communications will be maintained with the Operations Officer and with the Entry Team Leader.

Entry Team Leader

The Entry Team Leader reports directly to the Operations Officer. This individual is responsible for coordinating the various entry and backup team tasks, assuring the teams have the necessary support, and coordinating with the Medical Officer. Communications will be maintained with the Operations Officer, the Medical Officer, the Logistics Officer, and the Safety Officer and with all entry and backup teams.

Entry and Backup Teams

The Entry and Backup Teams report directly to the Entry Team Leader. These teams are responsible for the safe execution of the entry plan(s) and providing backup for other entry

teams. Communications will be maintained with the Entry Team Leader and with the other team(s) they are operating with.

Decontamination Team

The Decontamination Team reports directly to the Entry Team Leader. This team is responsible for the safe execution of the decontamination plan. Communications will be maintained with the Entry Team Leader and with all entry and backup teams.

Public Information Officer

The Public Information Officer (PIO) reports directly to the Incident Commander. This individual is responsible for all communications with the media, public elected officials, and interested citizens. The Corporate Crisis Communications Manual will be used as guidance by the PIO for the release of information to the media. Communications will be maintained with the Incident Commander and with the Corporate Crisis Communications Department. Table 3 of Annex 20 lists all individuals qualified and identified as PIOs, starting with the individual designated as the primary PIO and descending in the order in which they would assume responsibility.

Information released to the public should:

- Be specific and accurate,
- Contain only confirmed facts,
- Stress the importance of and appreciation for the assistance and cooperation of local citizenry, police department, fire department, and public officials,
- State that the plant is committed to protecting health, safety, and the environment.

Public statements should include:

- The name and location of the unit/equipment involved,
- The nature and time of the incident and a brief account,
- Information that a complete investigation will be conducted,
- Names of appropriate local, state, and federal agencies that have been notified,
- Clean-up/remediation measures that have been taken or are planned,
- Types and quantities of equipment and manpower used to respond to the incident,
- Credit to specific individuals of the fire department, police department, sheriff's office, and other individuals and organizations as appropriate.

Public statements ***should not*** include:

- Speculation on the cause of the incident,
- Names of any fatalities or injured persons,
- Estimates of damages expressed in dollars,
- Estimates of time it will take to clean-up/remediate an incident,
- Estimates of clean-up/remediation/containment costs,
- Statements about the appropriateness of government response to the incident.

Communications released during emergency situations should be reviewed with the Plant Manager if feasible, but do not require approval. The individuals assigned to deliver the

communications have received adequate training to determine appropriate information to be released.

Safety Officer

The Safety Officer reports directly to the Incident Commander. This individual is responsible for the accounting for all personnel, conducting a hazard evaluation and preparing a brief on the hazardous material(s) involved, establishing the hot, warm and cold zones, and identifying appropriate personal protective equipment and decontamination requirements. Communications will be maintained with the Incident Commander, the Operations Officer, and the Entry Team Leader and with all direct reports.

Head Count Officer

The Head Count Officer reports directly to the Safety Officer. This individual is responsible for the accounting of all personnel during an emergency. Communications will be maintained with the Safety Officer and with head count personnel at the various assembly areas. Table 4 of Annex 20 lists all individuals qualified and identified as Head Count Officers during normal day shifts. Other individuals will be assigned by the Incident Commander to perform this function during other shifts.

Security Officer

The Security Officer reports directly to the Safety Officer. This individual is responsible for coordinating evacuation activities, and establishing liaison contact with local fire and police departments. Communications will be maintained with the Safety Officer, and local police and fire departments.

Access Officer

The Access Officer reports directly to the Safety Officer. This individual is responsible for maintaining control over all plant entrances. Communications will be maintained with the Safety Officer and with personnel at the various plant entrances.

Contract Security Guards

The contract security guards are trained personnel employed by Murray Guard, Inc. These individuals provide security access control and roving patrols for the Calvert City facility. Murray Guard employs on each shift an EMT, which provides support to the medical needs of the plant. They also support the Shift Superintendent in his duties. The Guards also provide support for chemical emergencies and the Incident Command structure of the plant, including plant notifications and accountability functions.

Environmental Officer

The Environmental Officer reports directly to the Incident Commander. This individual is responsible for notifying governmental agencies as required by regulations, and directs the

remediation, characterization, packaging and disposal of any waste generated. The Environmental Officer will arrange to have any release modeled, if necessary, using the SAFER system to predict areas that may be impacted. This information will be forwarded to the Incident Commander, and Safety Officer.

Medical Officer

The Medical Officer reports directly to the Incident Commander. This individual is responsible for medical triage, providing medical treatment, and contacting outside emergency medical response agencies for assistance. Communications will be maintained with the Incident Commander, the Safety Officer, and the Operations Officer.

Scribe

The Scribe reports directly to the Incident Commander. This individual is responsible for keeping a log of all response activities and the official records of the response. Communications will be maintained with the Incident Commander and all of his direct reports.

Financial Officer

The Financial Officer reports directly to the Incident Commander and coordinates the financial/monetary activities.

Outside Agency Agreements

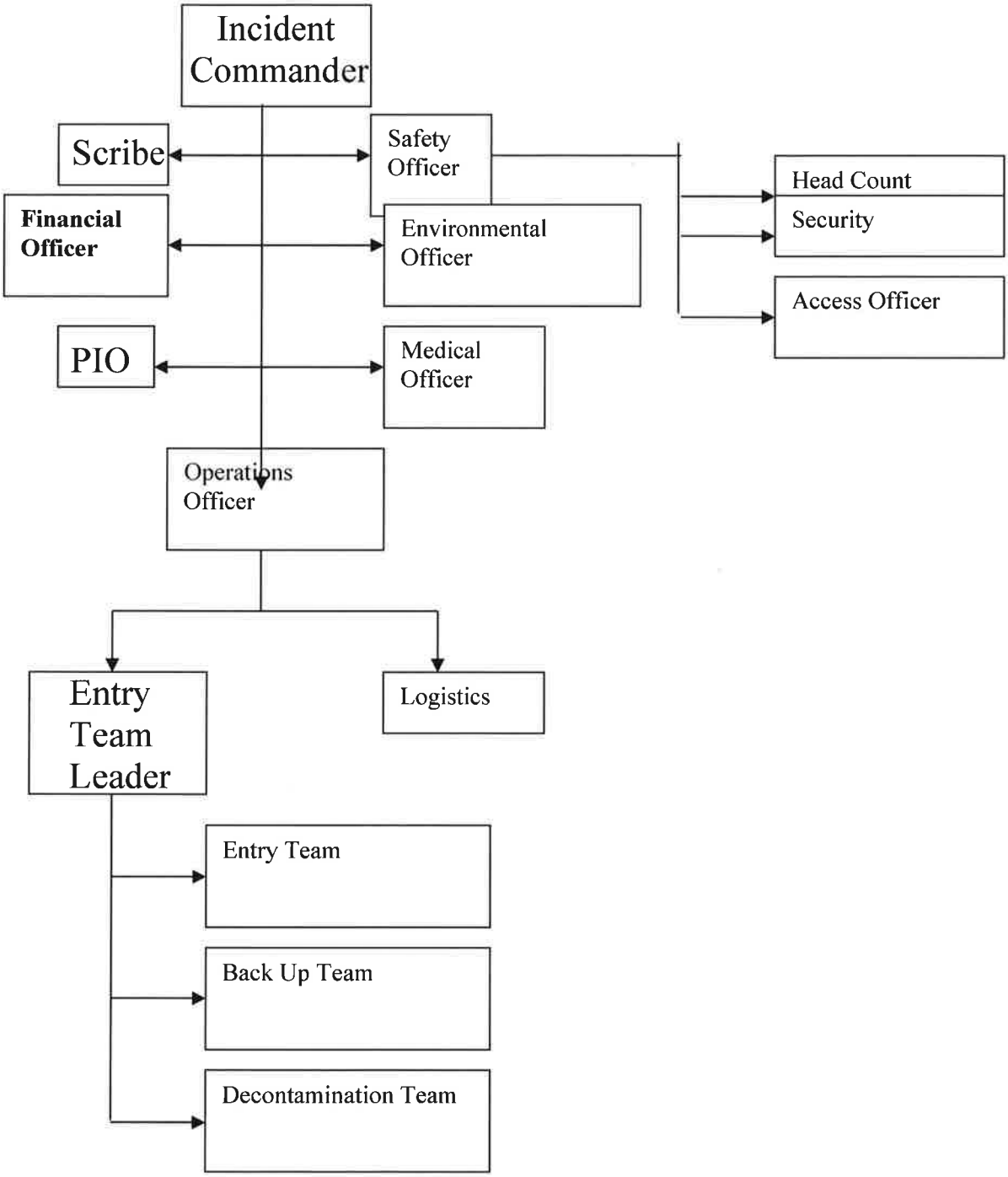
The Manager of Safety and Health or the Environmental Manager will be designated as the liaison during emergency situations. They are responsible for communicating with the following key groups:

- Arkema Corporate Management
- Government groups (OSHA, EPA, USCG, etc.)
- CIMAP – which includes local police and fire departments
- LEPC

Arkema is a member of the Calvert City Industrial Mutual Aid Program (CIMAP). This industry organization was organized to provide support for neighboring facilities in case of an emergency. The Incident Command System at this facility will interact with CIMAP, and the Marshall County Local Emergency Planning Commission (LEPC). Agreements for support in case of an emergency beyond Arkema's capabilities are in place with the Kentucky State Police, the Marshall County Sheriff, the Calvert City Police and Fire Departments, Marshall County OES, Livingston County OES, and the U. S. Coast Guard. Arrangements have been made with those outside medical facilities listed in Annex 8.

ARKEMA INC.
CALVERT CITY PLANT

INCIDENT COMMAND ORGANIZATION CHART



Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-3	Page: 1 of 4	Revision No.: 20	Issue/revision/review date: 10 December 2019

Only the electronic version on the Calvert City Plant Directory intranet is valid.

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Revision No.	Date	Revision Description (last three)
18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 3 General Tactical Response

The following table describes the basic actions to be performed by the various individuals who respond to a major incident.

Major Incident	First person on scene	Guard	Incident Commander	Operator	ERT Fire Brigade
Response	1. **NOTIFY FRONT GATE GUARD** using plant radio or 555 2. Provide the information on the location, No. of injuries, chemical released and amount, and an assessment of the scene.	1. **NOTIFY THE SHIFT SUPERINTENDENT.** 2. **CHECK WIND SPEED AND DIRECTION.** 3. **NOTIFY CIMAP (LEVEL I OR II).** **AS DIRECTED** 3. Maintain and monitor all communications with the Incident Commander. 4. Perform assignments in the Guard Emergency Guide.	1. Determine CIMAP notification (level I or II). 2. Perform the Incident Commanders Checklist.	1. Stop the leak. 2. Secure the process.	**CHECK IN WITH INCIDENT COMMANDER** 1. Perform perimeter monitoring if Environmental not present. 2. Perform the OPS/ERT Checklist.
Secure Area		**AS DIRECTED** 1. Turn on entrance signs and stop all traffic into plant. Mobile guards are available to assist in traffic control.	1. Instruct guards as needed.		1. Establish perimeter (hot, warm, and cold zones) 2. Establish radio communications on channel 5 (on-site, not repeated), or channel 3 (off-site).
Evacuation		**AS DIRECTED** 1. Announce head count or evacuation on radio channels 1, 2, 3, and 6, the voice system, and 555	1. Instruct guards as needed.		
Medical, rescue, and transportation		1. Direct ambulances to triage area.			
Incident Investigation and Debrief	1. Participate in debrief.	1. Participate in debrief.	1. Establish time and location for debrief.	1. Participate in debrief.	1. Participate in debrief.
Termination Activities		1. Sound the "All Clear". 2. Turn off the entrance signs and allow traffic into plant. 3. Notify CIMAP 4. Obtain car license plate numbers (if directed).	1. Perform termination activities contained in Section I of the ICRP.	1. Restore operations.	1. Prepare list of equipment and supplies expended.

Major Incident	**Plant Nurse/EMT At Dispensary**	**HES Department**	**EMT/First Aid at scene**	**Head Count**
Response	1. Perform patient assessments. 2. Oversee triage and transportation area. 3. Provide first aid. 4. Update Incident Commander, as needed.	1. Make notifications as needed (Including Livingston County). 2. Coordinate w/ LEPC 3. Perform perimeter monitoring. 4. Assure response is performed safely.	1. Provide first aid. 2. Decontaminate patients. 3. Transport to dispensary.	1. Verify KRONOS accountability of employees and contractors 2. Notify IC if anyone is unaccounted
Secure Area		1. Assist Incident Commander		
Evacuation				1. Set-up at off-site location (West Gate, East Gate, or Rolling Hills Shopping Center
Decontamination	1. Assure patients are decontaminated.			
Medical, rescue, and transportation	1. Prepare patients for transportation. 2. Provide MSDS w/ patients. 3. Monitor ambulance status.			
Logistical Replacement	1. Replace medical equipment and supplies expended.			
Incident Investigation and Debrief	1. Participate in debrief.	1. Participate in debrief. 2. Perform investigation.	1. Participate in debrief.	1. Participate in debrief.
Termination		1. Report to Corporate Insurance Department. 2. Report to Corporate HES		

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-4	Page: 1 of 26	Revision No.: 24	Issue/revision/review date: 20 September 2019

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Revision No.	Date	Revision Description (last three)
22	25 Feb 2019	Flood Scenario revisions – added more critical elevations and Essential and Ride Out Crew.
23	12 June 2019	Revised the Tornado and Severe Weather scenarios as a result of the North America Disaster Toolkit checklist.
24	20 September 2019	Added a Scenario for a Hazardous Waste Release/Leak

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 4 Area / Chemical Scenarios

Hydrogen Fluoride Scenario

Chemical — Hydrogen Fluoride **(HF)**

Assumptions — Failure (0.5" hole) in 3" unloading piping
Active safety systems work (DCS initiated)
Loader isolates release
Weather — Common conditions
Winds prevailing from the SW 6.7 mph
Temperature: 77° F
Tactical Response - Annex 3

Total Release — 4,000 pounds

Distance — 2.0 miles

Response
Notification via 555 or radio of release. Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

The in-plant emergency response team (ERT) will be notified and stand ready to respond to medical emergencies. A fog pattern spray will be used from hydrants adjacent to HF vapor cloud to help disperse and blanket the HF release. The unloading area will be decontaminated, examined, and an investigation will commence immediately. All functions will be returned to normal as soon as possible.

The REACTS and ER teams will stand ready to assist neighboring facilities if required. The REACTS team is a team composed of employees of Arkema trained exclusively for off-site transportation emergencies of chemicals from this facility. Emergency Response Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance (CIMAP) as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

What Is HF?
HF is a clear fuming liquid creating acrid, whitish gas. It boils at 67.1° F at normal atmospheric pressure. It is made from Calcium Fluoride (fluorspar) and Sulfuric Acid. HF finds predominate use in the chemical, petroleum, and refrigerant industries. It can be refrigerated or pressurized for this use.

What to Do in Case of Release
You can shelter-in-place and await further instructions via emergency broadcasting. You can keep upwind of the fume cloud to minimize exposures.

Plant (Individual) Response

Operators will shelter-in-place and monitor their operations. If directed to evacuate, operators will shut their processes down in accordance with their emergency procedures. PPE will be mandatory.

Chlorine Scenario

Chemical — Chlorine **(Cl_2)**

Assumptions — Failure (0.5" hole) in 1" transfer line to K-98
Active safety systems work (DCS initiated)
Operator isolates release
Weather — Common conditions
Winds prevailing from the SW 6.7 mph
Temperature: 77° F
Tactical Response - Annex 3

Total Release — 3,300 pounds

Distance — 1.2 miles

Response

Notification via 555 or radio of release. Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

In-plant ERT will be notified and stand ready to respond to medical emergencies. A fog pattern spray from hydrants adjacent to Cl_2 gas cloud to help disperse and blanket the Cl_2 release. The unloading area will be decontaminated, examined, and an investigation will commence immediately. All functions will be returned to normal as soon as possible.

The REACTS and ER teams will stand ready to assist neighboring facilities if required. The REACTS team is a team composed of employees of Arkema trained exclusively for off-site transportation emergencies of chemicals from this facility. Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

What Is Chlorine?

Chlorine is a greenish-yellow gas. It smells like household bleach at low concentrations, and may be strong and irritating at higher concentrations. Cl_2 is 2 ½ times heavier than air and will tend to settle near the ground and other low spots, especially in the absence of wind.

What to Do in Case of Release

You can shelter-in-place and await further instructions via emergency broadcasting. You can keep upwind of the gas cloud to minimize exposures.

Plant (Individual) Response

Operators will shelter-in-place and monitor their operations. If directed to evacuate, operators will shut their processes down in accordance with their emergency procedures. PPE will be mandatory.

Hazardous Waste Scenario

Chemical — Hazardous Waste

Assumptions — Failure of a hazardous waste line ancillary connection to containment
Active safety systems work (AWFCO)
Operator isolates release
Weather — Common conditions
Winds prevailing from the SW 6.7 mph
Temperature: 77° F
Tactical Response - Annex 3

Total Release — 5 pounds

Distance — Isolation of Containment Area

Response
Notification via 555 or radio of release. Notification of Environmental Department Representative, either within plant or on-call. Determination of release magnitude immediately and determine if RQ notification is required (NRC - 800-424-8802) within 15 minutes of release origin/discovery.

Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

Isolation of leaking component within containment system will be the immediate primary objective, followed by clean-up of leaking hazardous waste material in proper PPE, and containerization and packaging for proper characterization and disposal.

In-plant ERT will be notified and stand ready to respond to medical emergencies.

The REACTS and ER teams will stand ready to assist neighboring facilities if required. The REACTS team is a team composed of employees of Arkema trained exclusively for off-site transportation emergencies of chemicals from this facility. Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

What to Do in Case of Release
Shelter-in-place and await further instructions via emergency broadcasting.

Plant (Individual) Response
Operators will shelter-in-place and monitor their operations. If directed to evacuate, operators will shut their processes down in accordance with their emergency procedures. PPE will be mandatory.

Hydrochloric Acid Scenario

Chemical — Hydrochloric Acid **(HCl)**

Assumptions — Failure of 2" line
Active safety systems work (DCS initiated)
Operator isolates release
Weather — Common conditions
Winds prevailing from the SW 6.7 mph
Temperature: 77° F
Tactical Response - Annex 3

Total Release — 17,100 pounds

Distance — 0.6 miles

Response

Notification via 555 or radio of release. Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

In-plant ERT will be notified and stand ready to respond to medical emergencies. A fog pattern spray from hydrants adjacent to HCl vapor cloud to help disperse and blanket the HCl release. The loading area will be decontaminated, examined, and an investigation will commence immediately. All functions will be returned to normal as soon as possible.

The REACTS and ERT teams will stand ready to assist neighboring facilities if required. The REACTS team is a team composed of employees of Arkema trained exclusively for off-site transportation emergencies of chemicals from this facility. Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

What is HCl?

HCl is a water-clear liquid. It is made from salt and sulfuric acid or from chlorine and hydrogen.

What to Do in Case of Release

You can shelter-in-place and await further instructions via emergency broadcasting. You can keep upwind of the fume cloud to minimize exposures.

Plant (Individual) Response

Operators will shelter-in-place and monitor their operations. If directed to evacuate, operators will shut their processes down in accordance with their emergency procedures. PPE will be mandatory.

Vinylidene Fluoride Scenario

Chemical — Vinylidene Fluoride **(VF2)**

Assumptions — Failure of tube trailer walls
Active safety systems work (DCS initiated)
Operator isolates release
Weather — Common conditions
Winds prevailing from the SW 6.7 mph
Temperature: 77° F
Tactical Response - Annex 3

Total Release — 3,000 pounds

Distance — 0.1 miles (No direct impact offsite)

Response
Notification via 555 or radio of release. Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

In-plant ERT will be notified and stand ready to respond to medical emergencies. A fog pattern spray from hydrants adjacent to VF2 vapor cloud to help disperse and blanket the VF2 release. All external-sparking devices will be shutdown to minimize explosive conditions. The loading/unloading area will be cleaned, examined, and an investigation will commence immediately. All functions will be returned to normal as soon as possible.

The REACTS and ER teams will stand ready to assist neighboring facilities if required. The REACTS team is a team composed of employees of Arkema trained exclusively for off-site transportation emergencies of chemicals from this facility. Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

What is VF2?
Vinylidene Fluoride a whitish vapor cloud when released into the air. These vapors present fire and explosion hazards if not properly contained.

What to Do in Case of Release
You can shelter-in-place and await further instructions via emergency broadcasting. You can keep upwind of the fume cloud to minimize exposures.

Plant (Individual) Response
Operators will shelter-in-place and monitor their operations. If directed to evacuate, operators will shut their processes down in accordance with their emergency procedures. PPE will be mandatory.

Tornado Scenario

Severe Weather — Tornado

Assumptions
- Direct hit of plant
- Active safety systems work (DCS initiated)
- Operator isolates according to individual plant shutdown procedures
- Weather: Rainy, windy
  Winds shifting and unstable
- Temperature: 77°- 98°F

The purpose of the ICRP tornado scenario is to define terminology, define responsibilities in preparation for and response to a tornado, and to identify actions needed to reduce physical injury.

DEFINITIONS

Tornado means a violently rotating column of air that touches the ground. Tornados may be funnel shaped and move in a narrow path or in excess of 1 mile wide.

A *Tornado Watch* indicates that weather conditions exist which could form a tornado. Tornadoes are possible in the area included in the watch. Watches may last 2 to 6 hours.

A *Tornado Warning indicates* that one or more tornadoes have been officially sighted or indicated by weather radar. Tornado warnings should be treated with all seriousness a there is imminent danger to life and property. Warnings may last two (2) hours or less.

Tornado "season" is usually from March 1 to June 30, but a tornado can occur anytime of the year. Tornadoes are one of nature's most severe weather conditions that can cause loss of life and loss of property because of the force of wind. Wind velocities can reach >200 MPH in a short period of time.

RESPONSIBILITIES

The main gate Security Officer will monitor the National Weather Service (NWS) radio and the CIMAP radio if weather conditions appear to be favorable for a tornado, or if there is a known issued *tornado watch* for the area. The Officer may also monitor weather websites and request assistance for onsite supervision.

If a ***tornado warning*** is issued by the NWS:

A. The Security Officer will notify a site management representative or the Shift Superintendent.

B. The Officer will observe the weather conditions, monitor the (NWS) radio, the CIMAP radio, and weather websites as practicable.

C. If a tornado is spotted from the plant property or reliable information indicates a tornado is in the immediate area of the plant, the Security Officer will sound the plant alarm and relay the warning via the plant Public Address system and / or repeated radio channels.

D. All personnel receiving the announced warning:
   1. Stop all work in the plant, including any permitted work. All external sparking devices, confined space entries, and Hot Work maintenance will cease immediately.
   2. Evacuate all process structures.
   3. Shutdown all transfer operations. *NOTE: LIFE SAFETY IS PRIORITY; SECURE PROCESSES ONLY IF TIME SAFELY ALLOWS*
   4. Seek shelter at the interior ground level of a control room or stairwell, Administration building, Engineering building, or bricked Maintenance offices. Move to interior of the building and stay away from glass windows. The site shall designate a Tornado shelter(s) that are capable of withstanding expected Tornado winds (EF-1, EF-2, EF-3) for the specified area. The ability to sustain under these tornadic conditions are to be verified and documented.
   5. If caught outdoors, attempt to reach a ditch and lie prone with your arms covering your head.
   6. In-plant ERT and EMRs will be released from their individual duty assignments and stand ready to respond to medical emergencies and to assist the plant and neighboring facilities and the community as practicable.
   7. Site Management to contact Arkema Corporate Senior Management if a tornado is imminent (if safe to do so), or as soon as practicable following a tornado event.
   8. Remain in the shelter areas until the all-clear has been sounded on the PA system and / or plant radio.

After the storm passes, the site supervision is to verify headcount and coordinate any needed assistance.

Decisions to shut down selected processes pre or post-tornado will be made by plant management on a case by case basis given warning lead time or the actual impact of the tornado. If decided to shut down, plant emergency shutdown procedures are to be followed. Use of advanced PPE is mandatory until outside plant conditions can be verified safe. Damage is to be assessed and conditions reported to the plant Incident Command personnel.

Following a tornado event site management will contact the Corporate Crisis Team, Corporate Communications and Business Units (Business Continuity) to provide updates on the status of plant employees, physical / asset damages and any special needs or services that will be required. Further notifications will be made per Annex 10 and the plant Emergency Communication Plan will be implemented.

Earthquake Scenario

Normal Conditions — Earthquake greater than 4.0

Assumptions — Directly impacting plants
Active safety systems work (DCS initiated)
Operator isolates according to individual plant shutdown procedures

Response

Notification of a release via 555 on a plant telephone or communication on a plant radio. Guard sounds plant alarm system with live voice instructions to notify entire plant. Buildings downwind will either shelter in place or evacuate. Notifications will be made as per Annex 10. The plant Emergency Communication Plan will be implemented.

In the event of a significant seismic incident with simultaneous releases, prioritization will be given as follows:

1. Releases that have potential for off-site impact to human health.
2. Releases that have potential for on-site impact to safety, health, or the environment.

The Incident Commander will assign the prioritization in responding to the releases. The existing process area shutdown procedures will be used to stop and/or control the releases. Following a significant seismic event, a Tier III Start Up permit will be used before resuming operations.

In-plant ERT will be notified and stand ready to respond to medical emergencies. All external sparking devices, confined space entries, and Hot Work maintenance will cease immediately. All functions will be returned to normal as soon as possible.

The REACTS and ER teams will stand ready to assist neighboring facilities if required. Team members shall be available for response from their individual duty assignments to respond to plant or emergency community assistance as needed. Every member has been identified to Corporate Logistics personnel for inclusion into the Arkema Emergency Response Call List.

Plant (Individual) Response

Operators will shut down their processes (in accordance with their individual plant emergency shutdown procedures) to access damage and report conditions to plant Incident Command Personnel. Use of PPE is mandatory until outside plant conditions can be verified safe. All ERT and REACTS members on-site will report via radio, phone, or LAN their availability and standby for responses (if necessary).

Flood Scenario

Normal Conditions — Flood waters encroaching upon the plant.

Assumptions — Directly impacting property.

Response

This Flood Emergency Response Plan (FERP) will be activated and warning notifications sent by the Plant Manager or his/her designee(s). *The actions to be taken at flood water levels are guidelines and can be modified to begin or end sooner or later based upon extended weather and precipitation forecasts, projected flood water levels, and site conditions.* The plant emergency response team will be on standby to address any medical emergencies. Plant Management will seek advice from Senior Management to determine the business continuity plan. The plant will rely on the US Army Corp of Engineers' emergency contact system for flood warnings (plant contacts are established in the system).

Critical flood water elevations are assumed to be KY Dam tail water minus 1', or actual level measured at the plant. Projected critical flood water elevations will be based on gauge forecast at Paducah plus 286.26', and adjusted for difference between Paducah gauge and KY Dam tail water.

~343' – maximum elevation for normal transportation.
~344' – access to the plant property will likely be limited due to road closures.
~348' – flood waters encroach upon the plant proper including process areas.

Several plant departments will have the following list of items to be followed as the flood waters rise and return to normal.

Utilities Department

Utilities Supervision is responsible for the contingent operation or shutdown of the plant utilities.

River Level Rising

- Regularly observe the current and forecasted river level.
  - The Arkema plant river level is historically 1 foot below the TVA Tailwater level at Kentucky Dam. This level is updated hourly on the TVA website. *(https://www.tva.com/Environment/Lake-Levels/Kentucky)*
- When the river level forecast is for 324, then:
  - All pH probes, flow meters, and control valves at Waste Water Diversion need to be calibrated.
  - The flow meter for the Waste Water Diversion discharge needs to be set-up, inspected, and the correct programming verified.

  - The flow meter for the HF Trench needs to be set-up, inspected, calibrated, and correct programming verified.
  - Ensure sources are secured for Lime and Caustic for Neutralization.
- When the river level reaches 324 then the plant waste water needs to be diverted from West Plant Sewer to Waste Water Diversion.
  - Verify all treatment valving and setup for Waste Water Diversion and the HF Trench are working.
- When the river level forecast is for 330, then:
  - The Waste Water Diversion discharge meters need to be working.
  - The pH probes at Outfall 001 need to be electrically turned off.
  - Flow metering equipment and pH probes need to be removed as necessary to avoid water damage.
  - Move compliance point from Outfall 001 to "C" probes ("C" probes are used at river level 330-331).
  - The "deer stand" at Outfall 001 will be under water at river level 330.
- When the river level is at 331, the "B" probe is the compliance point outfall probe.
- When the river level is at 332, the "A" probe is the compliance point outfall probe.
  - At level 332, close the Storm Water 01 valve at the East End near barge unloading dock.
- When the river level is at 334, the Headworks Manhole area (PI Tag Q-AIT-8030) are the compliant outfall probes.
- When the river level is at 337, the HF Trench (PI Tag Q-AIT-8032) and the Waste Water Diversion (PI Tag Q-AIT-2003) probes are the compliant point outfall probes.
- If truck / railcar unloading is requested by the Logistics department instead of barge unloading, ensure valves for DCM, TCE, and Methyl Chloroform truck / railcar unloading are in the correct position.
- The pump structures will be observed and managed as the flood level rises.
- Contact other plant departments as necessary for assistance.

River Level Falling (Returning to normal)

- As the river level falls, return to the river pH probes to their normal place of operation:
  - River level is greater than or equal to 337, maintain at the HF Trench and the Waste Water Diversion probes as the outfall probes.
  - River level is between 337 and 334, return to "Headworks Manhole" probe as the outfall probe.
  - River level is between 334 and 332, return to the "A" probe as the outfall probe.
  - River level is between 332 and 331, return to the "B" probe as the outfall probe.

- River level is between 331 and 330, return to the "C" probe as the outfall probe.
- River level is less than 324, return to pH probes at Outfall 001.
- The pump structures will be observed and managed as the flood level falls.
- Open Storm Water 01 valve at East End near barge unloading dock.
- Verify with the Logistics Department when to return to barge unloading and ensure the proper valve alignment at that time.
- Contact other plant departments as necessary for assistance.

Logistics Department

Logistics Supervision is responsible for coordinating inbound/outbound transportation of materials and products by rail, river, and highway. Barge unloading activities will be coordinated by Logistics with Utilities and corresponding process units. Relocation and redirection of shipping containers to a higher elevation both on and offsite will be considered.

River Level Rising

- Regularly observe the current and forecasted river level.
- Logistics department continues to schedule barge deliveries until the US Coast decides to shutdown river transportation.
  - Logistics department is notified of a river transportation shutdown by the tow boat company upon attempting to schedule a barge for delivery. Logistics will strive to stay up-to-date on the river status and adjust barge scheduling accordingly.
  - The Logistics department must contact plant management for continued acquisition of Methyl Chloroform, Trichloroethylene, and Methylene Chloride.
- At approximately river level 331-332, the Methyl Chloroform piping is under water and cannot be barge unloaded.
  - Contact plant management for continued acquisition of Methyl Chloroform.
- At approximately river level 333-335, Trichloroethylene can no longer be barge unloaded.
  - Contact plant management for continued acquisition of Trichloroethylene.
- Methylene Chloride (DCM) – The river level is not an issue during flooding for DCM barge unloading (plant shutdown would occur prior needing to make delivery changes).
  - Contact plant management for continued acquisition of Methylene Chloride.
- Notify the Utilities department prior changing the transportation method for Methyl Chloroform, Trichloroethylene, and Methylene Chloride.
- Contact maintenance for relocation of nitrogen carts as needed.

- Ensure that the work barge sewage hold tank is pumped out, if it could be impacted by the flood.
- Contact maintenance for shut down/disconnection of electrical power to the work barge and river MCC.
- Disconnect hoses from piping on the river cell; leave the hoses on the work barge.
- At approximately river level 340 and higher, remove the work barge from the area.
- At river level >341', the plant loses capabilities to transport via railway into and out of the facility.

River Level Falling (Return to normal)

- As the river level returns to normal, verify with plant management to return to barge delivery unloading.
    - Begin barge unloading as the river level and any US Coast Guard restrictions allow.
- Notify the Utilities department prior changing the transportation method for Methyl Chloroform, Trichloroethylene, and Methylene Chloride.
- Contact maintenance for installation of electrical power, relocation of nitrogen carts, fence repair, road repair, and debris removal.
- Connect hoses to piping on the river cell.

Operations

- The Operations Manager(s) has the responsibility for operational shutdown, evacuating and clearing affected equipment, and taking measures to prevent environmental pollution.
- If determined that a process shutdown is required, then the existing process area shutdown procedures and/or the planned plant power outage procedure will be followed. De-energization of the plant will require communication with off-site electrical provider.

Environmental Department

- Has the responsibility for overseeing the plant recovery and cleanup plan.
- Oversee waste water treatment, which includes observing outfall flow and consistency.
- Notify the Paducah EPA Regional office if the water level reaches 335 at Outfall 001.
    - The Arkema plant river level is historically 1 foot below the TVA Tailwater level at Kentucky Dam. This level is updated hourly on the TVA website. *(https://www.tva.com/Environment/Lake-Levels/Kentucky)*

Maintenance Department

- Assist with electrical and instrumentation as needed.

- A few areas of concern for E&I department assistance during a flood would be:
    - River Dock
    - Pump Structures
    - MCC for River Dock
    - Waste Water probes at outfall 1 (including A, B, C, HF Trench, and Waste Water Diversion probes)
    - Generator for #7 river pump (East End of plant)
    - Generator for pH (West End of plant)
    - 161kV Substation (if water floods into the plant)
- Install and remove temporary lighting as needed.
- Sandbag as needed around structures and equipment to prevent water damage.
- Relocate the Logistics department portable nitrogen carts as requested.
- Remove debris and sandbags, repair fences (including signage) and roads as requested.

Safety Department (including Security)

- Facility Security Officer is responsible for ensuring that any necessary contingency security plans are put in-place.
- Provide response assistance as needed during a flood.
- Complete an MOC and notify the insurance provider if the fire water system must be disabled or if the water supply is interrupted/limited.

Shift Superintendent

- Continue to include the river level on the morning shift supervisor report.

The plant will evaluate the need to shut down as flood waters begin to encroach on the process areas. If a plant shut down is ordered, only essential personnel will be on-site. Access to flooded process areas may have to be accomplished by boat. The plant management will make the final decision on the need for a boat, the acquisition of a boat, and for what purpose the boat could be safely used. A few other items to consider as flood waters are forecasted to encroach upon the plant process areas are:

- Determine plant process area items that need to be moved to a drier and/or higher elevation such as:
    - Relocate records and data
    - Relocate finished products
    - Relocate mobile equipment and plant vehicles (fill the fuel tank prior to relocation)
    - Relocate fire extinguishers, SCBAs, and 5-minute escape bottles that are in the flooding forecast area
    - Relocate compressed gas cylinders that are in the flooding forecast area

- Relocate emergency response and essential safety equipment from the safety training and emergency response buildings (including ERT truck and portable air trailer).
- Secure equipment/tools that cannot be relocated that are within the flood forecasted area.
- Relocate trash dumpsters and ensure they are emptied prior to flooding in the process areas (contact the trash waste vendor prior to moving the dumpsters).
- Empty trash cans and relocate them.
- Ensure scrap pad is empty prior to flood waters encroaching upon the pad.

- Site IS&T individual contacts plant management and corporate about the possibility of server shutdown and/or relocation of equipment upon a flood forecast that includes the process areas.
  - Activate the Calvert City Emergency Procedures Computer Operations Center (procedure resides on the servers).
- Electrical power will need to be shutdown as the flood waters increase.
- DCS equipment needs relocation or protection.
- Require site inspections prior to and after the flood.
- After the flood, return the relocated items/equipment to their original locations.
- Fire water supply and protection systems need to be brought back into service as soon as possible after the flood waters recede.
- Strive to retain essential personnel.
- Release non-essential personnel as soon as possible.
- Notify customers, suppliers, and supply chain individuals of the potential inability to meet orders/demands.
- Notify contractors and vendors of plant needs and expectations prior to, during, and after the flood
- Agree upon a cleanup plan for all flooded buildings, control rooms, roadways, etc.

The actions describe above are used to operate the plant up to the point of safe shutdown and preparation for the following:

Flood Ride-Out Plan

Critical Elevations and Activities

337' with crest forecast 340' higher

- Relocate railcars offsite as practical

341'

- Consider relocating trailers off-site secured lot

- Inspect / Check valves to containment to prevent backflow from man ways / trenches
- Contractors to pull equipment and to be re-routed to main entrance

341' and rising

- Prepare to set up to run on potable water
- Empty fuel tanks and establish temporary fuel storage (either HF Platform or Lagoon Wall)

342'

- Activate crisis communication plan
- Bring in portable toilets and sanitary stations
- Relocate railcars to interior plant high point

>342' projected crest within 3 days

- Minimize VF2 and HF inventories and other hazardous material inventories as practicable
- Shutdown Incinerator and TO once process allows

343'

- IC / NIMS Structure to be followed once implemented
- LEPC Communication established
- Notify USCG
- Notify state EPA

344' and rising

- Possible loss of potable water, prepare to shutdown environmental equipment using fire water retention pond
- Relocate trailers and oil drum storage from Receiving area to interior lot

345'

- Relocate ground level drums / cylinders / containers / antimony tons to upper level (consider HF Platform, then lagoon walls)
- Unused mobile equipment moved to lagoon walls
- Secure P&ID hard copies to Administration Building
- Pull Work Barge at River

345' and rising

- Relocate all trailers to east scrap pad

346'

- Loss of generator for #7 river pump (East End of plant)
- De-energize electrical 161kV Substation

346' projected crest

- Relocate critical electrical and computer equipment to a higher level

348'

- Loss of generator for pH (West End of plant)

349'

- Ride-Out Crew Evacuates Facility

Procurement Items to Consider

- Food
- Fuel
- Replacement Clothing / Boots / Rain Gear
- Spot Lights / Flashlights
- Batteries

Transportation Items to Consider

- Boats – 5 minimum, number of people on site should not exceed the boat capacity able to leave at once
- Life Jackets – 30
- Offsite Parking – Calvert public area
- Offsite transportation – company van

Essential Crew Minimum Staffing 342' – 347' (24 Hour Shifts)

ERT – 3
EMR – 2
Electricians - 4
PFWs – 4
Machinists - 2
Loaders – 4
Laborers – 4
Storeroom - 1
Operators per Control Room - 2
Safety - 2
Environmental - 2
Management – All essential Managers
Supervisors per Control Room - 1
Offsite Procurement / Logistics / Runners - 4

Ride-Out Crew Minimum Staffing 347' – 349' (72 Hour Rotation)

ERT - 2

EMR - 2
Electricians - 2
PFWs – 2
Machinists - 2
Loaders – 2
Laborers – 2
Operators per Control Room - 2
Safety - 1
Environmental - 1
Management – All essential Managers
Supervisors per Control Room - 1
Offsite Procurement / Logistics / Runners - 4

Additional Items to Consider

- Gas Powered Trash Pumps and Hoses - 6
- Generators - 10
- Maintain dense grade rock to make high points – 10 tri-axle loads
- Sandbag Administration Building / Servers
    - Sand – 2 tri-axle Loads
    - Sand bags – 2,000 bags maintained on hand
- Communication
    - Radio
    - Cellular
    - Satellite
- Media Communication
- Drones – 2 on site
- Aerial Photos for documentation / learning

Flood preparation and response capabilities are inherent to the responsible positions described in this FERP. Training beyond familiarization with this FERP is not required.

Adverse Weather: Heavy Snow/Ice/Adverse Temperatures

Scenario: Extreme High Temperature

Assumptions

Hot Conditions:
Weather conditions go beyond 100 F
Temperatures projected to stay at or above 100 F
All plant personnel are at work

Response

Outside plant travel and work in areas requiring SCBA, acid suits, acid hoods, or Level A PPE should be avoided. Dehydration from the heat is a life threatening condition, and use of ice vest recommended for outside personnel. Personnel should be instructed to avoid touching metal surfaces due to possibility of burn potential. All non-essential personnel should be instructed to remain inside. All medical emergencies should be treated as life threatening.

Scenario: Severe Winter Weather

Announcement of impending ice or snow in large amounts that result in the inability of employees to travel to and from work, or create unacceptable risk to plant operations.

Assumptions:

Weather deteriorates to severe travel conditions.
Temperatures projected to stay at or below freezing for an extended period of time.
All normally scheduled plant personnel are at work at the onset.

Response:

Within first 60-120 minutes:
Notify plant manager or designee of conditions that are present. Request that all non-essential personnel be released to travel safely from plant to home. Notify labor personnel to continue with road upkeep and staging of salt at doorways and walkways. Notify security to brief all personnel arriving on-site to work that all non-essential personnel are being sent home. If work conditions are deteriorating all maintenance activities will be curtailed with the exception of emergency work.

Within next 4-8 hours:
All non-essential personnel will be evacuated from plant. Emergency conditions are in effect. Personnel are directed to remain inside if at all possible.

Ice and/or adverse conditions will be considered to be present at all levels and stairways. **Extreme caution will be exercised.** Arrangements should be considered for meal delivery and/or relief notification.

Plant Operations:
From the onset of the event site management will evaluate and determine if the plant production units should continue to operate. Since many of the processes function ideally in colder weather the hazards associated with shutting down may be greater than continuing to operate.

Critical equipment, such as safety critical ROVs should be secured to prevent ice buildup as practicable. Piping dead legs in NaOH systems are to be drained to a safe location to prevent freezing. Water systems that are prone to freezing (e.g. above ground and heat tracing is inoperable) and not in use should be drained.

Heaters in the fire water pump room and fire water valve houses are to be verified to be operating. In the event of loss of electrical power or heat to an area protected by a wet pipe sprinkler system, the fire protection system should be valved out and drained. In severe conditions, fire water riser valves (including deluge systems) should be protected from freezing. This could mean that underground PIVs are to be closed and the entire riser system drained. Compensatory measures are to be taken if fire protection is taken out of service.

Operator and Maintenance rounds will include visual inspection of heat tracing systems and an elevated awareness of chemical and critical equipment freeze points and leaks.

If the decision is made to shutdown or if loss of electrical power is imminent the operating areas will follow established shutdown procedures. If loss of electrical power occurs suddenly without notification the operating areas will take the production units to a safe state as soon as possible.

Site management will determine when the rideout crew will be dissolved following a site assessment of damage, hazards and potential risks. Once the facility is determined to be safe, non-essential employees will be allowed to enter the facility.

Communications:
Site management will monitor local and national weather forecasts, and KY DOT communications for winter weather forecasts, weather reports, and road conditions. The main gate Security Officer will monitor the National Weather Service (NWS) radio and the CIMAP radio for weather-related warnings.

If a severe winter weather event is imminent site management will contact the Corporate Crisis Team, Corporate Communications and Business Units (Business Continuity) to provide updates on the status of plant employees, physical / asset damages and any special needs or services that will be required. Communications to plant employees will be made with broadcast communication tools (e.g. Send Word Now). Further notifications will be made per Annex 10 and the plant Emergency Communication Plan will be implemented.

Severe Winter Weather Ride-Out Plan

Procurement Items to Consider

- Food
- Fuel (gasoline and diesel)
- Generators - 10
- Heaters (consider carbon monoxide hazards) for each control room and shop
- Replacement (Insulated) Clothing / Waterproof Boots
- Spot Lights / Flashlights
- Batteries

Transportation Items to Consider

- 4X4 Vehicles – 4 minimum
- Backhoe or Loader, etc. - one of the purposes is to establish and maintain operating and evacuation routes for personnel
- Offsite Parking – Calvert public area if onsite parking area cannot be cleared
- Offsite transportation – company van
- Onsite transportation – company vehicles to shuttle personnel to their work areas to minimize risk of walking on snow / ice

Essential Crew Minimum Staffing Event Duration 3 Days (24 Hour Shifts)

ERT – 3
EMR – 2
Electricians - 4
PFWs – 4
Machinists - 2
Loaders – 4
Laborers – 4
Storeroom - 1
Operators per Control Room - 2
Safety - 1
Environmental - 1
Management – All essential Managers
Supervisors per Control Room - 1
Offsite Procurement / Logistics / Runners - 4

Ride-Out Crew Minimum Staffing Event Duration >3 Days (72 Hour Rotation)

ERT - 2
EMR - 2
Electricians - 2
PFWs – 2
Machinists - 2
Loaders – 2
Laborers – 2
Operators per Control Room - 2

Safety - 1
Environmental - 1
Management – All essential Managers
Supervisors per Control Room - 1
Offsite Procurement / Logistics / Runners - 4

Additional Items to Consider

- Salt – bagged and bulk
- Sand – 2 tri-axle Loads for traction and stuck vehicles
- Communication
    - Radio
    - Cellular
    - Satellite
- Media Communication
- Drones – 2 on site
- Aerial Photos for documentation / learning

Severe winter weather preparation and response capabilities are inherent to the responsible positions described in this scenario. Training beyond familiarization with this section of the ICRP is not required.

Civil Disturbance Scenario

Assumptions

Trespass and disturbance on company property may be designed to impede normal operations and employee access to the facility. These events may tend to maximize media attention and interest. Refer to *Plant General Security Plan*, SEC-ADM-0703, for additional information.

Response

In order to allow for maximum operations the following may be enacted:
Notify the National Response Center and Captain Of The Port if necessary (see Annex 11 *External Incident Notification for phone numbers*)

Access

- Alternate access control points may be established
- Identification of alternate routes for product transfer and delivery may be developed as needed
- Review of safety and security safeguards to ensure adequate perimeter fencing, lighting, and protective force allocation or augmentation to respond to demonstration blocking access or penetrating the facility
- Provide notification via the plant alarm systems

Protection of Critical/Physical Security

- Protection of critical areas of the plant will be routinely patrolled
- Identification of what is needed to be sealed off in critical areas to include ceasing of transfers or discharges to areas outside the facility
- Police and local authorities should be notified and used to remove non-peaceful demonstrators from the facility and to assist in channeling or moving peaceful demonstrators to non-critical areas

Response Planning and Execution

- Maintain or improve liaison with local law enforcement
- Plan in advance (if possible) what is needed to ensure safety and security risks are dealt with promptly
- Ensure communication is maintained throughout any event

Public Affairs Crisis Team

- Review and implement the Crisis Communication Plan as necessary

Threat Assessment

- Monitor and maintain communications with law enforcement contacts, consultants, and the Internet
- Institute upgraded security as needed

Off-Site Incidents Impacting the Facility

Assumptions

Conditions or events outside the company property (i.e.: neighboring facility issues, unusual man-made events, or closure of access routes) may impede, disrupt, or create abnormal conditions, which effect employee safety and facility access. These events may increase media attention and interest. Refer to *Plant Response to National Threat Conditions*, SEC-ADM-0703, for additional information.

Response

In order to allow for maximum operations and safety of plant personnel and contractors or visitors, the following may be enacted:

Notify the National Response Center and Captain Of The Port if necessary (see Annex 11 *External Incident Notification for phone numbers*)

Notification of Plant Personnel

- Notify personnel by all available means (555, radio, plant alarm system) to shelter-in-place or evacuate to a safe location if personal injury is likely to occur from any condition originating off-site

Access

- Alternate access control points may be established
- Identification of alternate routes for safe egress from the facility may be developed as needed
- Review of safety and security safeguards to ensure adequate perimeter fencing, lighting, and protective force allocation or augmentation to respond to events blocking access or even penetrating the facility

Protection of Critical/Physical Security

- Protection of critical areas of the plant will be routinely patrolled
- Identification of what is needed to be sealed off in critical areas to include ceasing of transfers or discharges to areas outside the facility
- Police and local authorities should be notified and used to remove/control non-peaceful demonstrators from the facility and to assist in channeling or moving peaceful demonstrators to non-critical areas

Response Planning and Execution

- Maintain or improve liaison with local law enforcement
- Plan in advance (if possible) what is needed to ensure safety and security risks are dealt with promptly
- Ensure communication is maintained throughout any event

Public Affairs Crisis Team

- Review and implement the Crisis Communication Plan as necessary

Threat Assessment

- Monitor and maintain communications with law enforcement contacts, consultants, and the Internet
- Institute upgraded security as needed

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Only the electronic version on the Calvert City Plant Directory intranet is valid.

0	Unknown	First issue of this procedure
Revision No.	Date	Revision Description (last three)
19	2 Mar 2018	Remove Channel 2 reference in Head Count Officers section
20	31 Dec 2018	Annual Review
21	18 Mar 2019	Updated "Emergency Evacuation Procedures" sections to take into account the effects from fire modeling on emergency evacuation routes and assembly points (action item 428603) per the results of the 2018 Baker Risk Facility Siting Study.

Written by:	Checked by:	Approved by:
Monty Schell Senior Safety Engineer	Jeremy Rowe Environmental Engineer	Jay Fulton Manager of Safety and Health

Annex 5 Head Count and Plant Evacuation

The evacuation of the entire plant, or a portion of the plant, may be necessary with a major release of a flammable or toxic chemical. In the event this is necessary, the following guidelines have been established and practiced through drills with the facility personnel on an annual basis.

Safety Department

The Safety Department is responsible for developing and maintaining the Emergency Response Plan. There are many factors that can affect the efficient execution of an ERP. Thorough advance planning and conducting training and drill exercises help to increase the likelihood of conforming to the ERP.

A significant part of the ERP is to establish safe assembly points, evacuation routes and a means of accounting for personnel. The planning of these components of the ERP should consider predictable hazards that may be present in an actual emergency.

Assembly points and evacuation routes have considered the events listed in Annex 4 of this ICRP and could be applied to other scenarios. Also taken into consideration are the effects from fire modeling as concluded in the 2018 Facility Siting Study conducted by Baker Risk. The assembly points and plant evacuation routes (once outside of the process areas) are located outside of the flammable dispersion and thermal radiation contours modeled for up to a 2 inch release point. Accounting for personnel is primarily done via an electronic scanning and reporting software.

Since every emergency will likely be different, personnel receive training on the safe methods for selecting safe routing, assembly points, and evacuation. The majority of the shelter-in-place, assembly and evacuation training, exercises, and drills belong to the Safety Department for coordination. The Safety Department personnel are responsible to ensure assembly point and evacuation maps and plans are current and annually reviewed.

Area Supervisor or Shift Superintendent

Area Supervisors or Shift Superintendents are responsible to ensure assembly point and evacuation maps and plans are available for reference during their shifts of responsibility. These supervisors shall also ensure that designated Incident Commanders are contacted in the event of an emergency. Area Supervisors or Shift Superintendents will ensure that plant alarm system activation is sounded in accordance with plant alarm system directives. During off-shift periods it is the responsibility of the Shift Superintendent to ensure that the head count and plant evacuation plan is implemented in accordance with plant alarm system directives.

Area Supervisor or Shift Superintendent will direct all emergency actions or responding emergency personnel until the arrival of another Incident Commander. Area Supervisor or Shift Superintendent will direct security personnel to close all entry gates, and to obtain and

verify the status of plant occupancy for head count purposes (through use of Kronos and gate sign-in logs).

Assembly Points

Established assembly points, exit information, and fire alarm activation have been included in plant training for evacuation. Assembly points and evacuation maps are displayed in appropriate areas throughout the plant and posted throughout interiors of all normally occupied buildings. During an emergency, assembly points must be reported to by plant employees, contractors, and visitors.

Relocating Individuals to Assembly Points

Individuals reporting to Assembly Points may leave the location under the direction of the Incident Commander or if unsafe conditions no longer allow for occupancy. Follow these steps to relocate from one assembly point to another are:

- Relocation is ordered by the Incident Commander or unsafe conditions do not allow of occupancy.
- Head Count Officer communicated the Incident Commanders' instructions to all individuals at the Assembly Point.
- Head Count Officer takes note of the names of each individual at the Assembly Point.
- Head Count Officer and personnel should badge only once, regardless of being relocated to a different Assembly Point, or not.
- Head Count Officer and personnel at the Assembly Point must follow instructions of the Incident Commander.
- All individuals at the Assembly Point need to obtain and possess a 5-minute emergency escape bottle.
- Check wind direction (check the windsocks) prior to leaving.
- Proceed cross and upwind to the new Assembly Point as directed by the Incident Commander.
- Relocated Head Count Officer ensures that all relocated personnel have safety arrived at the new Assembly Point.
- Relocated personnel need to ensure that they get accounted for by their relocated Head Count Officer from their original Assembly Point.
- Relocated Head Count Officer reports accountability of relocated personnel as soon as possible to the Incident Commander.
- If someone is unaccounted for then a search and rescue operation may be activated by the Incident Commander,

Note: After employee badge out at the initial Assembly Point, then they should not badge again, unless instructed to by the Incident Commander, Head Count Officer or Supervision.

Head Count Officers

Personnel responsible for accounting of assembled plant personnel, visitors, and contractors during normal day shift are listed in Table 4 of Annex 20. During off-shift

the Incident Commander will assign individuals to fulfill the function of head count officers. Head count officers will proceed to the primary and alternative assembly points when the appropriate signal is sounded. Assembly points are located on the assembly point and evacuation map. Head count officers will record names of plant visitors, contractors and employees who cannot swipe their badge at the assembly point. Recorded information will be transmitted via radio to the Incident Commander or the designated head-count contact located in the Incident Command Post.

Contractors and Visitors Accountability

If plant visitors and contractors are directed to evacuate (by alarm or their plant representative), they will procede to the nearest plant assembly area where they will swipe their issued badges. If they do not have their badge in their possession then the head count personnel will take their name. The head count officer will use the plant sign-in sheets at the main gate and construction gate to identify plant visitors and contractors. The names from assembly areas will be forwarded to the head count officer to assure all plant visitors and contractors are located. Visitors and contractors (i.e. security guards, contract IS support) have been issued badges and shall follow the same headcount procedures as employees

Employee Accountability

If plant employees are directed to report to assembly points, they will procede to the nearest plant assembly area where they will "swipe" their employee badge. If they do not have their employee badge, they will give their name to head count personnel for forwarding to the head count officer.

Shelter-In-Place

Designated operators may need to shelter-in-place to maintain control of certain plant operations. If needed, personal protection equipment is provided in each control room for this purpose. Procedure SAF-ADM-0616 *Plant Shelter-In-Place Procedure* documents how shelter-in-place should be performed as well as relocation of personnel during a sheltering event. The various operating areas also have additional shelter-in-place instructions specific for their area.

Emergency Evacuation Procedures

In the event of an unplanned emergency where escape procedures are necessary, plant personnel are to follow primary escape route assignments unless the emergency prevents use of these routes. In an emergency the plant wide alarm should be sounded and instructions provided over the PA system (except for system tests). If evacuation beyond the primary assembly points is needed, the Incident Commander will advise the head-count representative at each primary assembly point which evacuation route to take out of the plant.

The following precautions need attention during an emergency evacuation:

- Check wind socks to determine wind direction.
- Review posted evacuation maps in buildings.
- Evacuation maps denote emergency evacuation routes.

Three routes of exit exist for the plant at the present time. The primary route leads personnel to the south plant road, then to the administration building and the main entry/exit of Arkema Inc. property. The second alternate route is through the contractor/construction road, known as the west plant road. The third alternate route is through the turnstile at the closed East Gate that will lead to the Hwy 95/1523 crossroad of Arkema property.

Secondary Assembly Points

There are two established secondary assembly points for personnel if a complete evacuation is ordered. These locations are at the junction of the West Gate access road and Highway 1523, and the East Gate outside parking area. Both areas allow for staging, access to transportation, and emergency equipment access. Plant visitors, contractors and employees should remain at these assembly areas for head count purposes and only leave when directed by the Incident Commander.

Search and Rescue Plan

If an employee, contractor, or visitor is not accounted for during a head count, then a search and rescue operation will be initiated within the plant property. The search and rescue operation will be performed by the plant trained Emergency Response Team (ERT) using the plant search and rescue grid map (K-03121-X). The map is located in the Integrated Contingency and Response Plan, Annex 6. On the map the plant is divided into 12 grids which will be used to organize and simplify the search. A few items to keep in mind prior to determining the grid(s) search priority:

- Location of emergency situation (i.e. fire, chemical release...).
- Search direction (i.e. west to east/north to south...).
- Wind direction.
- Area(s) in the plant that the unaccounted individual normally works.
- PPE and equipment needed for the search and rescue.
- Brief the ERT members on the event and provide instructions prior to search.
- Any particularly hazardous work that was present in various areas prior to the head count (i.e. confined space entry, critical lift, elevated work, hydroblasting, atypical or large lockout/tagout operation, work over water, process shutdown or startup, etc.).

Once the grid search priority is determined, ERT members will be designated to specific grids. The Incident Commander (IC) will be notified when a grid has been deemed search completed until all 12 grids are completed or until the unaccounted individual(s) is found.

Upon locating an unaccounted individual(s), ERT members will provide emergency rescue and/or medical support as may be needed.

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Document No.: AIMS-ADM-0081-6	Page: 1 of 2	Revision No.: 20	Issue/revision/review date: 10 December 2019

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Revision No.	Date	Revision Description (last three)
18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 6 Plant Maps and Drawings

Plant Street Map K-03225-Y
Traffic Pattern for Hazardous Waste Traffic - Local Area ..... Figure B-6, chart 30
Safety Equipment Incinerator Area ..... Figure G-2
Hazardous Waste Traffic Patterns - Calvert City Plant K-11171-X
Emergency and Hazardous Chemical Inventory
Storage Location Site Plan K-11051-Y, K-11052-Y
Arkema Plant Sewer Map K-06351-Y
Plant Firewater Map K-05019-Y
Plant Topographic Maps K-11042-X, K-11043-X, K-11044-X, K-11045-X
Plant Map Main Process Areas Search and Rescue Grid K-03121-X

Maps and drawings contained in this Annex may be updated and corrected without necessitating a revision to the ICRP or notification to a State or Federal Agency.

ARKEMA
INNOVATIVE CHEMISTRY

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-7	Page: 1 of 22	Revision No.: 24	Issue/revision/review date: 10 May 19

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0		
Revision No.	Date	Revision Description (last three)
22	31 Dec 2018	Annual Review
23	26 March 2019	Updated to include Appendix A Fire Event Protection Plans and associated reference to the appendix in the procedure.
24	10 May 2019	Added documentation referencing pump capabilities to supply fire water flow during fire scenarios for the demand of two critical areas.

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 7 Emergency Preparedness and Prevention Plan

Various federal and state regulations exist that primarily address the prevention of accidents and include elements related to contingency planning. This annex contains additional information required to comply with Best Management Practices, Spill Prevention Control and Countermeasures, Groundwater Protection, and Stormwater Protection requirements.

The Arkema Calvert City facility is designed, constructed and maintained in accordance with good engineering practices and procedures that minimize public access to the active areas of the facility and minimize the potential of a fire, an explosion, and a release to the environment.

Accidental Release Prevention Program

A prevention program is in place to minimize the risk of hazardous chemical releases in accordance with the Occupational Health and Safety Administration (OSHA) Process Safety Management (PSM) standard (29 CFR 1910.119) and the EPA Risk Management Program. This prevention program covers those processes that handle HF, chlorine, HCl, and flammable substances (including vinylidene fluoride) above the threshold quantity of either the PSM or RMP rules. This Plan conforms to the requirements of 40 CFR § 112 with three minor exceptions. These are discussed in "Unloading and Loading Operations".

Pollution Prevention Committee

Members	Facility ext.	Responsible For
Monty Schell	6342	Safety and Security
Jeremy Rowe	6522	Environmental Compliance

Responsibilities

The committee will meet as needed and has the following responsibilities:

- Develop and review the Integrated Contingency and Response Plan to evaluate the need to update and/or modify the plan. Arkema believes that this review frequency is equivalent to the requirement to amend the Plan when there is a change in the facility.
- Assure a PE certifies technical amendments to the ICRP.
- Identify toxic and hazardous substances.
- Identify areas with potential for release to the environment.
- Conduct assessments to prioritize substances and areas of concern.
- Determine and select appropriate Best Management Practices.
- Establish training for facility and contractor personnel.
- Provide assistance for interdepartmental coordination in carrying out the plan.
- Evaluate the effectiveness of the Plan in preventing and mitigating releases of pollutants.
- Make recommendations to management in support of corporate policy on Pollution Prevention related matters.

Identified Groundwater Activities

The following activities are conducted at the Calvert City facility and are subject to the provisions of 401 KAR 5:037, Section 2. These activities are conducted throughout the active portion of the Calvert City facility.

- Land treatment of a pollutant.
- Storage, treatment, disposal, or related handling of hazardous waste, solid waste, or special waste in incinerators, surface impoundments, tanks, drums, or other containers.
- Commercial or industrial storing or related handling in bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, and other pollutants held in tanks, drums, or other containers.
- Transmission in pipelines of raw materials, intermediate substances or products, finished products or other pollutants.
- Installation and operation of on-site sewage disposal systems.
- Installation, construction, operation or abandonment of wells, boreholes or core holes.
- Impoundment or containment of pollutants in surface impoundments, lagoons, pits or ditches.
- Commercial or industrial transfer, including loading and unloading, in bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, or other pollutants.

Risk Identification And Assessment

Areas Subject to SPCC and BMP Regulations

Lists of areas subject to regulation under SPCC and BMP are located in Annex 14, Tables 3 and 4.

Facility Maps

Facility maps that show the location of all applicable areas are included in Annex 6, which is in a separate binder due to its size. The flow direction of potential releases and stormwater are shown on these maps in addition to the facility industrial sewer lines.

Physical, Chemical, Toxicological, and Health Information

Safety Data Sheets (SDS) for the toxic and hazardous chemicals on site are maintained and available to all personnel through the Arkema intranet. Contractors are required to submit SDS's for new chemicals they are bringing onsite. Annex 21 contains a summary of PPE and flammability data for the most common chemicals used in the plant.

Drainage of Contained Areas

All contained areas have: 1) A valve on the discharge line that are maintained in the closed position unless being drained, or 2) A blind containment outfitted with a pump that is manually operated in the field. Before draining/pumping storm water from the diked area, the water is inspected for pH, and visible or olfactory signs of organics and oil (depending on the diked area being inspected). If the retained water is clearly free of oil and organics,

and the pH is between 4 and 10 the discharge valve may be opened, or the pump may be operated to remove the water. Immediately after draining, the valve will be closed (stopping any flow) or the pump shut-down. Drainage will be performed under responsible supervision and documented on forms as required by area specific environmental requirements procedures.

It is the responsibility of the Operators for an area to inspect the retained water, drain (or pump) the water, if free from contamination, and close the valve (or stop pump) after draining. If the retained water is found to be contaminated the Operator will contact his Supervisor or a member of the Environmental Department for disposal instructions. All diked areas shall be inspected and appropriate corrective action taken within 24 hours after the end of the rain event.

Materials Compatibility

Calvert Facility Specifications

Detailed engineering specifications have been prepared for all materials handled in the Calvert facility. These specifications list recommended materials of construction and vendor model numbers where applicable. These specifications are prepared and maintained by the Engineering Department, and follow accepted good engineering practices.

Storage Tanks and Process Vessels

The project design engineer selects materials of construction for storage tanks and process vessels. Any changes in materials of construction which are outside of the design code(s) or standard(s) for a given tank or vessel must be approved through the Process Safety Management "Management of Change Procedure" (MOC). Any change in service that is outside of the design code(s) or standard(s) also must be approved to ensure compatibility of the materials of construction with the proposed new service material, in accordance with accepted good engineering practices.

Calvert Underground Cathodic Protection System

A cathodic protection system has been established to protect the underground steel utilities piping, primarily water and natural gas. All underground steel piping is also coated as specified in the applicable Arkema piping specification.

Quality Assurance for Plant Equipment and Spare Parts

The Mechanical Integrity Recommended Practices manual provides internal plant guidance to assure that purchased equipment and spare parts have been fabricated with materials and methods suitable for their intended use. This manual complies with the requirements of 29 CFR 1910.119.

Operating Procedures

Operating procedures have been prepared for all areas of the Calvert City facility. These procedures are periodically reviewed and updated as necessary to reflect current operating conditions and safe operating practices.

Emergency Shutdown

Emergency shutdown instructions shall be made through whatever means available (radios, alarms, voice, etc.). This must be done quickly to minimize danger to human health and the environment. All operating areas have established procedures that are kept up-to-date and are readily available in the operating control rooms.

Good Housekeeping

Good housekeeping is recognized as essential to the maintenance of a clean, orderly work environment and the overall environmental cleanliness of the facility. This is reflected in the facility's Housekeeping Procedure. Operations are responsible for day-to-day cleanliness of process units and maintenance is responsible for clean up after work is performed on equipment. This includes the immediate clean up of any release found. Good housekeeping, good safety practice and environmental awareness are an important part of each employee's daily work assignments.

Preventive Maintenance

There is a comprehensive preventive maintenance program at the Calvert facility presently covering the areas indicated below. The following inspections are carried out by personnel from Maintenance, Engineering, Operations, and/or approved outside contractors.

1. Periodic inspections of all major rotating equipment and its related instrument and electrical gear.
2. Periodic inspections and checks of all pressure vessels to determine vessel integrity and remaining useful service.
3. Periodic non-destructive testing of oil and chemical storage tanks.
4. Periodic testing of all critical environmental instruments, such as high-high sensors, with their associated shut-off valves.
5. Periodic inspections covering high voltage substations, motor control centers, transformers, etc. vital to the function of the facility and facility equipment operation in general.
6. Periodic inspections and replacement of facility safety relief valves to meet code requirements.
7. Piping inspections during overhauls to determine the necessity for replacement or upgrading.

All this work is executed via a Maintenance Work Order System.

Visual Inspections

The Calvert City facility operates 24 hours a day, seven days a week. Operators and maintenance personnel are in the production units on a regular basis and visually inspect the units. These inspections are not documented, as they are part of regular operations. Forane Utility Operators are responsible for the operation of all wastewater treatment facilities. This includes inspection of the lower lagoon for foaming at the air vent pipe, excessive amounts of kynar polymer behind the booms, and any oil sheen behind the booms.

Areas subject to SPCC or BMP regulations are inspected monthly for indications of any deterioration and housekeeping by the HES Department, and is documented on "BMP/SPCC Monthly Inspections" forms AIMS-ADM-0081b (K-97), AIMS-ADM-0081d (K-98), AIMS-ADM-0081f (Utilities), AIMS-ADM-0081h (F-134a), AIMS-ADM-0081j (Storeroom), AIMS-ADM-0081l (Maintenance), AIMS-ADM-0081n (Monomer), AIMS-ADM-0081p (Polymer), AIMS-ADM-0081r (Incinerator), AIMS-ADM-0081t (Boilers), and AIMS-ADM-0081v (Logistics).

Integrity Testing of Storage Tank Systems

All storage tanks at the Calvert City facility are equipped with appropriate level instrumentation and automatic shut-off controls. Tanks that contain oil or hazardous substances are inspected on an established schedule for corrosion and/or other damage. The inspection frequency and methodology are under the direction of the Maintenance Department. Scheduling of the individual pieces of equipment is the responsibility of the Production Superintendents. Testing of safety relief devices is also included as an integral part of the inspection program.

The Mechanical Integrity Recommended Practices manual provides internal plant guidance to install or repair pressure containers, storage tanks, and steam piping. This manual complies with the requirements of ASME and NBIC.

Provisions of Secondary Containment, Repair or Closure

After a release, if the integrity of the tank system is not damaged, the tank system will be returned to service once the release is remediated and any necessary repairs to the tank system are made. If the source of the release is from a component without secondary containment and that is not readily accessible for visual inspection or is below grade, then the entire component will be provided with secondary containment before being returned to service. If a component is replaced, the new component will satisfy the requirements for new systems specified in Section 3 and 4 of 401 KAR 34:190. If the tank system is determined to be irreparable or secondary containment cannot be provided as required, it will be closed according to the closure plan.

Certification of Major Repairs

After a release, if it is determined that major repairs are required (i.e., repair of ruptured primary or secondary containment, installation of a liner, etc.), the tank system will not be returned to service until certification that the repaired system can handle hazardous waste without release for the remaining life of the system is performed by an independent, qualified professional engineer registered in the Commonwealth of Kentucky. This

certification will be submitted to the Kentucky Department for Environmental Protection within seven (7) days after returning the tank system to service. The oil storage tanks used at the Calvert City plant are new and are not subject to brittle fracture; as such they do not require evaluation.

Security

The Arkema Calvert City facility employs the security measures outlined below to prevent the unknown and unauthorized entry of individuals onto the active portions of the site. This Plan does not address the facility security plan for the various threat levels established by the Department of Homeland Security, and the United States Coast Guard. This detailed facility security plan is considered Security Sensitive Information and is not available to the public.

Lighting

The Arkema Calvert City facility has sufficient lighting at all operating, tank farm, loading and unloading areas, and access gates for the safety of operating personnel, to identify any spills, and for general plant security.

Barriers

The Arkema Calvert City facility is surrounded by a seven-foot high chain-link fence, except for the fence around the trailer parking lot that has a six-foot high chain-link fence. This barrier is used to control access to the plant, including the hazardous waste treatment, storage and disposal areas.

Means to Control Entry

There are two primary gates and an alternate gate through which road traffic and personnel may enter and exit the facility. The main gate is for the use of facility employees and visitors and is guarded by a contract security company 24 hours per day, 7 days per week. The guards control access into the facility at the main gate through use of traffic control barriers. Contractors and employees of contractors use the other two gates. A contract security company mans these gates during the hours they are open. The remainder of the time, these two gates are kept locked.

Gates for rail traffic are monitored by camera and locked when not in use. While in use these gates are visually observed during rounds made by the security personnel, shift superintendent, and other facility employees.

There are thirteen other gates in the security fence for access to sections of the property that are normally unmanned. These gates are normally locked, with the exception of two gates on the west side of the property used for routine access by personnel to the wastewater treatment lagoons and one gate on the east side of the property used for routine access by personnel to the river dock area. A gate near the river docks is also unlocked when a barge is being unloaded and the docks area is manned. Site personnel perform periodic security patrols along the perimeter of the plant as an additional security measure.

Warning Signs

Warning signs with the legend "Danger No Trespassing Unauthorized Personnel Keep Out" are posted at each entrance to the Arkema Calvert City facility and on the security fence. These signs are constructed and erected so that they are legible from a distance of at least twenty-five feet and in sufficient number to be seen from any approach. Warning signs have been erected at the hazardous waste management areas located within the facility confines. The warning signs are in English, which is the predominant language in the area.

Records Retention

Records generated are retained in accordance with *Index of HES Records*, HES-ADM-0006.

Emergency Equipment

See Annex 6 "Maps" for the location of emergency equipment located in waste management areas.

Spill Control Equipment

The Arkema Calvert City Kentucky plant is manned 24 hours a day, 7 day a week. Operators are routinely in the various production units and tank farm areas to observe and correct any problems that may develop. Most storage tanks and process areas are equipped with secondary containment structures that will contain any spill. Operators are required to immediately report any spill that is discovered and start corrective actions to stop the release and control the released material.

The plant maintains emergency response equipment for in-plant and outside plant emergency response. The equipment consists of acid suits, self-contained pressure-demand compressed-air breathing apparatus (SCBA), confined space entry equipment, rescue equipment and various absorbent and leak repair materials. The exact inventory level varies due to use and potential needs. All hazardous waste treatment and storage areas are equipped with secondary containment.

The plant maintains an inventory of absorbent materials and neutralization chemicals, and owns several pieces of equipment (trucks, loaders, pumps, etc.), which can be used for spill control if deemed necessary by the Incident Commander. The river dock area has booms that can be deployed around a barge if a leak develops. All trucks, end loaders, pumps, etc. are maintained by the Maintenance Department. All absorbent materials and neutralization chemicals are replenished as soon as possible after every use.

Recovered oil will be disposed as used oil. Any other chemical will be disposed in accordance with governmental regulations.

Personnel Protective Equipment

Appropriate PPE is identified by chemical in Table 2 of Annex 21. Acid suits, suitable for the expected service, are found in the PPE building, which also controls the hazardous waste storage tanks and incinerator area. Acid suits are not at the less than 90-day container storage areas because these areas are not normally occupied. Ice vests are available from first aid for use under an acid suit during warm weather. Acid suits are decontaminated and inspected by the user after every use. Ice vests are maintained in an ice freezer at first aid.

SCBAs are located in operating control rooms for use during any emergency. SCBAs are not at the less than 90-day container storage areas because these areas are not normally occupied. Arkema will provide prescription glasses designed to fit inside an SCBA mask for those employees who require corrective lenses. SCBA air bottles are recharged after usage. The Arkema Calvert City plant has the equipment required to recharge breathing air bottles and has a verbal agreement in place with the Calvert City Fire Department, which also has this equipment, for mutual support in case of an emergency.

Escape respiratory equipment is located throughout the plant in sufficient number for all employees and plant visitors and contractors. The inspection and maintenance of these escape masks is the responsibility of the HES Department as well as area operators.

Emergency Decontamination Equipment

The locations of safety shower and eye wash stations in the incinerator area are shown in Annex 6. Safety showers are also located throughout the facility and are marked with appropriate placards and lights. Calvert City potable water is used for these stations. Safety shower and eye wash stations are inspected monthly.

Ambient Air Monitoring Equipment

Ambient air monitoring equipment is available from the HES Department. The plant maintains a stock of standard monitoring tubes for the chemicals with the highest probability of exposure. These tubes have expiration dates and are replaced as needed. Additional monitoring tubes for other chemicals are available, but must be special ordered.

Oxygen and Explosion Meters

Portable multi-gas sampling meters are available throughout the plant. These meters are serviced and calibrated per the manufacturer specifications.

pH Meters and Paper

The plant has several pH meters that may be used for assessment of any release to the environment. The plant laboratory has a pH meter with a temperature-compensating probe that meets the quality assurance and control requirement for EPA protocol. Additional meters that are capable of showing an approximate pH are available in the Environmental and Production Departments. pH paper that is capable of indicating acid and base is available throughout the plant.

The laboratory pH meter is calibrated before every use according to the appropriate laboratory procedure. The laboratory whenever requested calibrates the other pH meters in the plant.

Post-Emergency Equipment Maintenance

The Decontamination Team is responsible for ensuring that all emergency equipment used in an emergency response is cleaned and fit for its intended use, or is disposed. The Cabinet of the Kentucky Department for Environmental Protection and appropriate local authorities will be notified that the post-emergency equipment maintenance has been completed before operations that were shutdown due to the emergency are resumed.

Fire Response Controls

The location of fire extinguishers (over 500 plant-wide), fire hose stations and fire monitors (located throughout the plant) in the incinerator area are shown in Annex 6. All fire hose and monitor stations in the incinerator area operate on a high-pressure fire water system with a delivery pressure of approximately 130 pounds per square inch (psi).

A high-pressure fire water system is supplied by firewater pumps that take their suction from an onsite firewater pond. The area operator tests this system to assure its proper operation on a weekly basis. The firewater pond is automatically refilled from the low-pressure river water system that takes its suction from the Tennessee River.

Fire SSPVs, hydrants, and extinguishers are inspected, using standard industry practice. The SSPVs, hydrants, and extinguishers are inspected and tagged (where required) to document the inspections.

The Plant operates several areas that are protected with either deluge, wet-pipe, or pre-action sprinkler systems. These systems are fed water from the high-pressure fire water system. It has been determined through calculations that the high-pressure fire water system has adequate flow available to meet the demand required by two critical area sprinkler systems activating simultaneously. The two areas were chosen based on the physical and chemical properties of the area and potential risk to property and business.

Fire response pre-plans to non-sprinkled areas are located in Appendix A of this procedure.

Unloading and Loading Operations

All material loading and unloading operations are monitored continuously during material transfer either by instrumentation or personnel in accordance with Department of Transportation regulations. Monitoring includes material level in the receiving vessel, couplings, connections points and other areas where spills are most likely to occur. The facility believes the existing required monitoring is sufficient to be equivalent to the requirements of 40 CFR § 112.7(h)(3), § 112.8(c)(8) and § 112.8(b)(3).

Waste liquids are piped directly into the five hazardous waste storage tanks, and from the storage tanks to the incinerator. Waste gas is piped directly into one of two gas holders,

and from there to the thermal oxidizer or incinerator. Quench and scrubber water in the incinerator and thermal oxidizer sumps are pumped to an elementary neutralization system operated under the facility's KPDES permit.

Hazardous wastes generated by the routine operations of the laboratories, maintenance shops and sludge from tank cleanings are placed in containers and stored at one of the less than 90-day container storage areas. This containerized waste is picked up by a permitted transporter for ultimate treatment and/or disposal at an off-site RCRA permitted facility.

Stormwater Runoff

Stormwater runoff from the active portions of the facility are treated, monitored and discharged through (6) permitted KPDES discharge outfall. Four of these outfalls drain stormwater runoff from the county road, non-industrial plant areas, and undeveloped grass and forestlands. Two of these outfalls are classified as industrial stormwater runoff outfalls.

Stormwater runoff associated with construction activities will be managed under the facility's KPDES permit and associated stormwater discharge outfalls. Facility BMP and SWPP plans will be applied as appropriate for the construction activity and all runoff will be captured by a permitted KPDES stormwater outfall and be in compliance with defined permit limits. In rare instances where a construction activity runoff will not be managed through a permitted stormwater outfall, commonly accepted construction best management practices will be applied.

Most oil storage tanks are of double wall construction. The five hazardous waste storage tanks are equipped with secondary containment. Most of the container storage areas are also equipped with secondary containment. Arkema has earth-moving equipment that may be used to construct dikes, berms, and trenches to reroute runoff if necessary. All hazardous waste management facilities are located above the 100-year flood plain.

Public Water Supplies

The Arkema Calvert City facility is designed to prevent releases to surface waters, ground waters and storm water runoff. All waste transfers involving the hazardous waste storage tanks are made through pipelines. The hazardous waste storage tanks are located within secondary containment and areas vulnerable to spillage are curbed. In addition, Arkema has earth-moving equipment that may be used to construct dikes, berms, and trenches in the unlikely event of a release from these curbed and/or contained areas to the environment.

Equipment and Power Failure

In the event of an equipment or power failure involving a hazardous waste storage tank, waste feed into the storage tank will stop. An instrument air failure will result in all valves failing in the safe mode. A power failure, water supply failure, or improper natural gas supply will result in the automatic stopping of feeds into the incinerator. Repairs involving equipment failure will be made before hazardous waste feed is resumed to the affected equipment. In the event of an equipment failure associated with a container storage area,

repair or replacement is made immediately. A power failure does not affect the container storage areas.

Hazardous Waste Aisle Space Requirement

The incinerator and less than 90 day container storage areas have reasonable access from all sides to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment.

Management of Landfills

Landfills are not actively used at the Arkema Calvert City facility for the treatment or storage of hazardous waste. Therefore liquid and container issues are not applicable to this facility.

General Inspection Requirements

The general inspection schedule for the Arkema Calvert City facility is shown on Table 1 of Annex 14. A description of the types of problems looked for and the frequency of inspections is included in the descriptions below. If an inspection reveals a problem at any of the hazardous waste management areas, it is recorded in the inspection log along with the corrective action needed to rectify the problem.

Hazardous Waste Specific Process Inspection Requirements

Container Inspection

The "owner" of the areas inspects the less than 90-day container storage areas weekly. Containers are inspected to assure that they are closed, that they are not structurally damaged or leaking, and they are properly labeled and dated. The storage area is inspected to identify any structural deterioration of the area, that the aisle space between containers is adequate, the area is clean, and that emergency response equipment is present. These inspections are documented and maintained on file.

Tank System Inspection

The hazardous waste storage tanks used at the Arkema Calvert City facility are pressure vessels. The incinerator operators inspect these tanks on a daily basis. Each tank and its secondary containment are visually inspected for leaks, structural deterioration, and standing water inside the secondary containment. The pressure is checked and recorded daily to assure that the tank is being operated within its design specifications. The weight is checked and recorded daily to assure that the tank is not being overfilled. These tanks will be externally inspected at least every five years using non-destructive thickness testing methods as established by applicable pressure vessel codes. This testing will also be conducted when the tanks' exterior visual inspections reveal signs of severe corrosion or signs of other potential failures. The tanks are taken out of service, emptied, cleared and internally inspected on a 10-year cycle or when the tanks' exterior visual inspections reveal signs of severe corrosion or signs of other potential failures that cannot be repaired externally. All inspections are documented and maintained on file.

Incinerator Inspection

The incinerator operators inspect the hazardous waste incinerator used at the Arkema Calvert City facility on a routine basis. These inspections are outlined below by frequency of inspection. All inspections are documented and maintained on file.

Continuous

The following incinerator instrumentation is monitored on a continuous basis and displayed in the control room. These readings will be used to assure that the incinerator is operating within permit limits.

- Waste liquid and waste gas feed rates.
- Combustion airflow.
- Upper incinerator zone temperature.
- Lower incinerator zone temperature.
- CO concentration in the stack gas on a 1 hour rolling average corrected to 7% oxygen.

Daily

The incinerator and ancillary equipment will be inspected daily for indications of leaks, spills, fugitive emissions, overheating, general wear and damage, and tampering. These inspections are documented and maintained on file.

Weekly

The incinerator emergency waste feed cutoff systems and associated alarms will be tested weekly to verify their proper operation as required by the permit. These inspections are documented and maintained on file.

Monthly

Operational testing of the incinerator and ancillary equipment will be conducted on a monthly basis. This inspection will check the overall incinerator system operations. These inspections are documented and maintained on file.

Closed RCRA Regulated Unit Inspection

Inspection of RCRA closed regulated units are performed monthly and as necessary after a significant rain event. The cover and vegetation will be visually inspected. Observations will be made of the health of the grass cover, and visual inspection of the cover will be done to detect any signs of erosion. Any breaches identified in areas that could expose impacted soils of affect the proper functioning of the cap will be repaired, and the inspection and any repairs documented. Records will be maintained for these inspections and maintenance efforts

Other Inspection

Waste piles, surface impoundments, landfills and land treatment units are not actively used at the Arkema Calvert City facility for the treatment or storage of hazardous wastes.

Inspection Log

Sample copies of the forms used during routine inspection of the hazardous waste management areas at the Arkema Calvert City facility are included in Annex 15. Completed inspection logs are kept on file for a minimum of three years, or as required by state and federal regulations.

Plant operations at Calvert City are ISO 9001 and ISO-14001 certified. The operating areas maintain their respective emergency shutdown and isolation procedures in each control room. The operators have been trained and are certified to manage the operations, and emergency conditions to prevent inadvertent conditions that could impact the facility or community.

In response to an emergency that could result in a catastrophic release or irrevocable damage an emergency shutdown of a process unit would be required. Normally, a shutdown would proceed in a slow deliberate manner. However, some events could require a quicker and more rapid emergency shutdown. These include: tornado, earthquake, fire, flood, explosion, loss of electrical power, or catastrophic loss of steam. Annexes 3 and 4 of this document contain tactical information that addresses these adverse conditions and appropriate responses.

APPENDIX A

FIRE EVENT PROTECTION PLANS

134a COMPRESSOR / UTILITY SHED
K97 LOW TEMP COMPRESSOR BUILDING
MONOMER FRICK COMPRESSOR BUILDING

NOTE: This plan is to provide general information and is not intended to be a prescriptive guide. This plan and the following firefighting strategies may be adjusted during a fire event by the Incident Commander or designee.

During a fire emergency, priority is be given to activities that accomplish the following: 1) Protection of human life; 2) Protection of human health; 3) Protection of the environment; 4) Confinement of the fire; 5) Extinguish the fire; 6) Ventilation and Overhaul the space.

A. INCIDENT COMMAND SYSTEM RESPONSIBILITIES

Upon notification of the fire event, the Plant ICS is to be activated and the Emergency Response Team (trained in Industrial Fire Brigade) is to be dispatched to ERT Building. An Operations Officer will be determined based on available personnel at the time of the event and authorized by the Incident Commander to provide operational control of the Emergency Response Team.

B. FIRE EVENT RESPONSE COORDINATION

Upon receiving event information concerning the fire's location, the Operations Officer will assign a scribe for the ERT (in addition to the ICS scribe), obtain a head count, and direct the ERT members to a safe staging location based on environmental conditions prior to dispatching the ERT to the response area. The Operations Officer will determine the nearest primary assemble point to muster the ERT should a retreat from the fire is required. The Operations Officer will assign an Entry Team Leader who will conduct hose team operations for hand line operations and fire monitor operations. The Operations Officer will assign an employee to oversee Logistics who will conduct SCBA operations and equipment accountability operations. The ICS Medical Officer will oversee and provide medical assistance to the response with EMR trained personnel and First Aid/CPR/AED trained personnel.

Entry Team Leader

The Entry Team Leader reports directly to the Operations Officer. This individual is responsible for coordinating the hose teams to set-up fire hoses for hand lines and portable fire monitors to provide water from the available fire hydrant(s).

- Set-up will require the hose teams to install block valves on both of the hydrant's 2 ½" fittings.
- Hand lines will be reduced down to a 1 ½" fire hose by the use of a gated Y.
    - Where entry is to be made inside a burning enclosure, a Backup Hose Team **MUST** be established prior to the Entry Hose Team entering the enclosure.
        - Entry and Backup Hose Teams are to be donned in full turnout gear and SCBA.
- Portable fire monitors will utilize 2 ½" fire hose.
- Fixed fire monitors will be utilized where available.

Communications will be maintained with all entry and backup hose teams, all fire monitor teams, and the ERT Lead primarily on radio channel 5.

Entry and Backup Hose Teams

The Entry and Backup Hose Teams report directly to the Entry Team Leader. At a minimum a hose team will include at least 2 Industrial Fire Brigade trained ERT members. These teams are responsible for executing entry into a burning enclosure per interior firefighting requirements:

1. To locate and extricate any known down personnel inside the enclosure,
2. Contain and extinguish the primary source of the fire,
3. Contain and extinguish any secondary sources of fire,
4. Provide backup for the hose team whom has made entry into the enclosure.

Communications will be maintained with the Entry Team Leader and with the other team(s) they are operating with primarily on radio channel 5.

Fire Monitor Team

The Fire Monitor Team(s) report directly to the Entry Team Leader. At a minimum a Fire Monitor Team should include at least 2 Fire Brigade ERT members. These teams are responsible for providing cooling water onto the burning structure and/or adjacent structures. Fire monitors may include available permanent fixed fire monitors, and various styles of portable fire monitors.

It is preferred that a Fire Monitor Team is to include an Industrial Fire Brigade trained ERT member manning the fire monitor (required for most portable fire monitor set-ups) and a dedicated spotter (dependent on available manpower). The fire monitor spotter is responsible for communicating with the fire monitor operator(s) to distribute cooling water supply to a location determined by the team to:

1. Prevent or mitigate damage to a structure impinged by fire.
2. Provide additional water to a fire in assisting an adjacent hose team.

Communications will be maintained with the Entry Team Leader and with the other team(s) they are operating with primarily on radio channel 5.

Decontamination Team

Dependent on secondary chemical exposures, decontamination will at least require self-decontamination. Where an Entry Hose Team is exposed to a gaseous or liquefied hazardous chemical in which turn-out gear cannot fully protect the exposed person, then a

dedicated Decontamination Team will be assigned. The Decontamination Team reports directly to the Entry Team Leader. This team is responsible for the decontaminating personnel exposed to a contaminate which could penetrate through an ERT member's turn-out gear.

Communications will be maintained with the Entry Team Leader and with all entry and backup teams primarily on radio channel 5.

Logistics

Logistics personnel reports directly to the Operations Officer. This individual is responsible for coordinating the supply of and accountability for equipment issued to the hose teams, decontamination teams, and medical teams. Such equipment includes, but is not limited to:

- SCBA bottles, packs, & masks,
- Fire response equipment (hoses, nozzles, valves, wrenches, etc.),
- Decontamination supplies (PPE, cleaning equipment, containment, etc.),
- Medical Response gear (EMR bags, O2, AED, medical supplies, etc.).

Additionally, Logistics is responsible for the operation of the SCOTT air trailer and control of the ERT truck equipment.

Communications will be maintained with the Operations Officer primarily on radio channel 5.

Medical Officer

The Medical Officer reports directly to the Incident Commander and is responsible for medical triage, providing medical treatment, coordinating EMR and/or CPS/First Aid/AED trained employees to assist response personnel, and contacting outside medical response agencies for assistance.

Communications will be maintained with the Incident Commander, and the Operations Officer primarily on radio channel 4. Communications will be maintained with the infirmary and assigned medical responders on radio channel 5.

Emergency Medical Responders / CPR/FA/AED trained Responders

Assigned EMRs and CPR/FA/AED responders are responsible for providing initial care to injured personnel and for transporting injured personnel to the Infirmary.

Communications will be maintained with the Medical Officer on radio channel 5.

ERT Scribe (a secondary scribe assigned as resources permit)

The ERT reports directly to the Operations Officer. This individual is responsible for keeping a log of all fire event response activities and the official records of the fire event response (run sheet, notes, supporting documentation, etc.).

- Hose Team accountability
- SCBA tank capacities
- Communication records to Incident Command
- Fire event timeline

Communications will be maintained with the Operations Officer and all of his direct reports primarily on channel 5.

C. FIRE EVENT SPECIFIC RESPONSE PLANS

134a Compressor Building

The response plan is based off of a westerly wind direction with the fire event taking place during weekday hours, assuming 10 to 15 industrial fire brigade trained ERT members are onsite to respond.

A hydrant identified as **H3** is located approximately 50 feet northeast of the Utility Shed which houses the 134a compressor. The hydrant is to be used to provide water supply for the response. Two hose team members will install block valves on both 2 ½" fittings of the fire hydrant, and then charge the hydrant with the block valves closed. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the Utility Shed.

The hose teams are then to run 50 feet of 2 ½" hose from each block valve to:

1. Provide water supply to a Blitzfire portable monitor on one of the 2 ½" hoses.
    a. The Blitzfire portable monitor will provide approximately 272 GPM of water to the exterior of the Utility Shed.

    b. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the Utility Shed.

2. Provide water supply to a gated Y on the second 2 ½" hose.
    a. Two 50 foot sections of 1 ½" hoses are to be attached to each 1 ½" fitting on the gated Y to create two separate 100 foot long attack lines equipped with a G-Force Automatic nozzle.

    b. ERT members performing these task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the Utility Shed.

3. Both attack lines are to be used to provide cooling water to the exterior of the Utility Shed and any adjacent structure. One attack line will be used at a time to accompany the Entry Hose Team into the Utility Shed while the other attack line will remain with the Backup Hose Team.
    a. ERT members performing this task will be donned in full turnout gear and using a SCBA to prevent exposure to smoke and heat created by the fire in the Utility Shed.

4. It will be expected that there will be at least 6,120 gallons of water distributed onto and outside of the structure during a 15 minute period which will collect to the adjacent rock/soil covered areas. It will also be expected that there will be an

additional 2040 gallons of water distributed inside of the Utility Shed which will be collected by grated trenches installed in the floor of the Utility Shed.

a. The trenches flow to a sump that must be manually activated to pump any water out of the trenches to the 134a plant's storm water tank.

K97 Low Temp Compressor Building

The response plan is based off of a westerly wind direction with the fire event taking place during weekday hours, assuming 10 to 15 industrial fire brigade trained ERT members are onsite to respond.

A hydrant identified as **HH 21** is located approximately 123 northwest of the K97 Low Temp Compressor Building which houses two compressors. A secondary hydrant identified as **HH22** is located approximately 12 feet east. The hydrants may be used to provide water supply for the response. Two hose team members will install block valves on both 2 ½" fittings of the fire hydrant(s), and then charge the hydrant with the block valves closed. ERT members performing this task at HH22 may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

HYDRANT HH21

The hose teams are then to run a 150 feet of 2 ½" hose from the west block valve to:

1. Provide water supply to a Blitzfire portable monitor on the 150 feet 2 ½" hose line.
   a. The Blitzfire portable monitor will provide approximately 417 GPM of water to the exterior of the K97 Low Temp Compressor Building.

   b. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

Next, The hose teams are to run 100 feet of 2 ½" hose line from the east block valve and attach a gated Y on the end of the 2 ½" hose to:

1. Run two hose lines made up of (2) 50 foot sections of 1 ½" hose each.
   a. Both runs of 1 ½" hoses are to be attached to each 1 ½" fitting on the gated Y to create two separate attack lines equipped with a G-Force Automatic nozzle.

   b. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

2. Both attack lines are to be used to provide cooling water to the exterior of the K97 Low Temp Compressor Building and any adjacent structure. One attack line will be used at a time to accompany the Entry Hose Team into the K97 Low Temp

Compressor Building while the other attack line will remain with the Backup Hose Team.

a. ERT members performing this task will be donned in full turnout gear and using a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

3. It will be expected that there will be at least 9825 gallons of water distributed onto and outside of the structure during a 15 minute period which will collect to the adjacent rock/soil covered areas. It will also be expected that there will be an additional 1785 gallons of water distributed inside of the K97 Low Temp Compressor Building.

HYDRANT HH22

The hose teams are then to run a 100 feet of 2 ½" hose from south block valve to:

1. Provide water supply to a Blitzfire portable monitor on one of the 2 ½" hoses.
   a. The Blitzfire portable monitor will provide approximately 488 GPM of water to the exterior of the K97 Low Temp Compressor Building.

   b. ERT members performing this task will likely need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

Next, The hose teams are to attach a gated Y on the north block valve to:

1. Run two hose lines made up of (2) 50 foot sections of 1 ½" hose each.
   a. Both runs of 1 ½" hoses are to be attached to each 1 ½" fitting on the gated Y to create two separate attack lines equipped with a G-Force Automatic nozzle.

   b. ERT members performing this task will likely need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

2. Both attack lines are to be used to provide cooling water to the exterior of the K97 Low Temp Compressor Building and any adjacent structure. One attack line will be used at a time to accompany the Entry Hose Team into the K97 Low Temp Compressor Building while the other attack line will remain with the Backup Hose Team.
   a. ERT members performing this task will be donned in full turnout gear and using a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

3. It will be expected that there will be at least 9546 gallons of water distributed onto and outside of the structure during a 15 minute period which will collect to the adjacent rock/soil covered areas. It will also be expected that there will be an

additional 1500 gallons of water distributed inside of the K97 Low Temp Compressor Building.

Monomer Frick Compressor Building

The response plan is based off of a westerly wind direction with the fire event taking place during weekday hours, assuming 10 to 15 industrial fire brigade trained ERT members are onsite to respond.

A hydrant identified as **HH8** is located approximately 79 feet west of the Monomer Frick Compressor Building north man door entrance. The building houses the Frick compressor. Hydrant **HH8** will be used to provide water supply for response to a fire event inside the building in addition, two adjacent monitors may be utilized to provide cooling water to the building structure or other adjacent structures. Permanent monitor **M9** is located approximately 80 feet to the northwest of the Monomer Frick Compressor Building, and permanent monitor **M8** is located approximately 50 feet south of the Monomer Frick Compressor Building

At **HH8** two hose team members will install block valves on both 2 ½" fittings of the fire hydrant, and then charge the hydrant with the block valves closed. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the Monomer Frick Compressor Building.

The hose teams are then to run 100 feet of 2 ½" hose from south block valve to:

1. Provide water supply to a Blitzfire portable monitor on one of the 2 ½" hose lines.
    a. The Blitzfire portable monitor will provide approximately 579.9 GPM of water to the exterior of the Monomer Frick Compressor Building.

    b. ERT members performing this task will likely need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the Monomer Frick Compressor Building.

Next, The hose teams are to run a 50 foot section of 2 ½" hose line from the north block valve and attach a gated Y on the end of the 2 ½" hose to:

1. Run two hose lines made up of (2) 50 foot sections of 1 ½" hose each.
    a. Both runs of 1 ½" hoses are to be attached to each 1 ½" fitting on the gated Y to create two separate attack lines equipped with a G-Force Automatic nozzle.

    b. ERT members performing this task may need to don full turnout gear and use a SCBA to prevent exposure to smoke and heat created by the fire in the K97 Low Temp Compressor Building.

2. Both attack lines are to be used to provide cooling water to the exterior of the Monomer Frick Compressor Building and any adjacent structure. One attack line will be used at a time to accompany the Entry Hose Team into the Monomer Frick

Compressor Building while the other attack line will remain with the Backup Hose Team.

a. ERT members performing this task will be donned in full turnout gear and using a SCBA to prevent exposure to smoke and heat created by the fire in the Monomer Frick Compressor Building.

3. It will be expected that the portable Blitzfire monitor and the two attack hose lines will distribute 12,967 gallons of water onto and outside of the structure during a 15 minute period which will collect to the adjacent rock/soil covered areas. It will also be expected that there will be an additional 2134 gallons of water distributed inside of the Monomer Frick Compressor Building.

Emergency Escape Procedures

In the event of an unplanned emergency and escape procedures are necessary, the Emergency Response Team is to follow primary escape route assignments unless the emergency prevents personnel from using routes when the Operations Officer gives the command to retreat and/or plant wide alarm is sounded. The ERT is to assemble at the nearest primary assembly point. If evacuation beyond the primary assembly points is needed, the Incident Commander will advise the head-count representative at each primary assembly point which evacuation route to take out of the plant.

Assembly Points

Five primary assembly points have been established: 1) the administration building; 2) the technical building; 3) the east construction gate; 4) the west construction gate; and 5) the boiler. Two routes of exit exist for the plant. The primary route leads plant personnel to the south plant road which leads to the administration building and the main entry/exit of Arkema, Inc. property. The alternate route is through the contractor/construction road, known as the west plant road. A suitable exit may result in exit from the closed East Gate (secondary assembly point) which will lead to the Hwy 95/1523 crossroad of Arkema, Inc. property.

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19	2 Mar 2018	Edits to clarify AEDs and include EMR references.
20	31 Dec 2018	Annual Review
21	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 8 Medical Considerations

General

The Arkema Calvert City facility employs a Contract Nurse and has several employees who are Emergency Medical Technicians (EMT) or Emergency Medical Responders trained and certified (see Annex 20, Table 1 for a listing of all trained individual). Additionally, a medically trained guard is on duty every shift. The Administration Building has a First Aid and Dispensary area that is equipped to handle most medical emergencies that may arise. Typically, the Nurse provides medical coverage when present and EMTs/EMRs provide medical coverage otherwise. Normal incident reporting, documentation and investigation procedures, as outlined in Annex 11, are followed for every medical incident.

During a medical emergency the Nurses' station is at the First Aid and Dispensary area in the Administration Building. The Nurse does not respond to the site of an emergency unless requested by the site personnel. The Plant Medical Officer, or designee, is responsible for triage of patients moved to the First Aid and Dispensary area, arranging for copies of MSDSs for chemical exposure cases (to go with patient), and coordination of transportation.

The incident command team and responders should consider the following medical considerations during any emergency, or drill.

Universal Precautions/Body Substance Isolation

Universal precautions/body substance isolation, which presumes that all bodily fluids and materials are infectious for HIV, HBV and other bloodborne pathogens, will be followed. Universal Precautions is the practice identified by the Centers for Disease Control (CDC) to minimize the exposure to potentially contaminated bodily fluids. These precautions are a means of preventing infection by blood borne pathogens such as HBV and HIV. Under universal precautions, the blood and certain body fluids of all patients are to be considered infectious and precautions are taken to protect the responder against potential contamination. Arkema and its employees are jointly responsible for the proper execution of universal precautions. Arkema provides appropriate training, protective equipment, and vaccinations to employees who are subject to exposure in their jobs. Occupational exposure to bloodborne pathogens at Arkema is limited to laborers, custodians, and those employees who have been designated as members of the plant Emergency Response Team (ERT), are Emergency Medical Responders, or are EMTs or nurses licensed by the Commonwealth of Kentucky. The primary control methods recommended as universal precautions for protection from bodily fluids are:

- Use of personal protective equipment and clothing (gloves, masks, eyewear, gowns)
- Taking care with contaminated sharps (needles, knives, broken glass)
- Use of masks and/or ventilation bags for rescue breathing
- Proper decontamination of surfaces, equipment, and clothing with a 10% bleach solution
- Hand washing

Occupational Exposure to Blood borne Pathogen

Work practices dictate that all employees wash their hands with soap and water immediately after the removal of gloves or other protective equipment following first aid treatment, and that any skin that is contacted with bodily fluids is also washed with soap and water. Mucous membranes that are contacted will be flushed with water. Washing facilities are readily accessible to employees.

Housekeeping

Immediately following the treatment of any injury, all equipment, and surfaces that have been in contact with bodily fluids or other potentially infectious materials will be cleaned and decontaminated with a 10% bleach solution. Glassware will not be used in the first aid area, and all contaminated laundry (including clothing) will be handled as little as possible and bagged at the location where it was used. In the case of clothing, it should be removed as soon as practical and bagged immediately.

Hepatitis B Vaccination

The vaccine series for Hepatitis B is available to all employees who are subject to exposure in their jobs. Identified employees who decline to accept the vaccination must sign a statement indicating that they chose to decline the vaccine.

First Aid/CPR

All employees have satisfied the basic first aid/CPR training requirements. The first link in a medical emergency is the recognition of trauma. Like the first responder role, this facility applies the same rules when discovering a condition that is not normal:

- Notify by any means possible (phone, radio, runner, etc.) the main gate guard of the medical emergency,
- Request proper medical response to assist,
- Provide assistance if properly trained and appropriate for your level of training, and
- Stay with the individual until assistance arrives (provide direction if necessary).

AEDs

The facility has ten Automated External Defibrillator's (AED), located in the plant infirmary, the shift superintendent's office, the F-134a control room, the engineering building lunch room, the boiler control room, the plant ERT truck, the monomer control room, P&L building, the kynar finishing control room, and the K-98 control room that are available for trained medical personnel to use in medical emergencies involving cardiac arrest. All EMTs, ERT members, first responders, first aid/CPR trained employees, and the Plant Nurse have been trained in the use of the AEDs maintained on site.

Multiple -Casualty Incident/Triage

During an incident that involves more than one medical emergency, the first medical responder on the scene must be sure to initiate the assessment and prioritization of individuals for medical treatment. This process is called "triage." The goal of triage is to afford the greatest number of people the greatest chance of survival. To accomplish this goal, the responder must provide care to people according to the seriousness of their illnesses or injuries while keeping in mind that spending a lot of time trying to save one life may prevent a number of other patients from receiving the treatment they need and thereby decrease their chances of survival.

To properly triage a group of patients, the following classification is used:
Priority 1: Correctable Life Threatening Illness or Injury
Priority 2: Serious But not Life Threatening Illness or Injury
Priority 3: Walking Wounded
Priority 4: Dead or Fatally Injured

Outside Medical Arrangements

Representatives from outside medical providers have been invited to the Calvert City facility to review with the plant nurse proper medical treatment for the materials handled in the facility. Primary ambulance service is available from Marshall County with back-up services available from the surrounding counties.

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Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 9 Facility and Locality Information

Facility Description

Arkema Inc. owns and operates a chemical manufacturing facility in Marshall County, Kentucky in the Calvert City industrial complex on the south bank of the Tennessee River. The site encompasses approximately 835 acres and is relatively flat with an average topographic elevation of 348 feet above mean sea level (msl), with the northern portion sloping to the Tennessee River. The site is bordered by the Tennessee River to the north, Southern Coal Handling to the west, Ashland and agricultural private property to the south, and Calvert City Metals and Alloys, Inc. to the east. The closest private residences are approximately 0.75 mile to the south. Previous Corporate names for the facility include Pennsylvania Salt Manufacturing Company, Pennsalt, Pennwalt, Atochem North America, Inc., Elf Atochem North America, Inc., and Atofina Chemicals, Inc. The company became Arkema Inc., on October 4, 2004. The site location is shown in Annex 6.

Facility Operations

Arkema currently produces F-134a, F-32 (hydrofluorocarbons (HFC)), F-141b and F-142b (hydrochlorofluorocarbons (HCFCs)) refrigerant gases (Forane®), hydrochloric acid (HCl), vinylidene fluoride (VF_2), and polyvinylidene fluoride (Kynar® PVDF) at the Calvert City facility. The Calvert City facility also has a refrigerant blending and packaging operation.

HCFC and HCl Production

Forane® 141b (1,1-dichloro-1-fluoroethane) and Forane® 142b (1-chloro-1,1-difluoroethane) are the trade names for the HCFCs presently produced at the Arkema Calvert City facility. Forane® 141b is sold as a product to industry for uses in foam blowing applications and Forane® 142b is primarily used on-site in the production of vinylidene fluoride, but is also sold as a product to industry. The co-product aqueous hydrochloric acid is purified and sold as food grade HCl. The production of these HCFCs involves the reaction of anhydrous hydrogen fluoride with methyl chloroform (1,1,1-trichloroethane) as follows:

$$HF + CH_3CCl_3 \rightarrow CH_3CCl_2F + HCl$$

(hydrogen fluoride) (1,1,1-trichloroethane) (methyl chloroform) (1,1-dichloro-1-fluoroethane) (F-141b) (hydrogen chloride)

$$HF + CH_3CCl_2F \rightarrow CH_3CClF_2 + HCl$$

(hydrogen fluoride) (F-141b) (1,1-dichloro-1-fluoroethane) (F-142b) (1,1-difluoro-1-chloroethane) (hydrogen chloride)

$$HCl + H_2O \rightarrow \text{aqueous HCl}$$

In addition to the desired products of reaction, the reaction processes produce a variety of halogenated organic reaction by-products. The first by-product is a nonhazardous vapor stream referred to as the Forane® 143a rich gas. This stream is normally returned to the process, but may be thermally oxidized at the Forane® 142b incinerator (incinerator) or sent to the K-98 drowning tower for up to 72 hours per month. The hazardous waste generated during the manufacturing of Forane® 141b and 142b are the reaction by-products left in the process reactor. Referred to internally as "tars," the Forane® 142b reactor bottoms are sent to hazardous waste storage tanks L-V-0119 and/or L-V-0119A. The Forane® 141b and 142b processes undergo continuous evaluation in an effort to minimize the quantity and toxicity of the waste being generated. Corrosive wastewater exiting the process is sent to an elementary neutralization system and managed according to the facility's Kentucky Pollutant Discharge Elimination System (KPDES) Permit.

VF_2 Production

Forane® 142b is the primary raw material in the production of vinylidene fluoride (Kynar® monomer). Kynar® monomer is sold to industry as a product, but is primarily used onsite in the production of polyvinylidene fluoride (Kynar® PVDF). The production of Kynar® monomer involves the thermal cracking of Forane® 142b in a furnace as follows:

$$CH_3CClF_2 \xrightarrow{\text{heat}} CH_2{=}CF_2 + HCl$$

(1,1-difluoro-1-chloroethane) (F-142b) — (1,1-difluoroethylene) (vinylidene fluoride, VF_2) (Kynar® Monomer) — (hydrogen chloride)

The crude Kynar® monomer is purified and recovered through distillation, while the uncracked Forane® 142b is recycled back to the process. This process produces a halogenated organic heavies stream referred to as the Kynar® monomer recycle column bottoms. This stream, referred to internally as "recycle column bottoms," is sent to hazardous waste storage tanks L-V-0121 and/or L-V-0229. Corrosive wastewater exiting the process is sent to an elementary neutralization system and managed according to the facility's KPDES permit.

PVDF Production

Kynar® monomer is the primary raw material in the production of Kynar® PVDF. Kynar® PVDF is sold to industry for use in many high purity and harsh environment applications. The production of Kynar® PVDF involves the reaction of Kynar® monomer and sometimes Hexafluoropropylene (HFP) with various initiators and chain transfer agents in a reactor as follows:

$$CH_2{=}CF_2 + \text{Initiator} + \text{Chain Transfer Agent} \rightarrow (CH_2\text{-}CF_2)_n$$

(1,1-difluoroethylene) (vinylidene fluoride, VF_2) (Kynar® Monomer) — (polyvinylidene fluoride) (Kynar® PVDF)

The production of Kynar® PVDF produces a nonhazardous vapor stream referred to as the Kynar® polymer reactor vent gas. This stream is thermally oxidized at the thermal oxidizer. Because Kynar® PVDF is a very pure product, the facility produces deionized water for use in the manufacturing process. Corrosive wastewaters exiting the deionizing process are sent to an elementary neutralization system and managed according to the facility's KPDES permit.

HFC and HCl Production

F-134a Production

Forane® 134a (1,1,1,2-tetrafluoroethane) is the trade name for an HFC produced at the Arkema Calvert City facility. Forane® 134a is used in automobile air conditioners and in other cooling applications. It is an ozone safe replacement for Refrigerant 12 (dichlorodifluoromethane), which was banned from production by the Montreal Protocol because of its suspected role in stratospheric ozone depletion. The aqueous hydrochloric acid is purified and sold as a technical grade and as a food grade HCl. The production of Forane® 134a involves the reaction of anhydrous hydrogen fluoride with trichloroethylene (1,1,2-trichloroethene) in the presence of a catalyst as follows:

$$\underset{\text{(hydrogen fluoride)}}{4HF} + \underset{\substack{\text{(1,1,2-trichloroethene)}\\ \text{(TCE)}}}{CHCl_3} \xrightarrow{\text{catalyst}} \underset{\substack{\text{(1,1,1,2-tetrafluoroethane)}\\ \text{(F-134a)}}}{CF_3CFH_2} + \underset{\text{(hydrogen chloride)}}{3HCl}$$

$$HCl + H_2O \rightarrow \text{aqueous HCl}$$

In addition to the desired products of reaction, the reaction process produces a variety of halogenated organic reaction by-products. The first by-product is a nonhazardous vapor stream which is thermally oxidized at the thermal oxidizer. The hazardous waste generated during the manufacturing of Forane® 134a is a result of reaction by-products accumulated in the system. These heavies, referred to as the Forane® 134a organics, are sent to hazardous waste storage tank N-V-6103. Corrosive wastewater exiting the process is sent to an elementary neutralization system and managed according to the facility's KPDES permit.

F-32 Production

Forane® 32 (difluoromethane) is the trade name for an HFC produced at the Arkema Calvert City facility. Forane® 32 is used in automobile air conditioners and in other cooling applications. It is an ozone safe replacement for Refrigerant 12 (dichlorodifluoromethane), which was banned from production by the Montreal Protocol because of its suspected role in stratospheric ozone depletion. The aqueous hydrochloric acid is purified and sold as a food grade HCl. The production of Forane® 32 involves the reaction of anhydrous hydrogen fluoride with methylene chloride (dichloromethane) in the presence of a catalyst as follows:

$$2HF + CH_2Cl_2 \xrightarrow{\text{catalyst}} CF_2H_2 + 2HCl$$

(hydrogen fluoride) (TCE) (Methylene chloride) (F-32) (difluoromethane) (hydrogen chloride)

$$HCl + H_2O \rightarrow \text{aqueous HCl}$$

In addition to the desired products of reaction, the reaction process produces a variety of halogenated organic reaction by-products. The first by-product is a nonhazardous vapor stream which is thermally oxidized at the thermal oxidizer. The hazardous waste generated during the manufacturing of Forane® 32 is a result of reaction by-products accumulated in the system. These heavies, referred to as the Forane® 32 organics, are sent to hazardous waste storage tanks L-V-0119 and L-V-0119A. Corrosive wastewater exiting the process is sent to an elementary neutralization system and managed according to the facility's KPDES permit.

Refrigerant Blending and Packaging

Various refrigerants are manufactured, or purchased, by the Calvert City facility. These refrigerants are blended and packaged into small containers or cylinders. This packaging operations involves receipt of used containers, evacuation of any residual container contents, cylinder cleaning, loading of the refrigerant product, and blasting and painting of the container. Product is also packaged into new containers.

Incinerator and Thermal Oxidizer

The incinerator and the thermal oxidizer utilize water and water/caustic solutions to quench and scrub the vapor stream exiting from each unit's respective combustion chamber. In addition, the incinerator uses water to flush the collecting surfaces of its wet electrostatic precipitator to remove particulate matter. The wastewater streams are collected in the incinerator's sump and the thermal oxidizer's waste acid tank and are sent to an elementary neutralization system and managed according to the plant's KPDES permit.

Facility Wastes

The possibility exists that the processes previously mentioned could generate listed or characteristic hazardous wastes from line clearing, process cleanouts, maintenance activities, or abnormal process conditions. When this occurs, the wastes will be containerized or loaded directly into tanker trucks. Furthermore, Arkema laboratories routinely generate spent solvent wastes. All generated hazardous wastes, except what is stored in L-V-0119, L-V-0119A, L-V-0121, L-V-0229, and N-V-6103, are managed according to all applicable regulations and will be stored on the Arkema Calvert City facility property for periods not to exceed 90 days as provided for by 401 KAR 32:030, Section 5.

Geological Information

Seismic Considerations

The Arkema Calvert City facility is located in an area classified as seismic zone III (New Madrid Faulted Belt) by the Commonwealth of Kentucky and seismic zone II by the Federal Emergency Management Agency (FEMA). Marshall County, Kentucky is not listed in 40 CFR § 264 Appendix VI; however, it is listed in 401 KAR 34:340. The location of the incinerator, storage tanks, and ancillary equipment is not located within 200 feet of any known fault that is known to have had displacement in Holocene time.

An Evaluation of Subsurface Geologic Formations and Surface Topography for Solution or Karst Features

The Arkema Calvert City facility's surface topography does not exhibit solution or karst features. The site's subsurface geology is composed of five geologic units. These units consist of three Quaternary alluvial units (upper, middle, and lower) and two Mississippian bedrock units (Fort Payne Formation and Warsaw Limestone). The upper alluvial unit consists of clay and lakebed silt and ranges in thickness from 10 to 30 feet. The hydraulic conductivity of this unit is estimated from 1E-9 to 1E-5 centimeters per second (cm/s). The middle alluvial unit is composed of interbedded sand, silt, and clay and ranges in thickness from 20 to 60 feet. The hydraulic conductivity of this unit is estimated from 5.9E-5 to 2.3E-4 cm/s. The lower unit consists of 20 to 70 feet of gravelly sand. The hydraulic conductivity of this unit is estimated from 2.4E-5 to 4.0E-3 cm/s. The Fort Payne Formation is composed of limestone and chert in interbedded layers and is approximately 5 to 25 feet deep. The Warsaw Limestone is thick bedded limestone composed of megascopic fossil fragments in a fine-grained limestone matrix. The hydraulic conductivity of the limestone has not been investigated[1].

Floodplain Standard

The active portion of the Arkema Calvert City facility is located between river miles 15 and 16 of the Tennessee River. The Tennessee Valley Authority (TVA) and the U.S. Army Corps of Engineers maintains and operates flood control structures on the Tennessee and Ohio Rivers that may impact the facility site. The 100-year flood elevation for the facility site is approximately 343.8 feet above mean sea level. The hazardous waste storage tanks L-V-0119, L-V-0119A, L-V-0121, L-V-0229, and N-V-6103, and the hazardous waste incinerator are located above the 100-year flood elevation. The location of these tanks and the incinerator are shown on Figure B-2, (Flood Insurance Administration Map), for the facility site. As these facilities are located above the 100-year flood plain, wave action during such a flood will not affect them.

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[1] Harding Lawson Associates, "Pre-RFI Report for Elf Atochem North America, Inc. Calvert City, Kentucky Facility", January 17, 1996

Salt Domes and Caves

The Arkema Calvert City facility has not in the past and has no intentions in the future to place any non-containerized or bulk liquid hazardous waste into any salt dome formation, salt bed formation, underground mine, or cave.

Traffic Information

Estimated Volume

The estimated daily average volume of vehicular traffic at the Arkema Calvert City facility is 50 vehicles.

Traffic Control

All traffic entering the Arkema Calvert City facility is routed through one of two gates. These gates, shown in Annex 6, are identified as the west (2 gates), and main gates. During the off-shifts, weekends, and on holidays, only the main gate is manned; the west gate is manned during the weekdays, while the east gate is locked in the closed position. All gates are manned continuously during operation, and vehicles entering the facility must sign a log sheet that indicates the driver's name, company, destination, time in and time out. All vehicles are required to observe posted traffic control signs.

Hazardous Waste Movement

Hazardous waste movement within the facility, except for material in process pipelines, follows the established routes as shown in Annex 6. Hazardous waste movement to highways is exhibited in Annex 6. Drummed and non-bulk wastes are moved from the processes generating the wastes by fork-truck, and are accumulated in the less than 90-day storage area prior to off-site disposal at a permitted waste facility. Bulk waste streams not incinerated on-site, are loaded directly into bulk shipping containers from the storage tanks and follow the established hazardous waste movement patterns within the facility. Process waste streams from the processes to the hazardous waste storage tanks and from the tanks to the incinerator are conveyed by means of pumps and pressure via a system of closed pipes.

Load-Bearing Road Design

All access roads at the Arkema Calvert City facility are paved with asphalt with a design thickness of ten inches. An analysis of the pavement thickness, based upon estimated daily traffic volume and loads has been performed. This analysis is taken from the *Data Book for Civil Engineers - Design*. Results of this analysis indicate that the existing design thickness of ten inches exceeds the required pavement thickness of seven inches.

Public Health, Safety, and Environmental Impacts

The incinerator at the Arkema Calvert City facility has been designed, permitted, and operated to minimize impacts on public health, safety, and the environment.

Relationship with Local Planning

Arkema is located in an area designated for Heavy Industrial Use by the Calvert City, Kentucky Zoning Ordinances. An excerpt of the Ordinance states:

"*This district is composed of land and structures occupied by or suitable for heavy manufacturing and related activities. Located for convenient access to present and future arterial thoroughfares, highways, and railroad lines, these districts are usually separated from residential areas by business districts or natural barriers; the district regulations are designed to permit the development of the districts for almost any use*[2]*.*"

[2] John S. Talbert and Associates, Inc., Calvert City Zoning Ordinance, March 17,1993, p.77

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Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 10 Notifications

Alarm and Communication Systems

Internal Telephone Alarm System

The internal telephones (i.e., those not directly connected to outside telephone lines) for the facility can activate the internal telephone alarm system by dialing 555. All operating control rooms are equipped with internal telephones. This alarm system activates telephones throughout the facility, through which the appropriate departments are notified of an emergency. If appropriate, the main gate guard will activate the internal voice alarm system. This internal telephone alarm system is tested weekly to assure its proper operation.

Internal Voice Alarm System

The Arkema Calvert City facility is equipped with an internal voice alarm system that meets the requirements of 29 CFR § 1910.165. With this system it is possible to give verbal instructions to all occupied areas of the facility, informing personnel of the location and nature of any emergency. This alarm system is tested daily to assure its proper operation.

Internal Plant Radios

All individuals involved in handling, supervising, or transporting containerized hazardous waste, all operating control rooms, the Safety Department, the Environmental Department, and most supervisors have internal plant radios through which the facility alarm system can be activated. This is accomplished by paging the main gate guard, who will activate the internal telephone alarm system or the internal voice alarm system, as appropriate. All plant radios will be available for use during an emergency. These radios are tested on a continuous random basis through actual usage. All radios are designated as "intrinsically safe" in Class I, Division I, Group C and D atmospheres.

Outside Telephone System

Several radios, telephones, and cellular telephones located throughout the facility are capable of communicating outside of the facility. The radio communications equipment is tested weekly. The telephone and cellular telephone systems are checked on a continuous random basis through routine use.

Dialogic Telephone Alert System

An automated telephone system has been installed that can be used to alert the community. This is accomplished by calling individual local telephone numbers with preplanned messages. The Arkema emergency response team members can also be notified with this system. This system is tested quarterly as part of the table top exercises.

CIMAP Radio

The CIMAP radio system is used to communicate with CIMAP member companies within the Calvert City industrial complex, and to request supplemental emergency response resources, if needed. This radio network is tested on a daily basis, and is located at Air Products. Various supervisory personnel and the plant ERT truck have plant radios equipped to contact CIMAP.

All-Clear

The all-clear will be sounded at the end an emergency when the situation is safe and under control, as determined by the Incident Commander. The all-clear will be sounded via the plant alarm system using "The Entertainer" melody. If access should remain limited to certain areas of the Plant, the Incident Commander will determine access control and ensure that the appropriate barriers are posted.

Internal and External Notifications

Internal incident reporting is covered in *Internal Incident Reporting and Investigation Procedure*, AIMS-ADM-0077, located in Annex 11. Regulatory and community notifications are covered in *External Incident Reporting*, AIMS-ADM-0079, that is also located in Annex 11.

Community Notifications

The community is notified through CIMAP and other appropriate agency notifications. The guard at the main gate will notify CIMAP, and if necessary Livingston County LEPC, when told that an incident has occurred which requires public alerting or notification. CIMAP in turn is responsible to notify the Marshall County LEPC that will warn all citizens through a siren system and a telephone contact system. This system is checked monthly and primarily controlled from Central Dispatch, and backed up by Air Products Plant at Calvert City. Adverse weather conditions are also broadcast through this system for all county citizens. Additionally, a telephone ring down system has been installed to notify the neighboring community of any emergency that may impact the community.

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-11	Page: 1 of 2	Revision No.: 20	Issue/revision/review date: 10 December 2019

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Revision No.	Date	Revision Description (last three)
18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 11 Incident Documentation

All incidents will be documented, investigated and reported in accordance with the "Internal Incident Reporting and Investigation Procedure", AIMS-ADM-0077, and "External Incident Reporting", AIMS-ADM-0079.

Document Name: Integrated Contingency and Response Plan			
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20	2 Mar 2018	Minor edits and clarifications.
21	31 Dec 2018	Annual Review
22	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 12 Training and Exercises/Drills

Training Program

Training has been given both individually through hazard communication instruction to all employees, and through on-going general safety training. This required training involves both comprehension testing and actual performance of head count and evacuation procedures.

The Calvert City facility recognizes the necessity of proper training of all employees. All operators are trained in the basics of spill response. In the event of a release, the operators in the affected operating unit are the first responders. In most instances these individuals are capable of controlling and stopping the source of the release. The operators are also trained in the basic requirements to remediate a release site.

Other plant personnel are trained according to their job assignments. All personnel are trained in plant head count and emergency evacuation. These drills are briefed, debriefed, and all concerns are addressed in a critique session held immediately after the drill. Additionally, all major incidents are critiqued immediately after the event has been addressed properly. Documentation for these sessions is maintained in the Safety Department files, and any corrective actions are documented in Impact Enterprise.

This plant also has an off-site Technical Advisory Team. The **R**esponding to **E**mergencies & **A**ccidents for **C**hemicals in **T**ran**S**port (REACTS) team is comprised of technical and experienced personnel. Individuals on this team are equipped to provide technical advice for responding to off-site spills, leaks, or accidents that could effect the general population. A portion of their training is accomplished at Transportation Training Center/American Association of Railroads facility at Pueblo, Colorado.

Plant Alarm Systems Training

All employees are trained in the activation of the plant alarm systems through use of the emergency phone number 555 and the plant P.A. system. This provides the ability to notify and instruct employees during an emergency. The security guards will control access to the plant alarm system, and will follow the direction of the Shift Superintendent or Incident Commander on relaying information and alarms over this system. All employees and visitors are required to follow the instructions given over the notification system.

Hazardous Materials Training

All personnel are trained prior to working with hazardous materials or participating in emergency response activities and are given annual refresher training. Appropriate company personnel are trained in the following aspects of hazardous materials management:

Proper Handling
Proper Packaging
Transfer
Transport
Storage
First Aid/CPR
Personal Protection Equipment
Incipient Fire Fighting
Blood Borne Pathogens
Spill Clean-up
Hazard Recognition
Risk Evaluation
Decontamination Procedures
Incident Command System
Hazard Communication
HF Medical Treatment
Confined Space Procedures
Evacuation Procedures

Hazardous Communications Training

Personnel that are assigned to the Emergency Response Team are trained in the proper techniques required to respond to a variety of emergency situations including hazardous material spill or release. Team members are trained to the level of Hazardous Material Technician, which includes Incident Command. They have the knowledge and expertise to protect human health and safety, control and contain a spill or release, and clean up the hazardous material. They are also trained in structural and incipient fire response, medical emergency response and confined space rescue. Hazardous material (Hazmat) employees are those employees which load, unload, handle, prepare for transportation, are responsible for safety for transportation of hazmat materials, operate a vehicle used to transport hazardous materials, or repair and manufacturer hazardous packaging (HM-126F, 49 CFR 172, Part H).

Hazardous Materials Technician

All members of the Emergency Response Team are trained to a level of competency required for Hazardous Material Technicians. Hazardous Materials Technicians have received at least 24 hours training and have competency in the following areas:

- Basic hazard and risk assessment
- How to select and use proper personal protective equipment
- Understanding of basic hazardous materials terms
- How to perform control, containment
- And/or confinement operations within the capabilities of the resources and personal protective equipment available
- How to implement basic decontamination procedures
- Understand the relevant standard operating procedures and termination procedures
- How to implement the Emergency Response Plan,
- The classification, identification, and verification of known and unknown materials by using field survey equipment and instruments,
- Ability to function within an assigned role in the ICS, and
- Understand the basic chemical and toxicological terminology.

Hazardous Materials Specialist

The duties of the Hazardous Materials Specialist parallel those of the Hazardous Materials Technician. However, those duties require a more directed or specific knowledge of the specific hazard of a specific substance or substances to which they may be called upon to

respond. Hazardous Materials Specialists receive training equivalent to that of a Hazardous Materials Technician and have additional competency in the following areas:

- How to implement the local emergency response plan,
- Ability to classify, identify, and verify known and unknown materials,
- Use of advanced survey instruments and equipment,
- Familiarity with the local emergency response plan,
- In-depth understanding of hazard and risk assessment,
- Ability to perform specialized control, containment, and/or confinement operations within the capabilities of resources and personal protective equipment,
- Ability to determine and implement decontamination procedures,
- Ability to develop a site safety survey and control plan, and
- Understand chemical, radiological, and toxicological terminology and behavior.

Incident Commander (IC)

The Incident Commanders, listed in Annex 20 Table 2, are trained to a level of competency required for this role. The Incident Commander has received training equivalent to that of the Hazardous Materials Technicians and has received separate incident command training. Other members of plant management and members of the ERT have received training and are qualified to perform the duties of Incident Commander. They are not listed on Table 2 of Annex 20 because their primary responsibility during an incident is not that of IC.

Shelter-in-Place Training

All personnel and operators who must remain to secure plant operations during total evacuation of the plant are trained in shelter-in-place by supervisory personnel from that plant. Completion of this training has been entered into the operator's training records under PPE.

SPCC/BMP Training

SPCC/BMP training is conducted every year for all personnel who are normally in operating areas. This training covers the basics of release discovery, reporting, and corrective actions to be taken in the event of a release.

Exercises and Drills

The Calvert City facility performs exercises and drills for simulated plant emergencies, plant head count, plant evacuations and shelter in place, and area emergency coordination. Head count, shelter-in-place, evacuation, and emergency response team drills are conducted per the corporate Emergency Response Plan Standard.

Following are the minimum annual requirements for drills at the Calvert City Plant.

- At least two drills per year will be conducted that involve the ERT. Fire and hazardous material release scenarios must be covered during these drills. The drills may be multi-faceted, using combinations of scenarios.
- At least one drill will involve evacuation.

- At least one drill will involve shelter-in-place.
- At least one drill will involve a medical response as part of a fire or hazardous material scenario.
- At least one drill will include outside local emergency response services. Drills involving outside resources typically are limited to plant personnel who may be involved in off-site responses.
- Drill scenarios must be relevant to scenarios identified in PHAs and/or involve the site's identified top hazards.
- At least one drill must be conducted to involve the ERT - Confined Space Rescue.
- Drills should be conducted at different times including off-shifts and during shift changes to test the capabilities of the ERT using reduced manpower and/or during challenging time periods.

Table top drills are acceptable means of training, however they must be used only to practice for actual field drills. Table top drills alone do not meet the drill requirements listed above except for security drills where they are permissible. Security drills will be conducted as outlined in the site security plan.

In addition, drills the ERT will have bi-monthly meetings, at a minimum, covering a variety of topics. These meetings emphasize various aspects of emergency response in between drills and actual emergency situations. Topic examples are:

- Tabletop exercises regarding the tactical response scenarios.
- Incident command system
- Proper use of emergency PPE
- Decontamination methods
- Employee accountability during evacuations
- Other emergency response skills such as firefighting, rope rescue and emergency medical response

Documentation

All drills are critiqued by appropriate representatives of involved parties, documented, and filed in the Safety Department. The drill, results of the critique, and action items including corrections to hardware or mechanical deficiencies, updates to the emergency response plan, and enhancements to the training program are entered into the Impact Enterprise system for tracking purposes.

Training Matrix

Plant-wide training needs are reviewed on an annual basis and a training matrix is maintained by the Quality and Training Department.

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18	22 Dec 2017	Annual Review
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20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 13 Response Critique and Plan Review and Modification Process

Response Critique

This Integrated Contingency and Response Plan will be reviewed on an annual basis. Members of the Safety and Environmental Departments will document this review through the revision record in Annex 22 and make appropriate changes that improve and update this document. Periodic drills, tabletop exercises or other training associated with the ICRP may be conducted on a periodic basis. Changes to the ICRP will be made throughout the year based in these reviews and exercises.

Immediately following all scheduled exercises and all major incidents a critique and comment period will be held. All comments will be documented and corrective actions will be documented in Impact Enterprise for tracking by the Safety Department. A roster of attendees will be attached to the final critique and comment sheets. All corrective actions will be assigned to an individual for completion in a timely manner and their status reviewed monthly.

Plan Review and Revisions

Those individuals identified in Section I of this plan as Key Contacts for Plan Development and Maintenance, in conjunction with the Pollution Prevention Committee, are responsible for reviewing all proposed revisions to this plan. After review and acceptance of a proposed revision, the Integrated Contingency and Response Plan will be revised. Training required due to revisions to this plan will be conducted by the Safety and Quality Departments.

All revision records for the Integrated Contingency and Response Plan shall be maintained by the Health, Environmental and Safety Department.

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19	1 May 2018	Updated to include RCRA Closed Regulated Units
20	31 Dec 2018	Annual Review, updated Table 5 – Spill Kit Locations
21	20 Sept 2019	Updated Table 4 to add HF Neutralization Area

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Jay Fulton Manager of Safety and Health	Greg Watson Environmental Manager

Annex 14 Environmental Tables

TABLE 1
GENERAL INSPECTION SCHEDULE

EQUIPMENT	SCHEDULE	RESPONSIBLE PARTY
Communications		
Facility Alarm System		
Internal Voice Alarm System	Daily	Facility Guard
Internal Telephone Alarm System	Weekly	Facility Guard
Outside Communications Equipment		
CIMAP Radio Communications Equipment	Daily	Facility Guard
Facility Telephone System	Random	Routine Use
Cellular Telephone System	Random	Routine Use
Safety Equipment		
Personal Protective Equipment		
Acid Suits	After Use	User
Personal Respirators	Prior to Use	User
5-Minute Escape Bottles	Weekly	Areas
SCBAs	Monthly	Area Operations
Fire Suppression Systems		
Fire Extinguishers	Monthly	Area Operations
Fire Water System	Weekly	Area Operations
Safety Showers/Eye Wash Stations	Weekly/Monthly	Area Operations
Emergency Response Equipment		
Instruments		
Air Monitoring Equipment	Monthly	Instrument Department
4-Gas Meters	Monthly	Instrument Department
pH Meters and Paper	Prior to Use	Laboratory
Equipment		
Pumps, Trucks, etc.	Random	Routine Use
Security		
Fences and Signs	Daily	Facility Guards
Hazardous Waste Management Areas		
Less than 90 Days Container Storage Areas	Weekly	Area Owner
Hazardous Waste Storage Tanks	Daily	Incinerator Operators
Incinerator Equipment	Daily	Incinerator Operators
Incinerator Operating Parameters	Shift	Incinerator Operators
Instrument Calibrations		
Carbon Monoxide/Oxygen	Weekly	Instrument Department
Flow and Temperature Monitors	Weekly	Instrument Department
Automatic Waste Feed Cutoffs	Weekly/Monthly	Instrument Department
Waste Storage Tanks Weigh System	Annually	Instrument Department
Waste Analysis	Annually	HES
Incinerator Mechanical Equipment	Monthly/Annually	Maintenance
Closed Regulated RCRA Units	Monthly/Rain Event	Environmental Department

Table 2

Interior Inspection Procedures
for Tanks L-V-0119, L-V-0119A, L-V-0121, L-V-0229 & N-V-6103

Frequency

The interior of tanks L-V-0119, L-V-0119A, L-V-0121, L-V-0229, and N-V-6103 will be inspected when exterior inspections reveal severe corrosion or other signs of potential failure that cannot be diagnosed or corrected from the exterior of the tank. These tanks are inspected daily by operators in the area, and have a more detailed inspection every five years, or half of the projected life of the tank which ever is less.

Tank Preparation

Tanks L-V-0119, L-V-0119A, and N-V-6103

1. Drain tank of as much waste material as possible.
2. Drop the pressure in the tank and vent all the gases to the incinerator.
3. Rinse the tank with monomer recycle column bottoms.
4. Incinerate this rinseate and vent the tank to the incinerator once more.
5. Triple rinse the tank with water (1,500 gallons/rinse).
6. Drain rinseate to the wastewater treatment system

Tanks L-V-0121 and L-V-0229

1. Drain tank of as much waste material as possible.
2. Drop the pressure in the tank and vent all the gases to the incinerator.
3. Triple rinse the tank with water (500 gallons/rinse) (Optional).
4. Drain the rinseate to the wastewater treatment system.

Tank Entry

Confined space entry procedures are on file at the facility's Safety Department offices. These procedures should be followed when entry into tank L-V-0119, L-V-0119A, L-V-0121, L-V-0229, or N-V-6103 is necessary.

Table 3

OIL STORAGE AREAS SUBJECT TO SPCC REQUIREMENTS

EQUIPMENT LOCATION	EQUIPMENT TAG DESCRIPTION	CAPACITY (GAL)	MATERIAL STORED
Boiler Area	Fuel Oil Storage Tank (for Boilers) *	30,000	No. 2 Fuel Oil
Boiler Area	Diesel Fuel Tank (for Generator) *	550	Diesel Fuel
Boiler Area	Diesel Fuel Tank (locomotive) *	2,000	Diesel Fuel
Boiler Area	Lubrication Oil Tank (locomotive) *	200	Oil
Boiler Area	#7 RW Emergency Gen. w/Diesel Fuel Tank *	693	Diesel Fuel
Maintenance	Diesel Fuel Tank*	1,000	Diesel Fuel
Maintenance	Gasoline Fuel Tank*	1,000	Gasoline
K-98	AWD Diesel Fuel Tank (Generator)*	300	Diesel Fuel
Maintenance	Garage Drum Storage Area	55 Drums	Oils
Maintenance	Garage Waste Oil Storage Tank	1,500	Waste Oil
K-98	HF Neut Diesel Fuel Tank (for Generator)*	550	Diesel Fuel
AHF	Diesel Fuel Tank (Generator)*	550	Diesel Fuel
AHF	#1 RW Emergency Gen. w/Diesel Fuel Tank *	284	Diesel Fuel
Kynar Polymer	nPP Area Integrated Gen-Set Diesel Fuel Tank*	292	Diesel Fuel
Kynar Polymer	nPP Area Gen-Set Nurse Tank*	265	Diesel Fuel
Kynar Polymer	Firetrol Diesel Fuel Tank*	500	Diesel Fuel
Forane 134a	134a Area Integrated Gen-Set Diesel Fuel Tk *	500	Diesel Fuel
Kynar Monomer	Storeroom Drum Storage Area	55 Drums	Oils
Engineering	Engineering Storage Area (spare transformers)	500	Oils

* Tanks with built in secondary containment (double walled tanks)

All electrical transformers in the Calvert City, Kentucky facility are inspected quarterly by the Maintenance E&I Department. These inspections are documented and kept on file in the E&I Department.

Process compressors and air compressors that contain 55 gallons of oil or greater are operated by the various process areas whose operators inspect this equipment on a daily basis as part of their normal inspections. These inspections are not documented.

Table 4

FACILITY AREAS SUBJECT TO BMP REQUIREMENTS

EQUIPMENT LOCATION	EQUIPMENT TAG DESCRIPTION	MATERIAL STORED
Boiler Area	Antimony Tons Storage	Antimony Trichloride
Boiler Area	Decon Pad	N/A
Blend/HCl Area	Methyl Chloroform Tanks	Methyl Chloroform
Blend/HCl Area	TCE Tanks	TCE
Blend/HCl Area	DCM Sphere	Methylene Chloride
Blend/HCl Area	141b Tanks	141b
Blend/HCl Area	HCl Truck Loading Docks	HCl
Blend/HCl Area	HCl Tanks	HCl 36%
Blend/HCl Area	HCl Railcar Loading Docks	HCl
Blend/HCl Area	Forane Railcar Loading Docks	Foranes
Blend/HCl Area	Forane Truck Loading Dock	Foranes
Blend/HCl Area	Chlorine Railcar Unloading Dock	Chlorine
Blend/HCl Area	Drum Loading Area	Forane

Table 4

FACILITY AREAS SUBJECT TO BMP REQUIREMENTS

EQUIPMENT LOCATION	EQUIPMENT TAG DESCRIPTION	MATERIAL STORED
Blend/HCl Area	Caustic Tank @ K-71	NaOH 23%
Blend/HCl Area	Forane and HF Neutralization Areas	Wastewater
Blend/HCl Area	Waste Acid Hold Tanks	Wastewater
Blend/HCl Area	F-32 Storage Tanks	F-32
K-97 Area	HCl Absorption Structure	HCl
K-97 Area	HCl Shift Tanks	HCl
K-97 Area	HF Storage Tank	AHF
K-98 Area	Butylene Oxide Storage Tank	Butylene Oxide
K-98 Area	Distillation Structure	Process
K-98 Area	Reaction Structure	Process
K-98 Area	HCl Shift Tanks	HCl
K-98 Area	Methyl Chloroform Tank	Methyl Chloroform
K-98 Area	HF Tank	AHF
K-98 Area	AWD Feedwater Holding Tanks	Wastewater
K-98 Area	Drum Storage Area (old HF Platform)	Trans
K-98 Area	pH Control Caustic Tank	NaOH 23%
AHF Area	AHF Railcar Unloading Docks	AHF
AHF Area	AHF Storage Tanks	AHF
AHF Area	HF Scrubber System	HF
AHF Area	KOH Storage Tank	KOH 45%
AHF Area	KOH Unloading Area	KOH 45%
Kynar Polymer	Polymer Storage Tank	Kynar Polymer
Kynar Polymer	VF_2 Storage Tank	VF_2
Kynar Polymer	HCl Storage Tank	HCl 36%
Kynar Polymer	Caustic Storage Tank and Unloading Area	NaOH 23%
Kynar Polymer	Drum Unloading/Handling Area	DTBP/IPA
Kynar Polymer	HFP Truck Unloading and Storage Tank	HFP
Kynar Polymer	Refrigeration Area	Process
Forane 134a	Sulfite Storage Tank and Unloading Area	Na2SO3
Forane 134a	Caustic Storage Tank	NaOH
Forane 134a	Stormwater Tank	Water
Forane 134a	Product Storage Tanks	134a
Forane 134a	TCE Storage Tank	TCE
Forane 134a	Crude Holding Tank	133/134
Forane 134a	Waste HCl Tanks	HCl
Forane 134a	HCl Shift/Food Grade Tanks	HCl
Forane 134a	Process Area	Process
Forane 134a	Chlorine Storage Tank	Chlorine
Kynar Monomer	Hazardous Waste Storage Tanks	Hazardous Waste
Kynar Monomer	Tars Loading Area	Hazardous Waste
Kynar Monomer	Incinerator/TO Areas	Wastes
Kynar Monomer	Monomer Process Area	Process
Kynar Monomer	Caustic Storage Tanks	NaOH 23%
Kynar Monomer	Monomer Hold Tanks	VF_2

Table 4

FACILITY AREAS SUBJECT TO BMP REQUIREMENTS

EQUIPMENT LOCATION	EQUIPMENT TAG DESCRIPTION	MATERIAL STORED
Kynar Monomer	Monomer Crude Tanks	VF_2
Kynar Monomer	VF2 Trailer Loading Station	VF_2
Site Perimeter	Non Industrial Area Surface Water Transport	Storm Water Runoff

Table 5

Oil Spill Kits Locations

K-97 York Bldg & Low Temp. Refrig. Bldg.	K-98 York Building (2)
P&L North Loading Dock	134a Utility Building & Under Stairwell
Kynar Reaction (2)	Kynar Finishing Loading Dock
Kynar Air Compressor Building	Kynar Monomer
Ambulance Garage	Garage
Blue Barn at North End	Main Maintenance Shop
River Dock on Work Barge	Locomotive Fuel Tank
Boiler	Boiler Fuel Tank
Storeroom Loading Dock	East End - Northeast Laydown Yard
Chemical Spill Kits Locations	
K-98 York Building	134a Under Stairwell
River Dock on Work Barge	Logistics in AMS Building
Blue Barn at North End	

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20	31 Dec 2018	Annual Review
21	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 15. Forms

Crisis Communication Plan Inquiry Log Sheet
Preparation Checklist
Resource Requirements Checklist
Incinerator Weekly Instrument Inspection Form ENV-INC-2502g
Incinerator Monthly Instrument Inspection Form ENV-INC-2502h
Hazardous Waste Storage Tank Daily Readings Form ENV-INC-2502a
Incinerator Daily Inspections ENV-INC-2502e
RCRA Inspection Log – North Hazardous Waste Storage Area.....ENV-WST-0202b
RCRA Inspection Log – Kynar Laboratory.....ENV-LAB-5001b
RCRA Inspection Log – Forane Laboratory.....ENV-LAB-5001a
Chlor-Caustic Closure Site Inspection.....ENV-WST-0205a
HSWA Closures Inspection.....ENV-WST-0213a
Environmental Drainage Inspection AIMS-ADM-0081a
BMP/SPCC Quarterly Inspections – K-97 ..... AIMS-ADM-0081b
Spill Kit Quarterly Inspection – K-97 ..... AIMS-ADM-0081c
BMP/SPCC Quarterly Inspections – K-98 ..... AIMS-ADM-0081d
Spill Kit Quarterly Inspection – K-98 ..... AIMS-ADM-0081e
BMP/SPCC Quarterly Inspections – Utilities AIMS-ADM-0081f
Spill Kit Quarterly Inspection – Utilities AIMS-ADM-0081g
BMP/SPCC Quarterly Inspections – F-134a AIMS-ADM-0081h
Spill Kit Quarterly Inspection – F-134a AIMS-ADM-0081i
BMP/SPCC Quarterly Inspections – Storeroom AIMS-ADM-0081j
Spill Kit Quarterly Inspection – Storeroom AIMS-ADM-0081k
BMP/SPCC Quarterly Inspections – Maintenance AIMS-ADM-0081l
Spill Kit Quarterly Inspection – Maintenance AIMS-ADM-0081m
BMP/SPCC Quarterly Inspections – Monomer AIMS-ADM-0081n
Spill Kit Quarterly Inspection – Monomer AIMS-ADM-0081o
BMP/SPCC Quarterly Inspections – Polymer AIMS-ADM-0081p
Spill Kit Quarterly Inspection – Polymer AIMS-ADM-0081q
BMP/SPCC Quarterly Inspections – Incinerator AIMS-ADM-0081r
BMP/SPCC Quarterly Inspection – Boilers AIMS-ADM-0081t
Spill Kit Quarterly Inspections – Boilers AIMS-ADM-0081u
BMP/SPCC Quarterly Inspection – Logistics AIMS-ADM-0081v
Spill Kit Quarterly Inspections – Logistics AIMS-ADM-0081w
Spill Kit Quarterly Inspection – P&L AIMS-ADM-0081y

All forms contained in this Annex are examples only. The exact wording and format of these forms are subject to change. Such change does not constitute a revision or require notification to any agency.

CRISIS COMMUNICATION PLAN:
INQUIRY LOG SHEET

Caller Name: _____ Title (If Appropriate): _____

Check appropriate box and complete line below:

☐ TV/Radio Station ☐ Publication ☐: Government Official ☐ Resident ☐ Other

Further details (Station name, Resident address etc.):

_____

_____

_____

Phone number: _____ Date: _____ Time of Call: _____am/pm

INFORMATION REQUESTED

Check all appropriate boxes

☐ Question ☐ Press Release ☐Interview ☐ Statement ☐ Other

Specify Question (s) From Caller:

_____

_____

_____

INFORMATION SUPPLIED

☐Copy of Press Release ☐Read statement over phone

☐Faxed Information to #_____ ☐Forward To:_____

☐ Other (Please explain below)

_____

_____

_____

Arkema Contact Name: _____ Date: _____ Time: _____ am/pm

FOLLOW-UP REPORT

Arkema Contact Name: _____ Date: _____ Time: _____ am/pm

Additional Information/Material Supplied:

Preparation Check List
What to do now, before a crisis occurs

Update on: 16 December 2014

Person Responsible:

- ☐ Setup a "Crisis Communications Team" at the plant consisting of the Plant Manager and the plant Core Team plus the Emergency Coordinator(s) and any other appropriate staff members. — Plant Manager
- ☐ Designate back-ups for committee members. — Each Manager
- ☐ Designate a single spokesperson. See Annex 20, Table 3 — Plant Manager
- ☐ Set up a simple approval process for communication documents, including the Plant Manager, Corporate and a Law Department representative. — HES Manager
- ☐ Determine and rank in order of preference on-site and off-site command center media center locations. — HES Manager
- ☐ Arrange for crisis communications training or refresher courses. — Quality and Training Manager
- ☐ Train Security Officers and plant personnel on how to deal with an emergency, instructing them to forward all calls to the Plant Manager or his or her designee. — Sr. Safety Supervisor
- ☐ Establish and disseminate a policy on dealing with reporters and photographers during an emergency. — Plant Manager
- ☐ Update monthly home telephone number lists for all Arkema personnel. — Asst. HR Manager

What to do now, when an emergency occurs

For a Crisis at the Plant:	**Person Responsible:**
☐ Shift Superintendent/Team Members to assess situation, activate Emergency Response plan, sound alarm to notify, notify Plant Manager.	Shift Superintendent Team Members
☐ Establish command center and separate media center.	*Incident Commander*
☐ Arrange for security, if necessary.	Sr. Safety Supervisor
☐ Gather facts, contact Corporate, Manufacturing Director	Plant Manager
☐ Prepare a preliminary statement for the press.	Public Information Officer
☐ Alert guards to log calls and forward to Plant Manager.	Sr. Safety Supervisor
☐ Notify injured workers' families.	HR and Purchasing Manager
☐ Brief reporters and return press calls; inform reporters of briefing schedules.	*Public Information Officer*
☐ Distribute media kits as necessary.	*Public Information Officer*
☐ Notify employees, remind them to forward all media inquiries to the Plant Manager, urge them to continue with business if possible.	*Each Manager*
☐ Respond to calls from concerned neighbors and public officials.	*Public Information Officer*
☐ Get assistance from headquarters, if necessary.	Plant Manager
☐ Notify town, county and state officials.	*HES Department*
☐ Handle on-going press communications in a timely manner.	*Public Information Officer*

Plant Manager/Headquarters

In Case of Emergency at Customer Plant:

- ☐ Plant Manager takes media and external phone calls and responds using prepared factual statement. Refer further questions to affected plant. — Public Information Officer
- ☐ Notify Corporate and Manufacturing Director. — Plant Manager

In case of After-Hours Emergency:

- ☐ Notify person acting as Emergency Coordinator; take phone messages and arrange for security while awaiting committee's arrival. — Incident Commander
- ☐ Notify crisis communications team and back-ups. — Guard (as directed)

In Case of an Off-Site Emergency:

- ☐ Contact local officials and transporter to assess situation and provide advice. — HES Department
- ☐ Brief Plant Manager, who will serve as media contact while REACTS is in transit to site. — HES Manager
- ☐ If Plant Manager travels to site, designate appropriate plant spokesperson. — Plant Manager
- ☐ Notify Dan Katz and Manufacturing Director. — Plant Manager
- ☐ Act as spokesperson for Arkema at the scene of the emergency. — Plant Manager
- ☐ Gather copies of all reports and statements by carrier and transmit them to Plant Manager. — Public Information Officer
- ☐ Handle ongoing press communications. — Public Information Officer

After the Crisis:
Follow-up Checklist

		Person Responsible:
☐	Assess current state of crisis and its potential to resurface.	Incident Commander & Staff
☐	Continue to respond to media inquiries.	Public Information Officer
☐	Monitor local media coverage, contact Corporate to arrange for national media monitoring.	Public Information Officer
☐	Distribute clipping and videotapes to members of the crisis communications team and to headquarters.	Public Information Officer
☐	Keep notes on effectiveness of communications plan.	Public Information Officer
☐	Follow up with press, if appropriate.	Public Information Officer
☐	Follow up with regulators, officials, as needed.	HES Manager
☐	Review entire incident with Corporate, Manufacturing Director, and headquarter crisis communication committee.	Plant Manager
☐	Assess lingering effects of crisis and determine next steps.	HR and Purchasing Manager
☐	Coordinate with headquarters to notify customers.	Plant Manager
☐	Thanks and recognition of employee efforts.	Plant Manager

RESOURCE REQUIREMENTS CHECKLIST

Operating Essentials Where Provided Contact Special Instructions

- ☐ Back-up electricity _____
- ☐ Temporary lighting _____
- ☐ Telephone (cellular, other) _____
- ☐ Two-way radios _____
- ☐ Fax machines, computers _____
- ☐ Restrooms _____
- ☐ Temporary office buildings _____
- ☐ Food and drink _____
- ☐ Meeting rooms and work place _____
- ☐ Printer, copy machines, paper _____
- ☐ TV, tape recorders _____
- ☐ Emergency transportation _____
- ☐ Off-site lodging and related accommodations _____

BASIC INFORMATION Where Provided Contact Special Instructions

- ☐ Site maps, facts, photos _____
- ☐ Product facts, sample products _____
- ☐ MSDS sheets, dispersion modeling info _____
- ☐ Personnel bios _____
- ☐ Quick call lists _____
- ☐ Hotline _____

SITE SECURITY Where Provided Contact Special Instructions

- ☐ Credentials _____
- ☐ Press/civilian ID passes _____
- ☐ Contract security _____
- ☐ Checklist, rosters _____
- ☐ Safety zone designations _____

MEDIA MANAGEMENT Where Provided Contact Special Instructions

- ☐ Meeting rooms and work space _____
- ☐ Press conference facilities _____
- ☐ Telephones, fax machines _____
- ☐ Restrooms _____
- ☐ Typewriters, word processors _____
- ☐ Press packets _____
- ☐ Photo opportunities, camera angles _____
- ☐ Food and drink _____

POLICY GUIDELINES Where Provided Contact Special Instructions

- ☐ Media communications _____
- ☐ Employee communications _____
- ☐ Death and Injury notification _____
- ☐ Responsible Care _____

COMMUNITY CRISIS ASSISTANCE Where Provided Contact Special Instructions

- ☐ Accommodations _____
- ☐ Materials, supplies _____
- ☐ Crisis counseling _____
- ☐ Insurance claims processing _____
- ☐ Hotline

Document Name: Integrated Contingency and Response Plan			
Document No.: AIMS-ADM-0081-16	Page: 1 of 4	Revision No.: 20	Issue/revision/review date: 10 December 2019

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18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 16 Acronyms and Definitions

Acronyms

ACC - American Chemistry Council

AED - Automated External Defibrillator

ASME - American Society of Mechanical Engineers

CAS - Chemical Abstract Service

CDC - Center for Disease Control

CFR - Code of Federal Regulations

CIMAP - Calvert Industrial Mutual Aid Program

CPR - Cardiopulmonary Resuscitation

DHS – Department of Homeland Security

DOT - Department of Transportation

EMT - Emergency Medical Technician

EPA – Environmental Protection Agency

ERT - Emergency Response Team

FEMA - Federal Emergency Management Agency

FRZ - Freezing Point

IC - Incident Commander

ICRP - Integrated Contingency and Response Plan

ICS - Incident Command System

IDLH - Immediately Dangerous to Life and Health

KAR - Kentucky Administrative Regulations

KPDES - Kentucky Pollutant Discharge Elimination System

LEL - Lower Explosive Limit
LEPC - Local Emergency Planning Commission

MARSEC – Marine Security

MOC - Management of Change

MSDS - Material Safety Data Sheet

NBIS – The National Board of Boiler and Pressure Vessel Inspectors

OSHA - Occupational Safety and Health Administration

NFPA - National Fire Protection Association

NIIMS - National Interagency Incident Management System

PEL - Permissible Exposure Limit

PIO - Public Information Officer

PMAA - Paducah Mutual Assistance Association

PSM - Process Safety Management

RCRA - Resource Conservation and Recovery Act

REACTS - Responding to Emergencies and Accidents for Chemicals in Transport

RMP - Risk Management Plan

RQ - Reportable Quantity

SCBA - Self Contained Breathing Apparatus

TCLP - Toxicity Characteristic Leaching Procedure

TLV - Threshold Limit Value

TVA - Tennessee Valley Authority

TWA - Time Weighted Average

UEL - Upper Explosive Limit

USCG – United States Coast Guard

VP - Vapor Pressure

Definitions

Environment means the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Fishery Conservation and Management Act of 1976, and any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States. [40 CFR 302.3]

Environmental Engineer refers to any member of the Environmental Department, except the Secretary, whatever the actual title.

Highly Hazardous Chemical means chemicals specifically listed as highly hazardous. At the Calvert City Plant this includes anhydrous hydrochloric acid (AHCl), anhydrous hydrofluoric acid (AHF), chlorine, 1,1-dichloro-1-fluoroethane (141b), 1,1-difluoro-1-chloroethane (142b), 1,1-difluoroethylene (VF_2), diisopropyl peroxydicarbonate (IPP), ditertiary butyl peroxide (DTBP), ethyl acetate, hydrogen chloride, hydrogen fluoride, isobutane, isopropanol, reactor tars, and 1,1,1-trichloroethane (methyl chloroform).

Initial Responder means the individual who first discovers the incident.

Permissible Exposure Limit or PEL means an exposure limit established by OSHA. This may be a time weighted average (TWA) limit or a ceiling limit.

Shelter-in-Place means remaining inside and taking protective measures during adverse conditions. Protective measures may include closing all windows, shutting off air conditioning, covering all access to outside air flow, donning self contained breathing apparatus, and remaining inside until notified of outside/upset conditions returning to a safe condition.

Tank System means hazardous waste storage or treatment tank and its ancillary equipment and containing system [40 CFR § 260.10].

Threshold Limit Value or TLV are time weighted average concentrations of airborne substances that it is believed that workers may be repeatedly exposed to day after day without adverse effects.

ARKEMA
INNOVATIVE CHEMISTRY

Document Name: Integrated Contingency and Response Plan			
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Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 17 CERTIFICATIONS

I certify that this Integrated Contingency and Response Plan was prepared under my direction in accordance with a system designed to assure that qualified personnel properly prepare and analyze the Plan. Based upon my inquiry of the people who manage the system, and the people directly responsible for preparing this Plan, it meets the requirements of Local, State and Federal regulations pertaining to such a Plan. These regulations include the provisions of 10 CFR § Part 19, 10 CFR § Part 20, 29 CFR § 1910.38(a), 29 CFR § 1910.106, 29 CFR § 1910.119, 33 CFR § 153, 40 CFR § 112, § 116, § 125, and 401 KAR Chapter 5. I attest that this Plan reflects the ongoing practices of the Calvert City facility.

SIGNATURE: _____
Jeff Hall
Plant Manager

I hereby certify that I have examined the facility, am familiar with the provisions of 29 CFR § 1910.106, 33 CFR § 153, 40 CFR § 112, § 116, § 125, and 401 KAR Chapter 5, and attest that this Integrated Contingency and Response Plan meets these requirements, has been prepared in accordance with good engineering practices, and is adequate. It is my belief that this plan is effective for oil pollution prevention.

SIGNATURE: _____

NAME: _____

(Seal)

Date _____ Registration No. _____ State _____

The revisions made to this ICRP are not extensive in nature and do not require recertification of the plan by a licensed professional engineer.

Monty Schell Jeremy Rowe 10 December 2019
Monty Schell Jeremy Rowe Review Date

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Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 18 Regulatory Compliance Crosschecks Matrices

Miscellaneous Hazardous Waste Requirements

The Arkema Calvert City plant employs hazard prevention procedures as described in Part G, Integrated Contingency and Response Plan (ICRP). Elements of "Part F Procedures to Prevent Hazards" are identified below along with their location in the ICRP.

F-1 SECURITY

F-1a Waiver

The Arkema Calvert City plant is designed, constructed and maintained in accordance with good engineering practices and procedures to minimize public access to the active areas of the site. Arkema does not request a waiver of the security requirements.

F-1b Security Procedures and Equipment: 401 KAR 34:020 Section 5

Security measures and equipment are outlined in the ICRP Annex 7. This includes a description of:

F-1b (1) 24-Hour Surveillance System
F-1b (2) Barrier and Means to Control Entry
F-1b (3) Warning Signs

This plan does not address the facility security plan requirements for the various threat levels established by the Department of Homeland Security, and the United States Coast Guard. The facility security plan is considered Security Sensitive Information is not available to the public.

F-2 INSPECTION SCHEDULE: 401 KAR 34:020 Section 6(1) and 6(2)

F-2a General Inspection Requirements

The general inspection schedule for the Arkema Calvert City plant is shown on Table 5 of Annex 14. A more detailed description of all inspections is included in Annex 7.

F-2a (1) Types of Problems

A description of the types of problems that are looked for during inspections is included in Annex 7.

F-2a (2) Frequency of Inspection

The frequency of inspections is included in the descriptions in Annex 7.

F-2b Specific Process Inspection Requirements

F-2b (1) Container Inspection: 401 KAR 34:180 Section 5

Container inspections are described in Annex 7.

F-2b (2) Tank System Inspection: 401 KAR 34:190 Section 6

Tank system inspections are described in Annex 7.

F-2b (3) Waste Piles Inspection: 401 KAR 34:210 Section 5

Waste piles are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-2b (4) Surface Impoundment Inspection: 401 KAR 34:200 Section 4

Surface impoundments are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-2b (5) Incinerator Inspection: 401 KAR 34:240 Section 7

A description of the incinerator inspections can be found in Annex 7.

F-2b (6) Landfill Inspection: 401 KAR 34:230 Section 4

Landfills are not actively used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-2b (7) Land Treatment Inspection: 401 KAR 34:220 Section 4

Land treatment units are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-2c Remedial Action: 401 KAR 34:020 Section 6(3)

If an inspection reveals a problem at any of the hazardous waste management areas, it is recorded in the inspection log along with the corrective action needed to rectify the problem. Problems resulting from a release, requiring prompt action to prevent a release or are the source of potential non-compliance are corrected immediately. Problems that do not require immediate corrective action are addressed as part of routine maintenance.

F-2d Inspection Log

Sample copies of the forms used during routine inspection of the hazardous waste management areas at the Arkema Calvert City plant are included in Annex 15. Completed inspection logs are kept on file as directed by the record retention system indicated on the Index of AIMS Forms document, or as required by state and federal regulations.

F-3 WAIVER OF PREPAREDNESS AND PREVENTION REQUIREMENTS

The Arkema City plant is designed, constructed and maintained in accordance with good engineering practices and procedures that minimize the probability of fire, explosion and release to the environment. Arkema does not request a waiver of the preparedness and prevention requirements.

F-3a Equipment Requirements: 401 KAR 34:030 Section 3

The following equipment elements are addressed in the locations listed below:

F-3a (1)	Internal Communications	Annex 10
F-3a (2)	External Communications	Annex 11
F-3a (3)	Emergency Equipment	Annexes 7 and 10
F-3a (4)	Water for Fire Control	Annex 7

F-3b Aisle Space Requirements: 401 KAR 34:030 Section 6

Aisle space is addressed in Annex 7.

F-4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT: 401 KAR 38:090 Section 2(8)

Preventive procedures, structures, and equipment are addressed in the following locations:

F-4a	Unloading Operations	Annex 7
F-4b	Runoff	Annex 7
F-4c	Water Supplies	Annex 7
F-4d	Equipment and Power Failure	Annex 7
F-4e	Personal Protective Equipment	Annexes 1 and 21

F-4f Atmosphere

Prevention of releases to the atmosphere is maintained by the tanks' pressure vessel construction. Maintaining a normal operating pressure much lower than the design and control pressures reduces the venting of these tanks.

F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

A description of the following items can be found in Annex 1:

F-5a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes.
F-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste.

F-5c Management of Ignitable or Reactive Wastes in Containers: 401 KAR 34:180 Section 7.

F-5d Management of Incompatible Waste in Containers.

F-5e Management of Ignitable or Reactive Wastes in Tanks: 401 KAR 34:190 Section 9.

F-5f Incompatible Wastes in Tanks: 401 KAR 34:190 Section 10.

F-5g Ignitable/Reactive Waste for Waste Piles: 401 KAR 34:210 Section 6

Waste piles are not used at the Arkema City plant for the treatment or storage of hazardous wastes.

F-5h Incompatible Wastes in Waste Piles: 401 KAR 34:210 Section 7

Waste piles are not used at the Arkema City plant for the treatment or storage of hazardous wastes.

F-5i Ignitable or Reactive Wastes in Surface Impoundments: 401 KAR 34:200 Section 7

Surface impoundments are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5j Incompatible Wastes in Surface Impoundments: 401 KAR 34:200 Section 8

Surface impoundments are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5k Ignitable or Reactive Waste in Landfills: 401 KAR 34:230 Section 7

Landfills are not actively used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5l Incompatible Wastes in Landfills: 401 KAR 34:230 Section 8

Landfills are not actively used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5m Liquid Wastes in Landfills: 401 KAR 34:230 Section 9

Landfills are not actively used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5n Special Requirements for Container Disposal in Landfills: 401 KAR 34:230 Sections 10

Landfills are not actively used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5o Ignitable or Reactive Wastes in Land Treatment Units: 401 KAR 34:220 Section 9

Land treatment units are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

F-5p Incompatible Waste in Land Treatment Units: 401 KAR 34:220 Section 10

Land treatment units are not used at the Arkema Calvert City plant for the treatment or storage of hazardous waste.

SPCC Regulatory Cross-Reference

Regulatory Requirement	Location in ICRP
PART 112 – OIL POLLUTION PREVENTION	
SUBPART A – Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils	
112.3 Requirements to Prepare and Implement a Spill Prevention, Control, and Countermeasure Plan	
112.3(a) Amend plan to ensure compliance on or before April 17, 2003 and implement plan as soon as possible, but not later than August 18, 2003.	The ICRP revisions are effective 14 April 2003. Any physical changes to facilities will be completed by 18 August 2003.
112.3(d) A PE must review and certify a Plan for it to be effective **(1)(iii)** Prepared in accordance with good engineering practice **(iv)** Procedures for required inspections and testing established **(v)** Plan is adequate.	The Plan certification in Annex 17 has been modified to include these new requirements.
112.3(e)(1) Maintain a complete copy of the Plan at the facility.	The Plan is maintained at five locations throughout the plant. See *Index of Controlled Documents* for specific locations.
112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by Owners or Operators	
112.5(a) Amend Plan when there is a change in the facility.	Management of Change program ensures changes are reviewed, approved and appropriate actions (plan amendments) are completed. Annex 7 requires the plan to be reviewed every year. This is considered to be equivalent.
112.5(b) Complete review and evaluation of the Plan at least once every 5 years.	Annex 7 requires a complete review and evaluation every five years.
112.5(b) Document the review and evaluation, and sign a statement as to whether you will amend the Plan.	This review is documented in the Annex 17 certifications.
112.5(c) Have PE certify any technical amendment to the Plan.	Technical amendments are required to be certified by a PE in Annex 7.
112.7 General Requirements for Spill Prevention, Control, and Countermeasure Plans	
112.7 Plan must have full approval of management at a level of authority to commit the necessary resources to fully implement the Plan.	The Plant Manager approves all revisions to the ICRP.
112.7 Supplement the Plan with a section cross-referencing the location of requirements.	Annex 18 contains this cross-reference.
112.7(a)(1) Include a discussion of your facilities conformance with the requirements listed in this part	Annex 7 "Accidental Release Prevention Program" covers this topic.
112.7(a)(2) Where your plan does not conform to the applicable requirements ... you must state the reason for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection.	Annex 7 discusses three exceptions to conforming to these requirements.

Regulatory Requirement	Location in ICRP
112.7(a)(3) Describe the physical layout of the facility including a facility diagram with the location and contents of each container, and include all transfer stations and connecting pipes.	Annex 9 contains a description of the physical layout of the plant and Annex 6 contains plant maps showing the location and contents of tanks for SPCC, significant aspects, and other chemicals of interest.
112.7(a)(3)(i) The type of oil in each container and its storage capacity	Table 3 of Annex 14 contains this information.
112.7(a)(3)(ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.)	Annex 7 "Unloading and Loading Operations" covers this topic.
112.7(a)(3)(iii) Discharge or drainage controls ... and procedures for the control of discharge.	Annex 7 "Drainage of Contained Areas" and area specific procedures contain this information.
112.7(a)(3)(iv) Countermeasures for discharge discovery, response, and cleanup	Annex 7 "Spill Control Equipment" covers this topic.
112.7(a)(3)(v) Methods of disposal of recovered materials	Annex 7 "Spill Control Equipment" covers this topic.
112.7(a)(3)(vi) Contact list and phone numbers.	Annex 11 contains *Incident Reporting and Investigation Procedure* that has individuals to be notified and phone numbers.
112.7(a)(4) Provide information and procedures to enable a person reporting a discharge ...	Annex 11 contains the required procedures.
112.7(a)(5) Organize the Plan in a way that will make then readily usable.	The ICRP organization was revised during revision 4 to improve the functionality of the Plan.
112.7(b) Include a prediction of the direction, flow rate, and total quantity of oil which could be discharged as a result of each type of major equipment failure.	All oil tanks are either double walled, or provided with secondary containment. Flow predictions for are given in Annex 6.
112.7(c)(1) Provide appropriate containment: dikes, curbing, culverting, weirs and booms, spill ponds, retention ponds, or sorbent material.	The plant is equipped with appropriate containment.
112.7(e) Conduct inspections and tests required in accordance with written procedures. Keep records of inspections and tests, signed by the appropriate supervisor or inspector. Keep these records for three years.	Annex 7 "Visual Inspections" covers this topic.
112.7(f)(1) Train oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC Plan.	Training is covered in Annex 12.
112.7(f)(2) Designate a person at each facility who is accountable for discharge prevention and who reports to facility management.	Annex 7 "Pollution Prevention Committee" covers this topic.
112.7(f)(3) Schedule and conduct discharge prevention briefing for your oil handling personnel at least once a year.	Training is covered in Annex 12.
112.7(g)(1) Fully fence each facility handling oil.	Annex 7, "Security" covers this topic.
112.7(g)(2) Master flow and drain valves ... have adequate security measures so they remain closed.	The entire operating plant is fenced (see Annex 7 "Security") and fully trained operators.

Regulatory Requirement	Location in ICRP
112.7(g)(3) Lock the starter control on each oil pump in the "off" position ...	
112.7(g)(4) Securely cap or blank-flange loading/unloading connections when not in use.	Logistic Department procedures require oil terminal connections to be appropriately closed.
112.7(g)(5) Provide facility lighting commensurate with ...	The facility has adequate lighting.
112.7(h)(2) Provide interlock warning light or barrier system, warning signs, wheel chocks, or vehicle brake interlock system to prevent vehicles from departing before disconnection.	Annex 7 "Unloading and Loading Operations" covers this topic.
112.7(i) Repair, alteration, reconstruction, or change of service ... evaluate for failure due to brittle fracture ... take appropriate action.	Annex 7 "Certification of Major Repairs" covers this topic.
SUBPART B – Requirements for Petroleum Oils and Non-Petroleum Oils, except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (including Oils from Seed, Nuts, Fruits, and Kernels)	
112.8 Spill Prevention, Control, and Countermeasure Plan Requirements for Onshore Facilities (Excluding Production Facilities)	
112.8(a) Comply with 112.7	The ICRP complies with 112.7.
112.8(b)(1) Restrain drainage from diked storage areas by valves. Pumps or ejectors must manually activate and inspect prior to discharge.	This is covered in Annex 7 "Drainage of Contained Areas".
112.8(b)(2) Use manual open and close design valves ... you may not use flapper type valves.	Flapper type valves are not used for secondary containment in the plant.
112.8(b)(3) Design drainage systems from undiked areas to flow to catchment basins designed to retain oil. You must not locate catchment basins in areas subject to periodic flooding.	Annex 7 "Unloading and Loading Operations" covers this topic.
112.8(c)(1) Materials and construction are compatible with the material.	This is covered in Annex 7; page 4 "Materials Compatibility"
112.8(c)(2) Secondary containment for largest tank and rainfall.	Oil storage tanks are equipped with adequate secondary containment.
112.8(c)(3)(i) Keep drain valve sealed closed.	This is covered in Annex 7 "Drainage of Contained Areas".
112.8(c)(3)(ii) Inspect rainwater prior to discharge.	This is covered in Annex 7 "Drainage of Contained Areas".
112.8(c)(3)(iii) Open drain valve and reseal it following drainage under responsible supervision	This is covered in Annex 7 "Drainage of Contained Areas".
112.8(c)(3)(iv) Keep adequate records of all rainwater drainage.	This is covered in Annex 7 "Drainage of Contained Areas".
112.8(c)(6) Test each aboveground container for integrity on a regular schedule. ... You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another non-destructive shell testing.	Annex 7 "Preventive Maintenance" covers this topic.

Regulatory Requirement	Location in ICRP
112.8(c)(8) You must provide one of the following: **(i)** high liquid level alarms, **(ii)** high liquid level pump cut-off, **(iii)** direct audible or code signal, **(iv)** fast response system for liquid level	Annex 7 "Unloading and Loading Operations", "Preventive Maintenance", and "Integrity Testing of Storage Tank Systems" covers this topic.
112.8(c)(8)(v) Regular test sensing devices to ensure proper operation	Annex 7 "Preventive Maintenance" covers this topic
112.89(c)(9) Observe effluent treatment facilities frequently enough to detect possible system upsets	Annex 7 "Visual Inspections" covers this topic
112.8(c)(10) Promptly correct visible discharges from containers ... promptly remove any accumulations of oil in diked areas.	Annex 7 "Good Housekeeping" covers this topic.
112.8(d)(1) Provide buried piping with a protective wrapping and coating, and cathodic protection. If buried line is exposed for any reason, you must carefully inspect it for deterioration. ... You must undertake additional examination and corrective action as appropriate.	The facility does not have any buried piping subject to this regulation.
112.8(d)(2) Cap or blank flange terminal connection at the transfer point and mark it as to origin when piping is not in service.	Logistic Department procedures require oil terminal connections to be appropriately closed.
112.8(d)(3) Properly design pipe supports ...	Pipe supports are properly designed.
112.8(d)(4) Regularly inspect all aboveground valves, piping ...	Annex 7 "Visual Inspections" covers this topic
112.8(d)(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping ...	Signs are posted at plant entrances warning vehicles of aboveground piping located throughout the facility.

BMP Plan Regulatory Cross-Reference

Regulatory Requirement	Location in ICRP
KPDES PERMIT KY0003603 PART V	
SECTION A 1 – Applicability	
These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.01-010 (35).	The facility areas subject to the BMP Plan requirements are listed in Table 4, Annex 14.
Section A 2 – BMP Plan	
The permittee shall develop and implement a Best Management Practices (BMP) Plan consistent with 40 CFR 122.44 (k).	The Plan has been developed and has been implemented. The Plan is included within the ICRP.
Section A 3 - Implementation	
For permit renewals the plan in effect at the time of permit reissuance shall remain in effect.	The ICRP was in effect at the time of the permit renewal and remains in effect.

Regulatory Requirement	Location in ICRP
Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be submitted to the Division of Water and implemented as soon as possible.	The review and modification process for the ICRP is detailed in Annex 13. Modifications that result from ineffectiveness or changes to the facility will be submitted to the Division of Water.
Section A 4 – General Requirements	
The BMP plan shall: a. Be documented in narrative form, and shall include any necessary plot plan, drawings, or maps.	The ICRP is in narrative form with maps and drawings. See Annex 6.
b. Establish specific objectives for the control of toxic and hazardous pollutants. (1) Each facility component or system shall be examined for it's potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.	***Annex 7 "Emergency Preparedness and Prevention Plan" addresses this requirement***
(2) Where experience indicates a reasonable potential for equipment failure, (e.g., a tank overflow or leakage), natural condition (e.g, precipitation) or other circumstances which could result in a release of "BMP pollutants," the plan should include a prediction of the direction, rate of flow and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.	Where there is a reasonable potential for an event that could result in a release of "BMP pollutants", secondary containment is provided to control the release. A map of the plant is included in Annex 6 that shows the surface run-off and the general direction that it goes.
c. Establish specific Best Management Practices to meet the objectives identified under paragraph b of this section, addressing each component or system capable of causing a release of "BMP pollutants."	The BMPs that were contained in the "NPDES Best Management Practices Guidance Document" were used to meet this requirement.
d. Include any special conditions established in part b of this section.	None were established.
e. Be reviewed by plant engineering staff and the plant manager.	Any changes made to the ICRP are communicated to the plant staff by the use of the MOC process. Once any changes are discussed, approved and finalized, the plant manager signs each change.
Section A – 5 Specific Requirements	
The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document," and shall include the following baseline BMPs as a minimum. a. BMP Committee	Annex 7 "Pollution Prevention Committee" covers this topic.
b. Reporting of BMP Incidents	Annex 11 contains *Incident Reporting and Investigation Procedure*
c. Risk Identification and Assessment	Annex 4 & Annex 7 covers this topic.
d. Employee Training	Training is covered in Annex 12.

Regulatory Requirement	Location in ICRP
e. Inspections and Records	Annex 14 covers this topic.
f. Preventive Maintenance	Annex 7 "Preventive Maintenance" covers this topic
g. Good Housekeeping	Annex 7 "Good Housekeeping" covers this topic.
h. Materials Compatibility	This is covered in Annex 7; "Materials Compatibility"
i. Security	Annex 7, "Security" covers this topic.
j. Materials Inventory	Table 4, Annex 14
Section A 6 - SPCC Plans	
The BMP plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Act and 40 CFR Part 151, and may incorporate any part of such plans into the BMP plan by reference.	The BMP plan and the SPCC plan are both included in the ICRP.
Section A 7 – Hazardous Waste Management	
The permittee shall assure the proper management of solid and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.	The hazardous waste requirements are found in Annex 1, Annex 7, Annex 9, Annex 10, Annex 11, Annex 14, Annex 15, & Annex 18
Section A 8 - Documentation	
The permittee shall maintain a description of the BMP plan at the facility and shall make the plan available upon request to NREPC personnel. Initial copies and modifications thereof shall be sent to the addresses in the permit when required by Section A 3.	A paper copy of the ICRP is maintained at the plant and would be available to NREPC personnel upon request. Copies will be submitted when needed.
Section A 9 – BMP Plan Modification	
The permittee shall amend the BMP plan whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in the release of "BMP pollutants."	The review and modification process for the ICRP is detailed in Annex 13.
Section A 10 – Modification for Ineffectiveness	
If the BMP plan proves to be ineffective in achieving the general objective of preventing the release of "BMP pollutants," then the specific objectives and requirements under paragraphs b and c of Section A 4, the permit, and/or the BMP plan shall be subject to modification to incorporate revised BMP requirements. If at any time following the issuance of this permit the BMP plan is found to be inadequate pursuant to a state of federal site inspection or plan review, the plan shall be modified to incorporate such changes necessary to resolve the concerns.	The review and modification process for the ICRP is detailed in Annex 13.
Section B – Periodically Discharged Wastewaters Not Specifically Covered By Effluent Conditions	

Regulatory Requirement	Location in ICRP
The permittee shall include in this BMP plan procedures and controls necessary for the handling of periodically discharged wastewaters such as intake screen backwash, meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, etc.	Periodically discharged wastewaters were taken into account during the initial development of the BMP plan.

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18	22 Dec 2017	Annual Review
19	31 Dec 2018	Annual Review
20	10 December 2019	Annual Review

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 19 Calvert Industrial Mutual Aid Program

Arkema Inc. is a member of the Calvert Industrial Mutual Aid Program (CIMAP). CIMAP is an organization composed of industrial companies operating in the Calvert City, Kentucky industrial complex.

> The purpose of the CIMAP is to establish a plan of cooperative action whereby members will assist another member company involved in an emergency, which is beyond the member company's ability to control. Such aid or assistance will be made available upon request of the affected member, and unless requested, other members will not respond to the emergency. The purpose is extended to include facilitating communication and cooperation with local civic agencies to provide assistance to CIMAP members and the public.

Information on CIMAP is on the internet at www.cimapky.com .This site contains the current charter, the incident coordinator program, member data sheets, radio call list, and other information on CIMAP. The contents of this site are controlled and maintained by CIMAP, and is the most up-to-date information available.

CIMAP Staging Areas

There are two staging areas in the event of a CIMAP response to Arkema. They are the West Gate and Highway 1523, and the East Gate outside parking area. In the event of a CIMAP response, and ERT member will be present at the staging area to coordinate with all CIMAP responders. At no time will any CIMAP responding team be allowed into the facility to assist without an Arkema ERT member attached to the responding team, and at the directions of the Arkema Incident Commander.

ARKEMA
INNOVATIVE CHEMISTRY

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22	6 March 2019	Removed Shane Adams from Incident Command, Table 2
23	15 April 2019	Updates to Table 1 and Table 2
24	10 December 2019	Update of Table 1 to reflect current ERT membership

Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 20 Calvert City Emergency Response Assignments, Contact Information

This annex contains emergency response assignments for the Emergency Response Team (ERT), Incident Commanders (IC), Public Information Officers (PIO), Head Count Officers, and Emergency Medical Responder (EMR) Personnel. Contact phone numbers and response times are provided for the ERT, ICs, PIOs, EMT, and First Responder personnel. The shift supervisor can also access an employee on-site roster from our on-line KRONOS timekeeping computer system. This on-site report reflects ERT members present to respond to emergencies. This report is printed out on every off-shift by the guard on-duty and maintained by the shift supervisor.

Copies of the up-to-date SDSs are located on the Arkema Inc. intranet web site (ANNIE). From this site the SDSs can be printed and a search made of all SDSs for the corporation.

Table 1	ERT, EMT and EMR Cell Phone Numbers
Table 2	Incident Commanders
Table 3	Public Information Officers
Table 4	Head Count Officers
Table 5	Location of Emergency Centers

Table 1
ERT, EMT, & EMR CELL PHONE NUMBERS

ERT MEMBERS, PHONE NUMBERS, RESPONSE TIMES AND SHIFTS			
NAME	CELL PHONE NO.	RESPONSE TIME	SHIFT
Anderson, Doug[2]	(406) 855-2559	30 minutes	Days
Bugg, Dennis[2]	(270) 703-4650	20 minutes	C
Cash, Chad[2]	(270) 564-7906	60 minutes	Days
Conway, Mike [2]	(270) 625-2212	40 minutes	Days
Coakley, Price	(270) 331-2364	35 minutes	C
Cronon, James[2]	(270) 804-2551	25 minutes	Days
Dunn, Jon	(270) 804-9052	40 minutes	D
Forsythe, Jim[2]	(270) 205-1055	45 minutes	B
Gautney, Stan[2]	(270) 836-0044	20 minutes	Days
Goins, Chad [2]	(618) 645-1238	45 minutes	A
Gore, Adam[2]	(270) 703-8502	25 minutes	C
Henson, Alexis[2]	(270) 217-9940	10 minutes	Days
Henson, Scott	(270) 564-3516	12 minutes	D
Holland, Brad [2]	(270) 519-9888	25 minutes	C
Hooks, Billy	(270) 619-3925	40 minutes	B
Hounshell, Raea[2]	(270) 205-7360	30 minutes	Days
Leslie, Derek[2]	(270) 252-4491	30 minutes	Days
Long, Donald [2]	(270) 703-6775	10 minutes	Days
Massa, Tim [2]	(270) 519-0469	25 minutes	Days
Mathis, Adam [2]	(270) 703-2629	15 minutes	D
Miller, Kevin[2]	(270) 703-3867	20 minutes	Days
Mohon, Brian	(270) 705-9017	40 minutes	B
Moyers, Calvin	(270) 804-5024	45 minutes	C
Peden, Tony[2]	(419) 709-2565	20 minutes	Days
Reynolds, Mark [2]	(270) 205-7991	40 minutes	A
Rowland, JP[2]	(270) 556-0988	30 minutes	D
Schell, Monty[2]	(270) 210-0452	35 minutes	Days
Shemwell, Brian[2]	(270) 205-0808	30 minutes	A
Smith, Rodney [2]	(270) 908-1682	30 minutes	Days
Sterrie, Chris[2]	(270) 994-3586	30 minutes	Days
Thomas, Brian [2]	(270) 703-8582	20 minutes	Days
Winfrey, Barry	(270) 705-8346	25 minutes	B
Yancy, Jonathan	(270) 210-0773	25 minutes	Days
MEDICAL RESPONDERS ONLY			
Fulton, Jay[2]	(270) 776-5963	30 minutes	Days
Crowe, Clark[2]	(270) 226-3403	45 minutes	Days
McHaney, Jason[2]	(270) 703-2496	30 minutes	Days

[1] – EMT Personnel (If designated)
[2] – Emergency Medical Responder Personnel
All plant personnel are First Aid/AED/CPR Trained

Table 2
INCIDENT COMMANDERS

NAME	POSITION	PLANT PHONE NO.	HOME PHONE NO.	CELL PHONE NO.
HOME ADDRESS			RESPONSE TIME	
Carl Stewart*	Operations Manager	6585	(618) 524-3731	270 493-0628
7489 Providence Ln, Golconda IL 62938			45 Minutes	
Brent Lents	Technical Manager	6345	(270) 354-9216	(270) 205-7566
649 Salem Chapel Rd. N., Benton, KY 42025			30 Minutes	
Jim Ashford	Major Risk & MI Mgr.	6593	(618) 995-2141	(618) 751-0089
512 N. Ferne Clyffe Rd., Goreville, IL 62939			70 Minutes	
Jeff Hall	Plant Manager	6364	(270) 527-1031	(270) 703-4222
1897 Foust Sledd Rd., Benton, KY 42025			15 Minutes	
Brian Shemwell	Shift Superintendent	6379	None	(270) 205-0808
1358 Vanzora Rd., Benton, KY 42025			30 Minutes	
Dennis Bugg	Shift Superintendent	6379	(270) 354-8755	(270) 703-4650
1320 Olive Hamlett Rd. Benton, Ky 42025			30 Minutes	
Adam Mathis	Shift Superintendent	6379	(270) 395-9798	(270) 703-2629
352 Pugh School Rd., Benton, KY 42025			15 Minutes	
Jim Forsythe	Shift Superintendent	6379	None	(270) 205-1055
185 Mermie Rd., Hardin, KY 42048			30 Minutes	

*** Individual designated as primary IC**

Other members of Plant Management and all members of the Emergency Response Team have received training and are qualified to perform the duties of Incident Commander. They are not listed above because acting as IC is not their primary responsibility during an incident.

Table 3
PUBLIC INFORMATION OFFICERS

NAME	HOME PHONE NUMBER	CELL PHONE NO.	RESPONSE TIME
* Bobby Smith	(270) 395-8275	(270) 703-0159	15 minutes
Jeff Hall	(270) 527-1031	(270) 703-4222	15 minutes

* Individual designated as primary PIO

Table 4
HEAD COUNT OFFICERS AND ASSIGNED AREAS

NAME	ASSIGNED AREA
Rhea Ann Phillips	Administration Building
Debbie Kipers	Administration Building
Clay Story	Boiler
Jared Whybark	Boiler
Sandra Forsythe	Technical Building
Karen Jones	Technical Building
Jeremy Leonard	Technical Building
Tracy Henson / Engineering Department Representative	East Gate
Guards	Main Gate
Zachary Howard	Storeroom
Shannon Cathey	Storeroom
Blake Abbott	Storeroom
Ashley Wireman	Storeroom
Guards	West Gate
*Heather Wadley	Head Count Officer
Lacey Duckett	Head Count Officer
Melinda Clapp	Head Count Officer
Amber Guess	Head Count Officer

* Individual designated as primary HCO

In the event of an evacuation, if the above named personnel are not available at their assigned location, a Head Count Officer will need to assign someone to assume their duties.

Table 5
Locations of Emergency Centers

Location of Command Posts: Administration Building Main Guard Gate (Primary)
134a Control Room (Alternate)
Technical Building (Alternate)

Relocation Area: Rolling Hills Shopping Center

ARKEMA
INNOVATIVE CHEMISTRY

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Written by:	Checked by:	Approved by:
Jeremy Rowe Environmental Engineer	Greg Watson Environmental Manager	Jay Fulton Manager of Safety and Health

Annex 21 Personal Protective Equipment (PPE) Program and Matrix

PPE requirements at the Calvert City plant are spelled out in "Personal Protective Equipment (PPE) Program and Matrix", IH-ADM-0308.