

Appendix G

University of Vermont Environmental Safety Facility Contingency Plan

Contingency Plan Control Sheet
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Numbered copies of this contingency plan for UVM’s permitted hazardous waste treatment, storage and disposal facility (TSDF) will be issued to the following organizations and companies to ensure they are familiar with the operations at and potential hazards associated with UVM’s Environmental Safety Facility (ESF). The copies must be kept at the specified location. Only these copies will be updated, do not make unauthorized copies.

1. UVM Environmental Safety Facility 667 Spear Street Burlington, VT 05405 *(Contained in ESF permit)	2. UVM Risk Management Department Burlington, VT 05405 *(Contained in ESF permit)
3. UVM Police Services 284 East Avenue Burlington, VT 05405	4. UVM Rescue 284 East Avenue Burlington, VT 05401
5. Burlington Fire Department Station#3, Mansfield Ave Burlington, VT 05401	6. South Burlington Fire Department 575 Dorset Street South Burlington, VT 05403
7. Fletcher Allen Medical Center, Risk Management Colchester Ave Burlington, VT 05401	8. Chittenden County LEPC c/o CCRPC 30 Kimball Avenue, Suite 206 South Burlington, VT 05403
9. Environmental Products and Services Flynn Avenue Burlington, VT 05401	10. Clean Harbors Environmental Services 338 Commerce Street Williston, VT 05495

Contingency Plan

Introduction

This plan describes the actions to be taken by University of Vermont personnel in the event of an incident involving hazardous waste materials at the Environmental Safety Facility. The plan will be implemented as soon as possible should any of the following conditions exist at the facility: fire; explosion; or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The contingency plan will be reviewed and, if necessary, amended whenever the facility's permit is revised, the plan fails in an emergency, changes in the facility's operations alter the plan, or changes occur in the list of emergency coordinators or emergency equipment.

Coordination Agreements

A critical event at the ESF may require resources beyond the capacity of ESF staff. Therefore emergency preparedness planning with and awareness within local response agencies is necessary and beneficial. This planning takes place at several levels: formal response plans and training, informal tours, routine interactions, and activities through the Local Emergency Planning Committee (LEPC). Each agency is provided a copy of UVM's contingency plan (see Contingency Plan Control Sheet); however, the potential response is continuously improved by regular interaction with the agencies involved.

Local Emergency Planning Committee (LEPC)

UVM ESF staff have been active participants in the Chittenden County LEPC since its inception in 1988 and continuing through 2005. ESF staff submits the annual Tier II chemical inventory as well as all updated hazardous waste contingency plans to the LEPC. UVM participates in LEPC exercises, monthly meetings, and routine communications. The LEPC provides a forum to plan, become familiar with and to coordinate activities with Burlington Fire Department, South Burlington Fire Department, Fletcher Allen Health Care, Vermont Emergency Management, Vermont State Hazardous Materials team, District 3 EMS, Vermont Health Department, Vermont's Homeland Security office, Vermont State Police and other emergency response and planning organizations in Chittenden County and the State.

UVM is currently working with the LEPC, including all of the above-mentioned agencies, to complete a countywide emergency response plan, including planning for hazardous materials response. This plan is expected to include, for each municipality in Chittenden County as well as for UVM and a few other specific entities:

- An emergency response resource inventory,
- A critical infrastructure inventory,
- A "rapid response plan," and
- An emergency operation plan.

The goal of this plan is to provide a system where all of these contingency and response plans can be coordinated, tested, communicated and improved on a continuing basis. UVM's ESF staff participates in and helps to facilitate this process.

UVM Police Services

UVM's police officers and dispatchers monitor fire and intrusion alarms at the ESF. They are likely to be the first response personnel on scene to an emergency at the ESF. Each police officer receives training to become familiar with the layout of the ESF and the locations where hazardous materials are stored.

UVM Police are expected to respond no further than the closest point where the emergency is recognized or the front door of the ESF whichever is farthest from the hazard.

UVM police roles at an ESF emergency may include law enforcement activities, notification of additional responders, evacuating area personnel, site security, mobile communications and participation in unified command structure.

Burlington Fire Department - primary emergency response

Burlington Fire Department (BFD) has the primary responsibility for fire alarms at the ESF. Firefighters from Station 3, located on Mansfield Avenue, along with ESF, prepare trainings for all shifts of BFD firefighters; these have included planned tours of the building as well as presentations with photographs of the ESF. Additionally, BFD crews make impromptu visits to the ESF for tours.

Additionally, Burlington Fire Department has primary responsibility for uncontrolled releases of hazardous materials at the ESF. As the ESF building is designed to contain most releases, BFD would only need to assume this responsibility in the event of fire, explosion, injury, death or excessive water release (such as fire suppression sprinklers) in the waste handling area of the building.

Burlington Fire Department also has the training, equipment and capability to decontaminate patients that have been exposed to hazardous materials. Burlington Fire Department's Emergency Medical Technicians are trained to respond to hazardous materials emergencies.

South Burlington Fire Department - secondary emergency response

South Burlington Fire Department (SBFD) will back-up Burlington Fire if necessary in responding to fire alarms at the ESF. Training for SBFD has comprised of tours of the ESF and exercises and trainings coordinated through the LEPC.

Vermont Hazardous Materials Response Team – Hazmat support to fire departments

Organized under the State Emergency Response Commission (SERC) and operated through Vermont Emergency Management, the State HAZMAT Team is available to support any fire department in Vermont in responding to hazardous materials emergencies. The team is equipped for response into environments that require Level A, B, C or D personal protective equipment. The team is also equipped to identify and evaluate hazardous materials emergencies.

The State HAZMAT team will respond in a defensive mode to contain a spill and stop the source. They will function under the incident command of the local fire department to assure the safety of personnel and the environment. UVM, not the State HAZMAT team, is responsible for the cleanup of material spilled at the ESF.

The team is supported by any of several fire departments that are trained and equipped to provide decontamination services at hazardous materials scenes. These decontamination lines can be used to decontaminate emergency responders or victims. Rinse water from the decontamination line would be containerized and become the responsibility of UVM for hazardous waste determination and management.

UVM Rescue - primary medical response

UVM Rescue, like most Vermont EMS units, has a policy of receiving HAZMAT contaminated patients only after they have been decontaminated on-scene. Burlington Fire Department's emergency medical response team is prepared to backup UVM Rescue if necessary.

Fletcher Allen Health Care – emergency and long-term medical care

UVM works very closely with Fletcher Allen Health Care (FAHC) in many areas. These include coordinating hazardous and medical waste efforts, mercury spill response, indoor air quality investigations, regulatory training, shared space for medical research labs and for clinical research labs. Many of UVM's faculty who operate the research labs that generate the hazardous waste are also on staff at FAHC.

FAHC emergency planning personnel gave a tour to ESF personnel in 2005 and pointed out the new decontamination room in the emergency room (coming on line in 2005), FAHC emergency planning personnel have toured the ESF on numerous occasions, including in April 2005. ESF and FAHC emergency planning personnel interact regularly at the LEPC.

Environmental Products and Services of Vermont -

and

Clean Harbors Environmental Services - 24-hour HAZMAT emergency response and remediation

ESF staff use these two contractors routinely for additional labor in handling waste, cleaning up spills, removing fuel tanks and other projects. ESF maintains open budgets with each contractor for spill response. Each contractor plans to be able to provide a two-hour response to ESF emergencies. The contractors tour the ESF often.

UVM Physical Plant - facilities and mechanical systems management

UVM's Physical Plant Department (PPD) staff maintain and repair building electrical, plumbing, air handling and other systems at the ESF. ESF personnel escort PPD personnel if their work will bring them into the waste handling areas.

Properties of Hazardous Waste Stored at the ESF

The ESF receives waste chemicals from all of UVM's laboratories. At any point, the ESF will store waste from between 1,000 and 5,000 chemicals. Most of these are in laboratory amounts (less than 1 gallon, less than 1 pound). The following table, extracted from Prudent Practices in the Laboratory summarizes the types of waste, along with the associated hazards and types of injuries or illnesses that could result from fires, explosions, or releases at the facility.

Type of Waste	Hazardous properties, injury or illness that could result from exposure to chemicals involved in fires, explosions, or releases at ESF
Flammable Liquids and Gases	Flammable liquids and gases readily catch fire and burn in air. Containerized flammable liquids may boil or become pressurized in a fire and vent explosively with either a spout of flame or shrapnel from the container. These can cause serious tissue burns. Superheated vapors can be inhaled causing excessive burns to the respiratory system.
Flammable Solids	Flammable solids readily catch fire and burn in air, often with intense heat. These are often difficult to extinguish and can cause deep tissue burns.
Pyrophoric or Spontaneously Combustible Materials	Pyrophoric chemicals react with the air to catch fire, or release a toxic, flammable or corrosive gas. These can cause temperature burns, corrosive burns, asphyxiation or other toxic effects.
Water Reactive	Water reactive chemicals react with water (including excessive humidity in the air) to catch fire, or release a toxic, flammable or corrosive gas.
Oxidizing Agents	Oxidizing agents may react violently when they come into contact with reducing agents and sometimes with ordinary combustibles. The resulting fire or explosion can cause serious burns.
Corrosive Materials	<p>Corrosive materials are acids (pH less than 2.0) and bases (pH>12.5). These can cause destruction of living tissue by chemical action at the site of contact and can be solids, liquids or gases. Corrosive effects can occur on the skin and in eyes, as well as in the respiratory or gastrointestinal tract. Corrosive effects can happen rapidly.</p> <ul style="list-style-type: none"> • Some materials, such as hydrofluoric acid, are specific to the materials they target, making emergency decontamination difficult. • Many oxidizing agents also have corrosive effects.
Toxic – Irritants	Irritants are non-corrosive chemicals that cause reversible inflammatory effects.
Toxic – Allergen	Chemical allergies can result from low-level exposures to chemicals, following previous sensitization. Allergy-related symptoms can range from mild skin irritation to chemical pneumonitis and anaphylactic shock. Allergy symptoms can present soon after exposure or can be delayed.
Toxic – Asphyxiant	Asphyxiants prevent oxygen from getting into the body (simple asphyxiants) or prevent oxygen from getting to organs and tissue once inside the body (chemical asphyxiants).

Toxic – Carcinogens, Reproductive & Developmental toxins	<ul style="list-style-type: none"> • Carcinogenic materials cause, or are suspected to cause, cancer or uncontrolled cell growth. • Mutagens cause mutations in cell growth. • Teratogens cause birth defects in the offspring of the exposed individual. • Reproductive toxins may target the male or female reproductive systems resulting in adverse effects on fertility, gestation, lactation or reproductive performance. • Developmental toxins produce adverse effects on the development of an embryo or fetus.
Toxic – Neurotoxin	Neurotoxins target the central nervous system (brain, spinal cord, neurotransmission, cerebrospinal fluid) or the peripheral nervous system (nerves and neurons). Neurotoxic effects range from slurred speech and headaches to neuropathy, paralysis and death.
Toxic – Toxins affecting specific organs or systems	Specific chemicals can target and disrupt the function of the kidneys, liver, blood formation system and other body systems and organs.

Prudent Practices in the Laboratory, National Academy Press 1995, Chapter 3: Evaluating Hazards and Assessing Risks in the Laboratory

The general hazards described in the above table do not account for routes of exposure, duration or frequency of exposure, concentration of chemical, or the hazards of mixed chemicals. A chemical may be expected to have more than one hazard (i.e. flammable and toxic). Those factors, along with the acute and chronic affects of exposure, need to be considered in any hazard analysis.

Hazard information about a specific chemical involved in an event will have to be researched. Whenever possible, three sources of information should be consulted. These sources can include material safety data sheets, a chemical dictionary, The Merck Index, Prudent Practices in the Laboratory, and A Comprehensive Guide to Hazardous Properties of Chemical Substances (Patnaik).

Hazardous Materials Emergency Coordinator

UVM's hazardous materials emergency coordinator is available 24 hours a day to respond to and coordinate hazardous materials emergency response measures at the ESF. The emergency coordinator is familiar with the contingency plan, the facility layout and operations, locations and characteristics of the wastes handled, and the location of hazardous waste records within the facility. The emergency coordinator has the authority to commit the resources needed to carry out the contingency plan.

In case of a fire, explosion, or chemical release involving hazardous waste, UVM's police dispatch will notify the emergency coordinator. If the dispatcher is unable to reach the primary emergency coordinator, he/she will contact one of the alternate emergency coordinators. The emergency coordinator or alternate emergency coordinator will be accessible by phone or pager. The primary emergency coordinator or one alternate emergency coordinator will always be available on-site, or on call. A UVM Police Shift supervisor will always be on-site the UVM campus and available to respond to nearby noncontiguous sites including the ESF.

The ranking, on-duty Police Shift Supervisor will secure the site in the event of a spill or release until chemical handling and emergency response staff arrive on the scene. The UVM Police Services Shift Supervisor is authorized to contact a hazardous material response contractor in the unlikely event that none of the emergency coordinators can be reached.

The Contingency Plan will be reviewed with UVM Police Services' Supervisors at least annually.

The emergency coordinator will be prepared to provide the following:

1. Emergency coordinator's name and telephone number;
2. Facility name and address;
3. Time and type of incident;
4. Name and quantity of material(s) involved to the extent known;
5. Extent of any injuries;
6. Possible hazards to human health and the environment outside the facility.

Emergency Coordinator List		May 2006
Primary Emergency Coordinator		
<p>Francis Churchill Environmental Compliance Manager 20 Wheeler Lane Richmond, VT 05477 656-5405 or 656-5400 (Work) 434-3044 (Home) Cell: 316-9566</p>		
Alternate Emergency Coordinators		
<p>1. Ralph Stuart Environmental Safety Manager P.O Box 3171 Burlington, VT 05401 656-5403 or 656-5400 (work) 658-3124 (home) Cell: 316-9571</p>	<p>2. Brian Medor Environmental Safety Specialist 53 Pine Street Swanton, Vermont 05488 656-5408 or 656-5400 (work) (802) 868-3727 (home) Cell: 316-9544</p>	
<p>3. Richard St. Gelais Lab Safety Coordinator 131 South Street Essex Jct., VT 05452 656-5404 or 656-5400 (work) 878-6786 (home) Cell: 316-9572</p>	<p>4. Barbara St. Gelais Lab Safety Coordinator 131 South Street Essex Jct., VT 05452 656-5404 or 656-5400 (work) 878-6786 (home) Cell: 316-9543</p>	
<p>5. Lee Diamond Environmental Safety Technician 746 Dugway Road Richmond, VT 05477 656-5408 or 656-5400 (work) 434-4253(home) Cell: 316-9568</p>	<p>6. Mary Dewey Director of Risk Management 273 Joan Ave Richmond, VT 05477 656-3242 or 656-8453 (work) 434-7312 (home) Cell: 316-9569</p>	

Emergency Notification Procedures

The following procedures are integrated into the University of Vermont’s Emergency Preparedness Plan and, if necessary, the emergency coordinating board will assemble in accordance with that plan. Should any conditions exist at the facility which could threaten human health or the environment, the emergency coordinator will immediately implement the following emergency notification procedures:

1. Activate the internal alarm or communication system by pulling fire alarm pull boxes, or using facility intercom or telephone if necessary.
2. The internal alarm system will notify the UVM Police Services’ dispatcher that an emergency exists at the facility; alternatively, Police Services can be called directly. Police Services will notify the Risk Management Department if an alarm occurs during non-operating hours.
3. The emergency coordinator will notify the Burlington Fire Department through the UVM Police Services’ dispatcher if the incident involves fire or explosion, or if there is a potential need to evacuate areas outside of the facility.
4. The emergency coordinator will notify Environmental Products & Services, Inc, Clean Harbors Environmental Services, or other contractors with hazardous material response capabilities, if facility personnel cannot contain the release of hazardous waste.
5. The emergency coordinator will notify the Vermont Department of Environmental Conservation immediately upon determining that a release has occurred.
6. The emergency coordinator will notify the US Coast Guard if the incident threatens surface waters.
7. The emergency coordinator will notify the National Response Center if it is determined that the facility has had a fire, explosion, or release that could threaten human health or the environment outside of the facility.
8. The emergency coordinator will notify the University of Vermont Administrative and Facilities Services office. This activates, if necessary, UVM’s Emergency Operations Center and Emergency Operations Team, including financial, public relations, police and physical plant services.

Emergency Telephone Numbers

UVM Police - Emergency (on campus).....	911
UVM Police - non-emergency	656-3473
Burlington Fire Department.....	911
Environmental Products and Services	862-1212
Clean Harbors Environmental Services	651-0553
Vermont Emergency Management (“Hazmat”) Hotline.....	1-800-641-5005
Vermont DEC (business hours)	241-3888
National Response Center.....	1-800-424-8802
US Coast Guard	864-6791
UVM Administrative and Facilities	656-2240

Evacuation Plan

The fire alarm is the signal to initiate an evacuation of the facility. Upon hearing the fire alarm, facility personnel will proceed to the nearest emergency exit. All emergency exits have an illuminated EXIT light.

- Facility personnel's normal work activities occur mostly in the offices and laboratory portion of the building. Personnel would exit from these areas through the main ESF entrance (East side) or through the laboratory in room 108 (West side).
- Routine waste activities occur in the workroom (109). There are two exits from this room that allow access to exits at the West stair, East stair or laboratory. Personnel would doff PPE as necessary once they achieve a safe distance from the emergency.
- Emergency exiting from the waste storage rooms (110 – 120) will primarily happen through any of the 11 doors that exit directly to the outside (North side). If the situation requires alternative exits, personnel will exit the rooms into the main facility hallway and then proceed to the nearest, accessible stairwell exit.

All facility personnel will meet outside of the upwind (Northeast or Southeast) gate of the facility and will report to the emergency coordinator.

The evacuation plan will be reviewed with all facility personnel on an annual basis. A copy of the building plan with emergency exits marked is attached.

Identification of Hazardous Waste Materials

Should a fire, explosion, or release occur at the facility, the emergency coordinator must immediately identify the character, source, amount, and extent of any released materials by observation, record review, or if necessary, chemical analysis.

The facility will maintain a drum report identifying the DOT shipping name, quantity and locations of all bulk and lab-packed wastes stored at the facility. The inventory will be updated whenever there is a change, and posted in the front foyer of the ESF as well as at <http://esf.uvm.edu/emergency>.

Assessment

Whenever there is a release to the environment, fire, or explosion, the emergency coordinator will assess the known hazards to human health and the environment, considering all direct and indirect effects. The assessment will include source, identity, amount, and extent of a release; the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions, wind direction, and containment.

If the assessment indicates that evacuation of a surrounding area may be advisable, the emergency coordinator will advise the ranking on-scene Fire Department officer of the situation and provide University assistance as requested. The emergency coordinator will also notify the National Response Center if it is determined that the facility has had a fire, explosion, or release which could threaten human health or the environment outside of the facility.

Control and Containment Procedures

Emergency Procedures for Hazardous Waste Releases

The following actions must be taken in the event of a release of hazardous waste to the environment:

1. If a danger of fire exists, contact the Burlington Fire Department through the UVM Police dispatcher. See the notification section for the information that must be provided.
2. If facility personnel cannot contain the release, contact a hazardous material response contractor.
3. Identify the source of the leak. The emergency coordinator will determine the appropriate level of personal protective equipment.
4. Stop the source of the leak if possible.
5. Contain any leaked fluid by diking, if necessary, with absorbent materials or by trenching.
6. If necessary, the emergency coordinator or his or her designee will close the control structure at the end of the stormwater retention pond.

Emergency Procedures for Fire and/or Explosion

The following actions must be taken in the event of a fire or explosion at the facility:

1. Activate the fire alarm system.
2. Initiate evacuation procedures. Evacuation routes will be posted throughout the facility. In addition, all facility personnel will be trained in the proper evacuation procedures.
3. Meet the first arriving fire company and inform the officer of the following:
 - a. Unaccounted facility personnel, if any;
 - b. Amount and types of hazardous wastes involved;
 - c. Area of the facility involved;
 - d. Any additional information, as needed.
4. If a release of hazardous waste has occurred, implement the emergency procedures for hazardous waste releases outlined above.
5. During the emergency, the emergency coordinator will act as liaison between the Fire Department, the emergency contractor, and University personnel.
6. Once the fire department has given the "all clear" signal, the emergency coordinator or the designated emergency contractor will inspect the facility to determine if it is safe for others to enter the facility.

Prevention of Recurrence or Spread of Fires, Explosions, or Releases

1. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other areas at the facility. These measures will include, where applicable:
 - a. Stopping processes and operations;
 - b. Collecting and containing released waste; and
 - c. Removing or isolating containers.
2. If the facility stops operations in response to a fire, explosion, or chemical release, the emergency coordinator or the designated emergency contractor will monitor for leaks, pressure buildup, gas generation or ruptures in valves, pipes or other equipment, wherever this is appropriate.

Cleanup Procedures

Clean up and repair activities shall be initiated within 24 hours of discovering a spill or leak.

1. Personnel involved in clean up activities will wear appropriate personal protective equipment. The emergency coordinator or the designated emergency contractor will evaluate the hazards present and recommend the appropriate level of protection.
2. All contaminated soil, vegetation, and absorbent material will be collected and placed in suitable DOT approved containers, which will be properly labeled for future disposal.
3. Any runoff water held within the storm water retention pond will be analyzed in accordance with appropriate test methods to determine if it meets the definition of hazardous waste. If it is determined to be hazardous, the run-off will be pumped out and transported to a permitted TSDF. If the run-off is determined not to be hazardous, the control structure will be opened and the pond will be drained in accordance with the laws and regulations enforced by the Department of Environmental Conservation's water discharge unit.
4. Any freestanding liquid hazardous waste will be pumped into a compatible, properly labeled, DOT approved containers. The drums will then be stored in the appropriate storage area until transported for final disposal.
5. The contents of any leaking drum will be transferred into a compatible non-leaking drum, or the leaking drum will be overpacked into a DOT approved drum.
6. All emergency equipment utilized during the emergency will be cleaned and returned to duty after the emergency. Any equipment determined to be unfit will be replaced.
7. The facility will not accept any waste for storage until the released material has been cleaned up.

Post Emergency Procedures

After the Emergency Coordinator has evaluated the situation and determined that the emergency is over and an adequate cleanup of the affected areas is complete, she/he must do the following:

1. Notify the Secretary of Natural Resources that the facility is in compliance with Section 7-308(b)(9)(E)(ix) of the Vermont Hazardous Waste Regulations before operations are resumed in the affected areas of the facility;
2. Maintain on file with the contingency plan; the time, date, and details of any incident that requires implementing the contingency plan; and
3. Within 10 days after the incident, submit a written report on the incident to the Secretary of Natural Resources. The report must include:
 - Name, address, and telephone number of the owner or operator of the facility;
 - Name, address, and telephone number of the facility;
 - Date, time, and type of incident;
 - Name and quantity of material(s) involved;
 - Extent of any injuries;
 - Assessment of actual or potential hazards to human health or the environment, where this is applicable; and
 - Estimated quantity and disposition of the recovered material that resulted from the incident.

Emergency Equipment

Fire Protection Equipment

The entire facility is equipped with a temperature-activated fire suppression system. All water-reactive waste is stored in a separate outdoor storage building that is equipped with fire-resistant wallboard and a dry chemical extinguishing system.

Hand-held ABC rated fire extinguishers are located every 30 feet within the chemical storage and work areas of the facility. In addition, a Class D extinguisher is mounted in the general work area for use on flammable metal fires. Class D fire extinguishers do not currently have an extinguishing rating from the National Fire Protection Association. Fire extinguishers are visually inspected on a monthly basis.

Communications Equipment

- Internal phone lines allow communication among personnel throughout the building; phone locations are shown on maps on pages G1-1 and G1-2.
- A fire alarm system capable of summoning emergency assistance, including detection and pull stations, has been installed throughout the facility in accordance with local fire codes. Fire alarm pull boxes are located adjacent to:
 - Main building entrance,
 - Each stairwell exit,
 - Laboratory exterior door,
 - Pouring station in room 109,
 - Door prior to entering facility portion of building,
 - Door prior to exiting facility portion of building, and
 - Each end of the hallway on the second floor.
 These locations are shown on maps on pages G1-1 and G1-2.
- Facility staff members carry beepers or cell phones.
- Outside telephone lines are provided in the offices, laboratory, and in the warehouse.

First Aid

A first aid kit is maintained in the laboratory and more extensive medical treatment is available through UVM rescue. The waste storage area is equipped with three safety shower and eyewash stations, and the work area is equipped with one safety shower eyewash station.

Respiratory Protective Equipment

The ESF is equipped with two emergency escape air packs accessible to the general work area. All responding facility personnel will be provided with respiratory protection, annual respirator training, and an annual hazardous material exam including a pulmonary function test (PFT).

Spill Response Equipment

Spill response equipment, sufficient for any spill which would be contained by facility personnel without the aid of an outside emergency contractor, is maintained and kept accessible to the general work area. In the event of an emergency involving more than minimal spill equipment, the 24-hour emergency response contractor will be called to respond.

The following equipment is reserved at the ESF for emergency spills and maintained at positions indicated on the facility site plan:

2 chemical splash goggles	rubber gloves
2 rubber aprons	
10 sponges	2 pails
10 sample vials	1 containers of pH paper
2 level “B” suits	10 tyvek suits
2 brooms	2 dust pans
2 squeegees	20 poly bags
10 bags Speedi-Dry	25 lb of sodium bicarbonate
2 hand pumps	1 85 gallon overpack drum
2 55 gallon open head steel drum	2 55 gallon steel closed head drums
2 55 gallon poly closed head drums	2 30 gallon poly closed head drums
2 16 gallon poly open head drums	2 15 gallon poly closed head drums

Any spill containment equipment utilized during a spill will be cleaned or properly disposed of and replaced.

The locations where emergency equipment and personal protective equipment are stored are marked on the 1st floor plan included in this contingency plan (page G1-1).

Procedures and equipment used to mitigate the effects of equipment failure or power outage

The ESF has an emergency generator located outside the building capable of powering phones, ventilation, exhaust fans, heat, fire alarms, security alarms, and exterior site lighting. In the case of a power outage, the emergency generator powers critical ESF equipment. The location of the emergency generator is shown on page G1-3.

Critical ESF systems are monitored 24 hours a day by UVM’s Physical Plant Department. Should a critical piece of equipment fail during off-hours, both ESF staff and physical plant personnel are on-call to address the situation.

Contingency Plan for the Reactives Storage Building at the Environmental Safety Facility

Prevention

In order to minimize the chance of a reaction, all reactive chemicals will be stored in the laboratory bottles in which they were shipped. To protect against a release, all bottles will be placed in secondary containers. All containers of reactive waste will be stored in the Reactives Storage Building. Packaging or depacking of containers of reactive chemicals is done in room 109 of the main ESF building.

Containment

The Reactives Storage Building is used to store water reactive, air reactive, spontaneously combustible, poly-nitrated compounds, and other reactive material. This building is a commercially manufactured product with the following safety features:

- Fire resistant wallboard and steel construction;
- Corrosion protected steel;
- Pressure release panel on rear wall, safety chained to wall;
- 6” deep secondary containment sump lined with 20 mils HDPE;
- Dry chemical fire suppression system, with fusible-link, automatic activation and manual pull station activation;
- Exterior audible fire alarm;
- Class 1, Groups C & D, Division 1 lighting, fan & electrical outlet; and
- Static grounding system

Response to a release of hazardous materials

In case of a release that does not result in an energetic reaction, the material will be stabilized only if the exact contents are known. For instance, sodium metal would be covered in mineral oil. The material would then be cleaned up using the emergency spill equipment located within the East Stairwell of the main ESF building which includes:

- Static-proof brooms,
- Shovels, and
- Water absorbing towels.

Small reactions or fires can be controlled with the Class D fire extinguisher, located outside of room 109 in the loading area of the ESF (see map on page G1-1). This extinguisher is approximately 120 feet from the reactive storage building and 30 feet from room 109.

Response to explosion, fire or other energetic release

ESF personnel WILL NOT attempt to control a large, energetic reaction, explosion, or fire. ESF personnel will attempt to control the resulting release using absorbents, diking and trenching methods; and the pond valve will be closed. Emergency response personnel will be called as specified in the notification portion of the contingency plan.

In all instances

The emergency coordinator will choose the proper PPE.
Clean-up personnel will follow decontamination procedures.

Emergency coordinator will follow Emergency Notification Procedures.

Contingency Plan for Transporting Hazardous Wastes

For operators of UVM vehicles that transport hazardous materials:

Prevention

Wastes are packaged in sealed DOT-approved containers and transported to the ESF only in properly permitted, vehicles that are placarded in accordance with DOT regulations. The waste containers are unloaded at the loading dock inside the truck bay.

Response to accident or release

1. Protect Yourself

Stay upwind and uphill of any accident involving suspected hazardous materials. Do not touch any spilled material; breathe any smoke, fumes or vapors. Do not eat, drink or smoke.

Use Personal Protective Equipment! All vehicles carrying hazardous materials are equipped with the PPE necessary for dealing with discharges of those materials.

2. Call for Help

All ESF vehicles are equipped with a cellular telephone while transporting hazardous waste. UVM Police will notify appropriate fire department and / or EMS.

UVM Police Service (from a cell phone)	656-3473
UVM Police Services (from a campus phone)	911
Burlington Fire Department	911
South Burlington Fire Department	911
UVM Rescue	911
Environmental Safety Facility	656-5400

Relay all pertinent information including:

- Location of accident,
- Injuries
- Chemical involved
- Size of spill
- Danger to public and environment
- Assistance needed

ESF will notify spill contractors.

Environmental Products and Services	862-1212
Clean Harbors Environmental Services	651-0553

3. Rescue the Injured

While considering all hazards, using appropriate safety equipment, recognizing your training limitations and assessing the immediate danger to the victim and yourself, administer first aid and emergency response.

For contamination, flush area with water for 15 minutes, remove contaminated clothing. Protect yourself.

Do not move victim unless there is an immediate danger in that area.

Administer First Aid, being aware that the victim may be contaminated with a hazardous material.

Inform EMS, hospital and any other responder of the nature of the hazardous exposure.

Blankets can be used to prevent contamination of the ambulance interior.

4. Stop The Spread

Using proper PPE determined by the emergency coordinator, attempt to stop, slow or contain the leak. Plugging holes, constructing dikes or simply changing the position of the drum can accomplish this. All hazardous materials hauling vehicles should carry proper PPE.

If the discharge has reached the ground, use absorbent materials or trenching techniques to control the spread of the material. Prevent spilled material or firefighting runoff from entering sewers, drains, buildings, and water sources, by using absorbents, trenching, diking or diverting the material. All hazardous materials hauling vehicles should also have proper spill containment equipment, such as absorbent materials, broom, shovel and a salvage type drum.

Prevent the public from entering the area. Evacuate all unnecessary persons. Direct and reroute traffic. Consult North American Emergency Response Guidebook, table of Isolation & Evacuation Distances to determine if downwind evacuation or contamination zones need to be implemented.

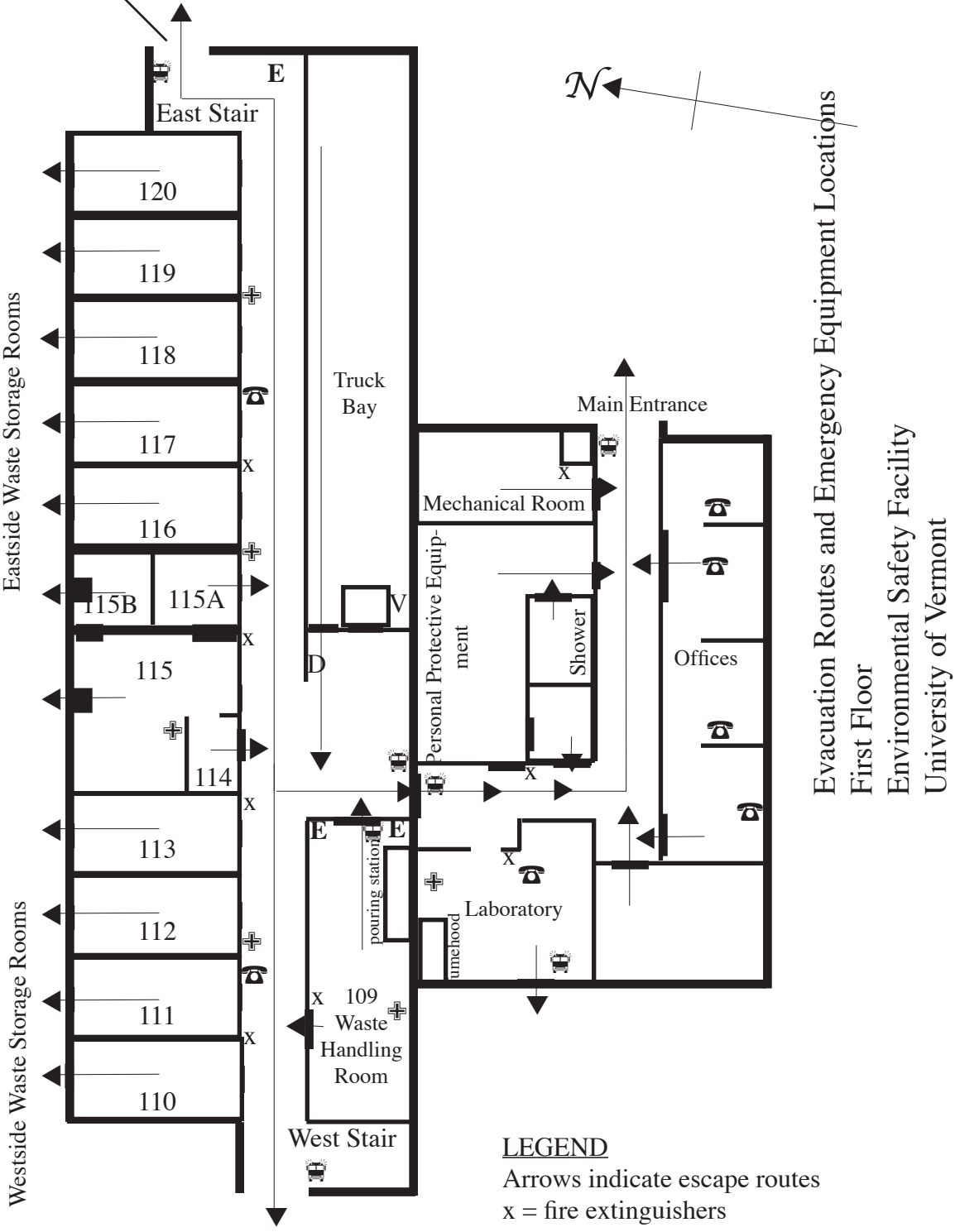
5. Allow Trained Personnel to Perform Their Tasks

When the fire department arrives, inform them of the nature of the chemical, and allow them to work. Assist spill response personnel with information, but allow them to clean up the contamination

Attachment G-1

Site Plan & Floor Plans

Reactives Storage Building (~40 feet)



LEGEND

- Arrows indicate escape routes
- x = fire extinguishers
- D = Class D fire extinguisher
- [Fire Alarm Pull Station Symbol] = fire alarm pull station
- [Telephone Symbol] = telephone
- [Eyewash/Safety Shower Symbol] = eyewash / safety shower
- E = Emergency Spill Equipment
- V = Shut-off valve for trench drain in truck bay

