



BRIGHAM YOUNG UNIVERSITY – IDAHO

ENVIRONMENTAL, HEALTH & SAFETY

SAFETY DEPARTMENT

HAZARDOUS WASTE MANAGEMENT

EH-010-R03

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Brigham Young University-Idaho

Compliance Area: Environmental Health & Safety

Department Title: Safety Department

Program Title: Hazardous Waste Management

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1.0 Overview

BYU-Idaho has developed this program to handle hazardous wastes at various campus sites, because they can pose significant safety and health risks to students and employees, if not handled properly.

2.0 Policy

This program applies to all pertinent operations of the university where students or employees may be exposed to potential discharge or spill situations involving hazardous waste under normal working conditions or during an emergency situation.

The contingency plan is designed to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water. The provisions of the plan are to be carried out immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

3.0 Requirements

General hazardous waste generators on campus shall be instructed and equipped to accumulate up to, but no more than 55 gallons of waste at their respective generation points. Satellite location containers shall be labeled as hazardous waste. When containers reach capacity, generators shall promptly notify the safety office (496-3057) which will then transfer, within 3 days, the wastes to the contiguous First West Hazardous Materials Temporary Storage Area for profiling, bulking and packaging for disposal. Bulk accumulations shall then be transported off campus for disposal by contracted and licensed TSD companies within 270 days from the start of accumulation at the First West Storage Area.

4.0 Purpose

The purpose of this program is to inform faculty and employees, that the university is complying with EPA requirements for preparing and maintaining a Hazardous Waste Contingency Plan under the hazardous waste regulations, Title 40, Code of Federal Regulations 265.50-.56 by providing a written plan that describes the equipment, human resources and procedures for responding to a discharge of hazardous waste.

5.0 Scope

The university generates hazardous wastes which are governed either under conditionally exempt small quantity generator (less than 100 kilograms per month) regulations or small quantity generator (100-1000 kilograms per month) regulations, depending on the type and volume of hazardous waste generated in a given period of

time. Hazardous wastes are accumulated from generation sites on campus and stored temporarily at the university hazardous materials storage area on First West, pending timely disposal pursuant to EPA regulations. The institution is not a permitted transportation, storage and disposal (TSD) facility.

6.0 Procedures

6.1 Routine university hazardous waste generation sites, materials and responsible parties include:

- A. Physical Facilities Paint Shop--Waste paints and solvents--Lead Painter
- B. Physical Plant Custodial Department-- Off Specification cleaning materials--Custodial Manager
- C. Chemistry Department-- Waste solvents and off specification chemicals--Chemicals Inventory Manager
- D. Theater Department--waste paints and solvents-- Scene shop construction manager
- E. Biology Department--Off specification chemicals--Biology Department Chairperson
- F. Art Department--Waste paints and solvents--Art Department Chairperson

6.2 Other university entities that may occasionally generate hazardous wastes are also instructed to follow the procedures listed in this Toxic and Hazardous Wastes Contingency Plan.

General hazardous waste generators on campus shall be instructed and equipped to accumulate up to, but no more than 55 gallons of waste at their respective generation points. Satellite location containers shall be labeled as hazardous waste. When containers reach capacity, generators shall promptly notify the safety office (496-3057) which will then transfer, within 3 days, the wastes to the contiguous First West Hazardous Materials Temporary Storage Area for profiling, bulking and packaging for disposal. Bulk accumulations shall then be transported off campus for disposal by contracted and licensed TSD companies within 270 days from the start of accumulation at the First West Storage Area.

University faculty or employees who plan to discard solid waste, but are not certain whether or not the waste is hazardous, shall promptly (within 30 days) notify the safety office (496-3057) for analysis of the waste and determination of any possible hazardous components. Possible hazardous wastes shall not be disposed of without prior analysis and authorization by

the university safety office. Proper storage containers and labels can be obtained from the university safety office.

The university encourages any suggestions that employees may have for improving the Hazardous Waste Written Contingency Plan, as the institution is committed to developing and maintaining an effective plan. The university strives for clear understanding, safe behavior and involvement in the plan from every operational level.

6.3 Administrative Duties

The university Safety Office is responsible for the development and maintenance of the hazardous waste written contingency plan. Copies of the written plan may be obtained from the Safety Office, and on the BYU-Idaho Intranet site under Employees/Safety Office/Policies and Procedures/Hazardous Waste.

Brigham Young University-Idaho, in care of the university president, is the owner or operator of campus facilities and properties. The Safety Office is responsible for ensuring that the written plan is complete, kept up to date, and made available to appropriate authorities. The plan is available to the BYU-Idaho University Security & Safety, the City of Rexburg Police Department, the Rexburg Fire Department, Madison Memorial Hospital and Idaho Bureau of Disaster Services as well as to all employees, students and community patrons of the university.

6.4 Emergency Equipment and Procedures

It is the policy of the university to operate the campus in a safe and responsible manner. University operations are continually reviewed to minimize the possibility of a fire, explosion, or an accidental release of a hazardous materials or waste. The university has an emergency fire plan accessible to all students and employees on the Safety Office web page.

6.4.1 Notification

Because of the nature of the hazardous waste the university generates, facilities are equipped with alarm systems which are capable of providing immediate emergency evacuation notification to students and employees. BYU-Idaho facilities are protected by smoke detectors, heat detectors, fire alarm pull stations and emergency telephones which are interconnected to the central computerized alarm system which reports to and is monitored continuously by University Security & Safety dispatch personnel.

In the event of a major hazardous materials or waste release or other emergency, persons should immediately activate an alarm system, notify the

University Security & Safety communications center by calling **496-3000**, evacuate the area of the spill. A Security & Safety officer will be immediately dispatched to initially manage the scene and other emergency response personnel will be dispatched as needed. In the event of a major emergency caused by a hazardous materials or waste spill or release, the responding security or safety officer will immediately advise the university Security & Safety communications center to initiate hazardous incident command procedures and insure that established emergency response, containment, disposal and decontamination procedures are implemented in a timely and effective manner. After determining that the facility has had a release, fire or explosion that threatens human health or the environment, the university communications officer shall immediately initiate notification of the Rexburg Fire Department (359-3010), the Rexburg Police Department (359-3008), the Madison County Sheriff's Department (359-5426), and the Idaho Office of Emergency Management (745-8641). The respective law enforcement agencies will notify appropriate government officials and convene emergency operations centers if warranted.

In the event of a small, contained release of hazardous materials or waste, the safety office can be contacted directly at 496-3057 or through the University Security & Safety communications center at 496-3000. In either case, the safety officer will promptly respond and facilitate containment, clean up and proper disposal. Safety Office personnel are trained and certified in hazardous waste operations and emergency response (HAZWOPER).

6.4.2 Equipment

The university's fire control equipment consists of fire extinguishers located throughout buildings; sprinkler systems installed in many, but not all buildings; fire hose cabinets are also located throughout many of the facilities. Spill control equipment consists of a variety of absorbent materials and containers for small spills which are available from the Safety Office. The Rexburg Fire Department will be summoned to deal with larger containment issues and the state emergency response team (Idaho State Police 525-7277) will be summoned in the event of a major hazardous materials incident. Decontamination control equipment consists of disposable coveralls, decontamination tubs and barrels for disposal of contaminated material.

6.4.3 Personal Protective Equipment

Emergency response personnel shall use appropriate personal protective equipment for each assigned job. The following personal protective equipment shall be available from the Safety Office for use depending on the requirements of the situation and the training of the individual response personnel:

1. Positive pressure self-contained breathing apparatus;
2. Chemical resistant gloves and boots;
3. Air purifying half-mask or full-face respirator with appropriate cartridges;
4. Chemical resistant total body coverall Tyvek suits;
5. Chemical resistant goggles

6.4.4 Maintenance

Procedures have been established for regularly checking and maintaining water pressure and volume to make sure that they are sufficiently adequate to supply water hose streams, automatic sprinklers or water spray systems. The Fire Safety Office tests water flow pressures in facility sprinkler systems and standpipes on a quarterly basis. Fire hydrants on campus are tested semi-annually for functionality and pressure. Alarm activation and notifications systems, fire control equipment, spill control equipment and decontamination equipment are inspected on an annual basis to ensure accessibility and proper function. The computerized emergency reporting system is monitored continuously. Fire extinguishers are installed in university facilities pursuant to NFPA regulations and are inspected on a monthly basis. Test and inspection records are maintained by the Fire Safety Office.

Respiratory protection is in stock and available at Stores and Receiving. Required fit testing and training is provided upon request by the Safety Office. Emergency and personal protection equipment such as protective coveralls, gloves, goggles and respiratory protection, including SCBA is readily accessible for employees involved in hazardous waste operations.

6.4.5 Inspections

Routine inspections of university facilities are conducted periodically by the Fire Safety Office to ensure that adequate aisle space is maintained to allow for the unobstructed movement of personnel and the transporting of equipment during an emergency and to promote compliance with egress and emergency access fire code regulations. When egress restrictions are noticed, appropriate supervisory personnel are advised to make necessary corrections to maintain adequate clearance in aisles and hallways, etc.. Major events are monitored by the University Security & Safety and Ticket Office ushers to insure clear aisle ways during such events. Persons who observe potential egress obstructions or safety hazards are encouraged to immediately notify the university Safety Office by phone (496-3053, 496-3056, or 496-3057) or via the Safety Office web page electronic hazard report form.

6.5 Incident Management

The Rexburg Fire Department, Idaho State Hazardous Incident Response Team and/or the Idaho Office of Emergency Management shall serve as the

emergency response team for major hazardous materials incidents occurring on university property. Although university safety office personnel are HAZWOPER trained and certified, the university does not have sufficient trained personnel to provide a fully constituted emergency response team. It shall be the responsibility of university safety office personnel to assist responding emergency services personnel by providing available information, equipment and other resources related to the following incident management factors:

6.5.1 Incident Site Characterization and Analysis

The following factors shall be considered during the preliminary evaluation to assist in determining the appropriate plan of action:

1. Whether the incident could involve a fire, spill, release or leak;
2. The quantity of the material and its harmful nature;
3. The type of container and its condition;
4. The location, time and weather conditions;
5. Any exposures to life, property, and the environment; and
6. Available resources.

To determine the appropriate plan of action, the following reference materials are recommended:

1. Area blueprints;
2. Chemical inventory list;
3. Computerized SDS system to help evaluate chemicals and materials present in the site area;
4. Poison Control Center to help evaluate chemicals and possible exposure effects to on-site victims and response personnel;
5. NIOSH Pocket Guide to Hazardous Materials;
6. National Fire Protection Association Handbook of Hazardous Materials;
7. University Fire Safety Plans and Building Coordinator Lists.

During an incident, a more detailed evaluation of the site's specific characteristics shall be performed by emergency response personnel. First responders shall identify existing site hazards to the On-Scene Incident Commander. This information will aid in the selection of appropriate engineering, containment and clean-up controls, as well as the selection of personal protective equipment for remaining response team members and support staff members.

6.5.2 Site Control

Purpose

To prevent employee/visitor contamination and harm during emergency response activities, the following shall take place. Site control activities shall include the following information:

1. Site maps (e.g., blueprints, floor exit plans);
2. Designation of hot, warm and cold zones;
3. Communication Center (a central location where all communications and plans will originate); and
4. Emergency decontamination protocol.

The site shall be controlled and maintained by the University Security & Safety and/or Rexburg Police Department personnel. The On-Scene Incident Commander shall use information provided from the site characterization and analysis survey to determine the three emergency response zones (Hot Zone, Warm Zone, and Cold Zone). The aforementioned zones shall be determined by using the following guidelines.

Hot Zone

The area containing the incident itself, including the product and its container. This area may be immediately dangerous to life and health (IDLH). Personnel permitted in this zone shall be dressed in the appropriate personal protective equipment.

Warm Zone

A larger geographical area surrounding the Hot Zone that is considered safe for workers to enter with limited personal protective equipment unless assigned a task requiring increased protection.

Cold Zone

The area adjacent to the Warm Zone that is restricted to administration and emergency response personnel. Minimum personal protective equipment may be required such as protective gloves and Tyvek coveralls.

6.5.3 Spill Control

Basic Control

Basic Control is the first step taken to prevent further release of the hazardous materials. Basic control may include shutting off a valve or shutting down a piece of machinery.

Extinguishment

When a hazardous material incident involves fire, the following procedure shall be initiated:

1. Notify the Fire Department by calling **911** or the University Security & Safety at 496-3000;
2. Determine the type of hazardous material in the fire;
3. Before attempting to extinguish the fire, determine if the hazardous material involved is compatible with the extinguishing media. The Material Safety Data Sheet and other references will assist you in determining what type of extinguisher can be used.

Containment

There are four types of procedures that can be taken to keep the involved material in its container.

1. **Shut-off Valves:** Shut-off valves may cause spills or releases. Ensure that all shut-off valves on the affected cylinder and/or drums are properly closed and secured.
2. **Plugging:** Plugging devices may be placed or pounded into a penetration to stop a leak. Pieces of wood, golf tees, soap or stakes wrapped with cloth may be used. Metal objects shall not be used for plugging purposes due to the possibility of sparking.
3. **Patching:** Materials like clay or putty may be used to patch a leak. Look for decomposition of the patching compound as well as the possibility of the build-up of internal pressure, which could cause the patch to fail.
4. **Overpacking:** Overpacking is accomplished by placing a damaged container into a larger undamaged container.

Confinement

There are three types of procedures which can be used to keep a material in a confined area.

1. **Diking:** Materials like sand, earth, straw or absorbent material can be placed around the perimeter of the leak. The type of diking material used shall be compatible with the spilled hazardous material.
2. **Blocking:** Drains, ditches or storm sewers shall be covered or diked to prevent run-off of spilled materials. Blocking can be accomplished with absorbent pads or a heavy piece of plastic.
3. **Absorption:** Run-off can sometimes be absorbed with dirt, sand, soda ash, saw dust, vermiculite or other absorbent materials. The absorbent material shall be positioned so that the spilled material runs into it. Care shall be taken to ensure that the absorbent is compatible with the spill.

6.5.4 Monitoring Equipment

Quantitative measurements of hazardous materials within the environment shall be made prior to any entry. Monitoring shall be conducted at the completion of a response to determine if the area is safe for re-entry.

The following quantitative instruments shall be used in hazardous atmospheric assessments.

1. IBRID MX4 Gas Meter to determine if the atmosphere is at an explosive level and if adequate oxygen is present;
2. Dragger Tubes to determine and/or identify the concentration of chemicals present in the atmosphere;
3. pH paper to determine the pH of a substance for proper neutralization; and

6.5.5 Decontamination

All clothing, equipment or person(s) assigned to duties in the Hot or Warm Zones shall be decontaminated to remove the presence of any hazardous materials encountered. The decontamination area shall be set-up prior to the mitigation of the incident.

Decontamination can be accomplished by:

1. Physically removing contaminants (e.g., liquid rinse, evaporation);
2. Inactivating contaminants by chemical detoxification (e.g., neutralizing agents); and
3. Disinfecting/sterilizing infectious or biological materials (e.g., bleach solution).

The decontamination procedures shall be initiated by the On-Scene Incident Commander. To ensure that the proper decontamination procedures are initiated, the Incident Commander shall make reference to following:

1. Safety Data Sheets;
2. The National Fire Protection Association Hazardous Materials Handbook;
3. The chemical manufacturer;
4. Chemtrec; and
5. Other related reference materials.

Once the proper decontamination procedures are determined, the On-Scene Incident Commander shall designate an area within the Warm Zone to set up the decontamination process. The equipment shall consist of portable wash tubs, sprayers, heavy gauge plastic tarp and disposable scrub brushes.

The following eight steps constitute the decontamination process for personnel involved in the remediation of the incident.

1. All personnel exiting the Hot Zone shall place monitoring equipment, hand tools and other equipment in this area. A recovery drum and/or tarp shall be set in place so all tools and equipment can be put aside for further decontamination. All equipment and tools shall be decontaminated when work is concluded in accordance with the *Decontamination of Equipment* section in this policy. Personal protective clothing, self-contained breathing apparatus and/or respirators worn by personnel are excluded at this stage and shall remain worn by personnel.
2. After placing equipment and tools in the recovery drum or on tarps, all persons who have been within the Hot Zone shall be washed down with the appropriate solution, as determined by the Safety Data Sheet, while wearing all personal protective equipment. All water used in this step shall be contained in a recovery drum or decontamination pool while this process is carried out and treated as hazardous waste at the completion of the decontamination process.
3. After emergency response personnel are completely washed down, they shall remove their protective clothing. The protective clothing shall be placed in a recovery drum or approved bag and labeled with a tag as to their contents. Support personnel may be required to assist personnel being decontaminated with removing their protective clothing.
4. After removing protective clothing, personnel being decontaminated shall remove their self-contained breathing apparatus or respirators. The breathing apparatus shall be placed on a tarp for further decontamination. For decontamination procedures of breathing apparatus and respirators, refer to the section in this policy for the Decontamination of Self Contained Breathing Apparatus.
5. Upon removing the personal protective equipment, the emergency response personnel shall remove any clothing that may have become contaminated. The clothing shall be placed in recovery drums or approved bags and labeled as to its contents.
6. Emergency response personnel shall shower thoroughly if it has been determined that personal protective equipment has failed to protect the user.
7. Emergency response personnel and persons that were in the Hot Zone and Warm Zone shall receive a post-medical evaluation by a qualified individual if overexposure or injury occurs.
8. If it is determined that emergency response personnel or persons involved with the incident need further medical attention, transportation shall be arranged by the On-Scene Incident Commander.

6.5.6 Decontamination of Equipment

Decontamination of equipment shall be performed by using portable wash tubs, sprayers, and disposable scrub brushes. Any equipment that cannot be thoroughly decontaminated along with the contents from the wash tub shall be considered hazardous and shall be stored and disposed of in accordance with the university's Hazardous Waste Management policy.

Monitoring Equipment

If monitoring equipment becomes contaminated, it shall require special cleaning techniques. Methods for decontamination shall be obtained from the EPA's Regional Office or the equipment's manufacturer.

Hand Tools

Emergency response hand tools shall be cleaned as appropriate by chemical or physical means. The EPA's Regional Office may be consulted for specific methods of decontaminating the hand tools. At the end of the incident, if the hand tools cannot be decontaminated, they shall be disposed of as hazardous waste.

Office and Laboratory Items

Use the same decontamination techniques used for hand tools and monitors.

Equipment that cannot be decontaminated shall be disposed of as hazardous waste. The equipment shall be replaced immediately or as funding is secured.

6.5.7 Follow Up

As soon as practical, after an emergency, the emergency coordinator will meet with members of the university emergency operations center and aid in the development of post emergency strategies and follow up operations. He/she will also initiate an investigation into the causal factors of the emergency and prepare a comprehensive report for the university administration which describes the causes of the emergency, its effects and the effectiveness of the response to the emergency.

In the event of an emergency caused by a hazardous waste spill or discharge, it is the university administration's responsibility to provide sufficient fiscal and human resources for effective response to and management of any hazardous waste emergency so as to minimize risk of injury to persons, destruction of property or damage to the environment.

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7.0 Appendices (Reserved)

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