OCCUPATIONAL AND ENVIRONMENTAL SAFETY & HEALTH OPERATIONAL PROCEDURE

Subject: Hazardous Materials Spill – Code Brown

Effective Date: May 2009 (version 2) **Supercedes:** December 2007

Review Date: 3 years or legislation or job changes

Original Signed by: Diane Gantzel, Director, WRHA Occupational and Environmental Safety & Health

1.0 GUIDING PRINCIPLES:

1.1 In keeping with the Winnipeg Regional Health Authority commitment to providing a safe and healthy workplace as noted in the WRHA 'Workplace Safety and Health' policy (20.10.080), the following Operational Procedure has been developed to ensure this policy is supported and to inform staff of their rights and responsibilities respecting the spill of Hazardous materials, Emergency Code Brown. Hazardous materials are used throughout the WRHA. Occasionally there can be spills, misuse and other incidents which may cause exposure of staff, other persons or the environment to these materials.

1.2 This operational procedure is also designed to ensure that when followed the minimum requirements of Manitoba Workplace Safety and Health legislation is complied with and where possible exceeded.

1.3 As with all matters relating to the Safety and Health of workers the Occupational Safety and Health Committee should be consulted for their input.

2.0 DEFINITIONS:

2.1 **The Act**: The Workplace Safety and Health Act W210 of Manitoba.

2.2 **Committee**: Means a workplace (occupational) safety and health committee established under section 40 of the Workplace Safety and Health Act.

2.3 **Employer**:

2.3.1 Every person who, by himself or his agent or representative employs or engages one or more workers, and

2.3.2 The Crown and every agency of the government.

2.4 **Supervisor:** Means a person who has charge of a workplace or authority over a worker.

2.5 **Worker**:

2.5.1 Any person who is employed by an employer to perform a service whether for gain or reward, or hope of gain or reward or not.

2.5.2 Any person engaged by another person to perform services, whether under a contract of employment or not

2.5.3 Any person undergoing training or serving an apprenticeship at an education institution or at any other place.

2.6 **Director:** means the person administratively responsible for the department or unit. Director includes heads of departments.

2.7 **OESH:** means the Occupational and Environmental Safety and Health Unit

2.8 **Hazardous Materials** include those chemical products as defined in the Hazardous Products Act of Canada, Biological hazards as defined under the Infection Control policy (XXXX0, hazardous waste as defined under the Manitoba Environment Act and Radioactive materials as defined under the Radio Active materials Act.

2.9 **Symbas system** a method to ensure safe storage of chemical products based on their compatibility with other products.

2.10 **Hazardous Material Spill** involves the spillage of Hazardous Materials from a container, pipe, process vessel or secondary exposure from other work (pest control, construction etc.).

2.11 **Incident Command System** is the disaster management system adopted by the Winnipeg Regional Health Authority.

2.12 **Incident Commander** is the person who organizes and directs the Incident Command System by giving overall direction for operations and if needed, authorizes evacuation.

2.13 **Incident Command Positions** – positions in a flexible organizational chart which are activated when necessary. Each position has a task sheet.

2.14 **Response Team** - employees who are designated to respond to chemical spills upon a code brown alert. *Dependent upon the resources of the facility/program the response team may be department based or facility wide. The existence and duties of a response team are based on the facility/program spill plan.*

3.0 Operational Procedure:

3.1 Each facility/program will develop spill response measures which include procedures and equipment required to safely contain, clean up and dispose of a hazardous materials spill.

3.2 Each facility/program's spill response measures must include

- 3.2.1 Spill response equipment required
- 3.2.2 Activation and notification
- 3.2.3 Safety/Risk assessment
- 3.2.4 Personal Protective Equipment
- 3.2.5 Response – department, response team ,etc.
- 3.2.6 Isolation - Confine and localize, Stop the source
- 3.2.7 Clean Up
- 3.2.8 Disposal of Used Material
- 3.2.9 Decontamination
- 3.2.10 Termination and notification
- 3.2.11 Documentation
- 3.2.12 Restock of Materials
- 3.2.13 Debriefing

3.3 The spill response measures will be specific to the facility/program. I.e. size of facility/program, hazardous materials present, staffing levels, etc.

3.4 Each facility/program's spill response measure must include plans for each type of spill based on the level of hazard, the amount of the spill and the effect the spill has on staff, other persons, the organization's ability to provide its services

3.4.1 Small spills that can be dealt with by trained staff in the area of the user of the chemical (*these are spills in which the hazardous material has been identified, the staff has been trained to respond to, and the area does not require evacuation*)

3.4.2 Spills that are beyond the scope of the department training or capabilities but can be handled by the Program/Site Spill Response Team *(if applicable)*

3.4.3 Spills that require outside assistance – HAZMAT

3.5 Each facility/program must develop a process for hazardous waste labeling and disposal which ensures that all containers of chemicals, including hazardous waste are labeled. *If the hazardous waste does not have a correct manufacturer's label, is a mixture of different materials or is made up of absorbent materials used during a chemical spill, a hazardous waste label must be used*.

3.6 All spills must be reported and investigated through the site Injury/Near Miss reporting system.

4.0 RESPONSIBILITIES:

4.1 Employer

4.1.1 Act in accordance with the objects and purposes of the Act by ensuring, so far as is reasonably practicable, the safety, health and welfare at work of all his workers, and complying with the Act and regulations.

4.1.2 Ensure that all his workers, and particularly his supervisors, foremen, chargehands or similar persons, are acquainted with any safety or health hazards which may be encountered by the workers in the course of their service, and that workers are familiar with the use of all devices or equipment provided for their protection

4.2 Facility/Program Executive Team

4.2.1 Assign responsibilities to staff within the facility/program to ensure the implementation of all aspects of the Incident Command System, Code Brown and Hazardous Spill Response.

4.2.2 Ensure resources (information, training, tool, equipment and time) are available to provide / maintain 4.2.1

4.2.3 Support the Operational Procedure throughout the facility/program.

4.3 Manager/Supervisor(s)

4.3.1 Ensure the appropriate spill response plans are in place to control and manage any anticipated Hazardous Material spills.

4.3.2 Ensure all workers who use hazardous materials are trained and exercised in the appropriate response to hazardous material spills or exposures.

4.3.3 To review any hazardous spill reports and provide such corrective actions to prevent re-occurrence.

4.4 Workers

4.4.1 Report all hazardous Material spills to their immediate supervisor as soon as reasonably practicable.

4.4.2 Follow the instruction and training provided by the employer regarding hazardous material spills.

4.5 Workplace Safety and Health Committee:

4.5.1 Consult with the facility/site/program on the development and implementation of this operational procedure.

4.5.2 Review and monitor the effectiveness of this operational procedure.

4.5.3 Annually review the spill response procedures and provide comment and input regarding improvement or changes.

4.5.4 Review hazardous spill reports and provide input and recommendation regarding prevention of re-occurrence.

4.6 Incident Commander:

4.6.1 Activate incident command positions as required as per the Incident Command System

4.6.2 Coordinate response team and assign responsibilities at the incident scene.

4.7 Response Team Responsibilities:

4.7.1 As per incident commander's direction, assist in the chemical spill containment and clean up.

4.8 Occupational and Environmental Safety & Health

4.8.1 Consult with the facility/site/program on all aspects of this operational procedure.

5.0 TRAINING REQUIREMENTS:

5.1 The training program must be workplace specific, effective and updated annually or when changes which may affect the procedure are introduced in the workplace.

5.2 Training must contain:

5.2.1 All employees must be informed of this Code and expected response at the time of orientation.

5.2.2 All managers/supervisors must receive training as outlined in Appendix G.

5.2.3 Workplace Safety and Health Committee members must receive training as outlined in Appendix G.

5.2.4 All departmental/facility/program response personnel must receive training as outlined in Appendix G.

5.2.5 All employees identified in the spill response procedure as having responsibilities must receive training as outlined in Appendix G.

5.3 All training must be documented. Records must be retained as required by the Workplace Safety and Health Act and Regulations.

5.4 Retraining will be offered if necessary or upon request.

REFERENCES:

Government of Manitoba. (2002). *The Workplace Safety and Health Act – W210*. Winnipeg: Queen's Printer. www.safemanitoba.com

Government of Manitoba. (2006). *The Workplace Safety and Health Regulation – 217/2006*. Winnipeg: Queen's Printer. www.safemanitoba.com

ATTACHMENTS:

Appendix A – WRHA Disaster Management Code Brown Guidelines
Appendix B - Site Hazardous Material spill procedure
Appendix C – Hazardous Waste Disposal Form
Appendix D – Hazardous Waste Tag
Appendix E – Emergency Response Evaluation form
Appendix F – Contents of Training Sessions
Appendix G – Chemical Spill Sample Powerpoint
Appendix H – insert - Site Incident Command Structure and Contact Information

STANDARDIZED EMERGENCY CODE GUIDELINE

CODE BROWN DRAFT

1.0 INTRODUCTION

Code BROWN is the code designation to describe the actions required in the event of a hazard material (hazmat) spill within a site, facility, or health services office occupancy. Hazmat is defined by this guideline as any substance to which exposure "results or may result in adverse affects on the health or safety of employees, patients, residents, or clients."

This guideline amplifies WRHA Occupational and Environmental Safety and Health Operational Procedures and is intended to provide planning assistance to sites, facilities, and health services occupancies in minimizing the risk to employees, patients, residents, and clients in a hazmat spill situation.

Hazmat may be found throughout the Winnipeg Health Region in locations such as (but not limited to): clinical and pathology labs, surgery, emergency department, laundry, environmental services, pharmacy, maintenance, loading docks, patient care areas, oncology, radiology, etc.

Examples of classes and types of hazmat in healthcare: Acetylene, Propane, Oxygen, Nitrogen, Nitrous Oxide, Carbone Dioxide, Anesthetic Gases, Medical Air, Argon, Diesel, Alcohols, Xylene, Methyl Methacrylate, Methyl Ethyl Ketone, Barrium, Peroxyacetic Acid, Phenol, Chemotherapy Drugs, Biohazardous Waste, Blood Borne Pathogens, Solvents, Sewage, Vesicants, Mercury Ethylene Oxide, Glutaraldehyde, Formaldehyde, Nuclear Medicine, Lab Acids, Boiler Treatment Caustics, Hazardous Waste, Asbestos, and Anesthetics.

Code BROWN may also present itself during patient triage at the Emergency Department (ED). Consider liquids or powders on the patient, odours, what the patient was doing to cause an Emergency Department visit? Where was the patient at the time? How long ago did the patient suffer injury?

2.0 AUTHORITY

This guideline is issued under the authority of the WRHA Chief Executive Officer.

3.0 ACTIVATION

Early recognition of spilled liquids and the determination of Code BROWN activation is facilitated by markings and colours, placards and labels, Material Safety Data Sheets (MSDS), Emergency Response Guide ERG2004, Agency for Toxic Substances and Disease Registry (ATSR) Medical Management Guidelines (MMGs), and scene clues such as people running from the area, people collapsed in the area, evidence of leak, a fire, vapours, unusual colours/odours, a load roar or increased pitch of a valve.

There is a requirement to recognize and act fast. If the spill occurs in a department/area and can be immediately claimed, responsibility for activating Code BROWN and taking appropriate action rests with the department/area manager. For patients presenting to ED with signs of hazmat contamination, the Triage Nurse and/or Charge Nurse shall assume responsibility for activating Code BROWN response. For unclaimed spills with undetermined origins, the site, facility, or community health services **Safety Officer** will make an informed recommendation to the site, facility, or community health services **Incident Commander** regarding the activation of the Code BROWN response plan. The **Incident Commander** will determine the extent to which ICS shall be activated.

DO NOT INTERVENE/ATTEMPT DIRECT ACTION ON THE SPILL IF:

- Action would be unsafe
- There is no threat to life
- There is a lack of response resources
- There is a lack of adequately trained personnel
- There is a lack of proper Personal Protective Equipment (PPE)

4.0 PROCEDURES

4.1 First Notification

First on Scene. Evacuate personnel from the immediate area. Extinguish or disconnect all sources of ignition. Inform immediate supervisor who will in turn inform the facility **Safety Officer** and **Security Officer**. Observe for and isolate anyone who may have received secondary contamination.

4.2 Safety

Safety Officer. Identify the spilled substance, answer the questions below, make recommendation(s) to **Incident Commander** regarding activation of Code BROWN (and ICS), notify switchboard to announce a Code BROWN, call 911 (if necessary) with the details of the event and chemical description (including flammability and hazardous material information) and/or Poison Control, and direct self-decontamination – trash bag decontamination (if necessary)*:

- What's the big picture
- Can it be handled
- What are the risks
- What is known
- What is not known

  Consider:

  Time
  Surface Area of Spill
  Concentration
  Ventilation
  Spill Control Product
  Personnel Location

* Is the victim/patient contaminated with a hazardous material? How can contamination of the ED and its occupants (patients and staff) be minimized? How can the victim/patient be managed so that medical care can be administered if required?

4.3 Isolation

Security Officer. Take the following action:

- Isolate the scene
- Deny entry
- Establish perimeters and control zones (pre-decon (hot), decon (warm), and post-decon (cold))
- Limit the spread of contamination
- Notify personnel in nearby areas
- Allow for safe working area
- Work with **Safety Officer** in determining whether there is a criminal component to the event

4.4 Subsequent Notification

Liaison Officer. Take the following action:

- Call **Medical Officer of Health** who, if required, will call **Provincial Conservation** (Emergency Response Unit)
- Call and establish contact with the **Regional Admin-on-Call** who will determine the level of Regional ICS activation in support of the local Code BROWN situation

4.5 Response

- Deploy Response Team*
- Use appropriate PPE
- Contain and/or control the spill. **NOTE:** Control requires PPE
  Consider:
  - Type of chemical
  - Spill area
  - Ventilation
  - Level of exposure risk (population and environment)
  - Physical characteristics of the chemical hazard (ERG2004, MSDS, ATSDR MMGs)
  - Potential hazards to the body (toxic, carcinogenic, asphyxiant, corrosive)
  - Spill Response Options
  - Neutralizers
  - Universal, Petroleum, Maintenance, and/or Inert Absorbents
- Decontamination
- Protective action (shelter-in-place response or Code GREEN response)

*Response Team operates under the Hazmat Branch of the Operations Section of ICS (to be further developed).

4.6 Clean-up

- Clean up the spill (if trained and qualified to do so)
  Consider:
  - Spill Clean-up Options
  - Implement permanent engineering controls (floor exhaust)
  - Increase over-all exhaust systems
  - Activate emergency exhaust venting (fans)
  - Apply spill control product (if trained to do so)
  - Isolate and deny entry until qualified personnel arrive to evaluate/clean-up
  - Deploy internal spill clean-up team
  - Request external spill clean-up team assistance
- Dispose of the spill material(s) in accordance with regulations

5.0 ROLES AND RESPONSIBILITIES

5.1 On-Duty Supervisor/Charge Nurse/Community Office Supervisor/First Responder

Immediate

- Assume the duties of **Incident Commander** until relieved
- Notify the switchboard/reception of the Code BROWN condition and direct a "Code BROWN" announcement
- In the case of a community office, activate the Panic Alarm System, brief responders, and fan the Code BROWN message out
- Notify Facility-on-Call/Community Area Director of the Code BROWN condition
- Await further instructions from senior management/unified on scene responders: WFPS/MB Conservation/Medical Officer of Health

5.2 Switchboard/Reception

On notification from the **Incident Commander** or designate, announce Code BROWN over the Public Address and Paging System. The announcement must include the exact location of the event to assist the effective deployment of pre-designated personnel (e.g., Code BROWN Response Team) to the area of concern.

Announce "Code BROWN Terminated" on direction from the **Incident Commander** or designate

5.3 Medical Personnel

Medical personnel who will decontaminate victims at the "first-responder operations level (level 1) must be trained with an emphasis on the use of Personal Protective Equipment (PPE) and decontamination procedures. Training to safely perform job duties and responsibilities must be certified (minimum of 8 hours of training or demonstrated competencies with an annual refresher). Hospitals and PCHs may develop in-house training fro decontamination and personal protective equipment usage. They must train personnel on how to prevent the spread of contamination to other facility locations. The hospital or PCH may also provide additional training in decontamination and PPE usage after sending personnel to a standard first-responder operations level course.

5.5 Emergency Department Personnel

Members of the Emergency Department clinical staff, including any other hospital worker who might be exposed to hazardous substances during a Code BROWN event, should be (1) familiar with Code BROWN procedures, (2) trained in the appropriate use of PPE, and (3) required to participate in scheduled drills.

5.5 All Staff

All Staff (including Environmental Services and Laundry Staff). All staff must be trained to safely perform their assigned duties. Personnel cleaning up the decontamination area must be adequately trained. Clean-up personnel must have access to Material Safety Data Sheets (MSDS) for those chemicals used in the clean-up process.

6.0 TERMINATION

The Code BROWN event will be terminated only by the **Incident Commander** in consultation with on-scene Conservation/Environment/Medical Officer of Health official.

7.0 DEBRIEFING/LESSONS LEARNED

As soon as practicable after the event, the **Incident Commander** along with all of the principal staff that have participated in the response will participate in a debriefing/lessons learned session (hot wash-up) to discuss the event and its outcomes. Example questions that would be posed in the course of the session:

What happened?
What was supposed to happen?
If there is a difference, why?
What is the effect of that difference?
What should be learned from this?
What improvement should be made or exemplary practices adopted?

What decisions would need to be made and who would make them?
Are personnel trained to perform the critical tasks?
Are other resources needed? If so, how will they be obtained?
Do plans, policies, and procedures support the performance of the critical tasks? Are personnel familiar with these documents?
What should be learned from this?

What improvement actions are recommended?

Experience shows hazardous spill management can be disturbing and chaotic. Unless Code BROWN procedures are exercised on a regular basis, the actions of those involved in responding to a Code BROWN will be unpredictable and the necessary information used in decision making and objective setting will not be captured correctly or usefully, if it is captured at all.

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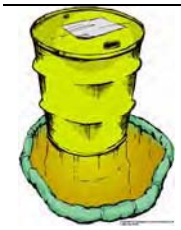
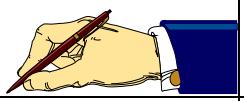
SAFE HEALTH CARE — SPOT THE HAZARD ASSESS THE RISK FIND A SAFER WAY EVERYDAY

SPILL PLAN

	1.	**Risk Assessment** Identify the hazards of the spilled material (MSDS). Evaluate the spill and identify where the leak has occurred. This will also change how the clean up is performed. The risk assessment will determine who may be qualified to clean up the spill. - Chemical Spilled (Material Safety Data Sheet, Hazard assessment of chemical, reactivity of chemical, PPE requirement) - Drains affected - Location & Size of spill - Knowledge of location of spill kit and that spill kit is not located in an area that may be affected. - Know limitations of spill kits (size of spill kit) - If a fire involved, activate building fire alarm, and use fire extinguisher if you have been trained to do so. - Have paging system announce Code Brown. - Ensure that properly trained personal are available to handle spill
		**Look for injuries** - Attend to injured or contaminated persons and remove them from the exposure if you can do so without endangering yourself
		**Seal off area** - Notify people in the immediate area. - Evacuate the area if necessary and close the door behind the spill. - Post a person and signage outside the door to prevent anyone from entering the spilled area. Inform supervisor or departmental head.
	2.	**Protective equipment** - Wear the appropriate protective gear for the situation as directed by the MSDS. - If the source or the material is not identifiable assume the worst. As noted in the spill kit there are non-venting goggles, gloves. Respirator is not a generic size and fit testing is required.
	3.	**Confine and Localize Spill** Cover any drains either with - socks provided - UXT PAD over drain - Neoprene drain covers - Drain plugs - Use Soc's to confine progression of spill if required

	4.	**Stop the Source** - Stop the source of the spill where possible (shut off valves, over turned drums) to do so check step 1 and assess the risk.
	5.	**Clean Up** - Use the Soc's to control the size of spill & - Use UXT Universal pads to absorb up chemical - Use Biohazard disposal bag for material. - Label bag with forms of identification (WHMIS label/MSDS) -
	6.	**Disposal of Used Material** - If the spilled material requires hazardous waste disposal - Complete a Hazardous Waste Requisition Form - Call Maintenance and state that you have spill material Absorbed materials take on the characteristics of what ever they absorb. Be sure to dispose of used absorbents and spilt liquids immediately,
	8.	**Decontaminate** - Decontaminate and sanitize affected area if necessary.
	9.	**Document Spill** - Inform all parties as required of the spill. - Complete the Injury/Near Miss Form
	10.	**Restock Materials** - Place restocking order for any used material Ensure that absorbent materials and safety equipment used in any clean up operation is replaced.
	11.	**Review Contingency Plans and Procedures**

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SAFE HEALTH CARE — SPOT THE HAZARD ASSESS THE RISK FIND A SAFER WAY EVERYDAY

HAZARDOUS WASTE DISPOSAL FORM

DATE: _____

USER NAME	
DEPARTMENT	
PHONE NUMBER	

Please label all containers clearly with the chemical name(s).
Containers with unknown or potentially explosive contents will be handled separately. Please contact Facility Management if these are present.
Please avoid the use of trade names, abbreviations or chemical formulas for chemical names.
THIS SHEET MUST BE FILLED OUT AND BROUGHT WITH THE WASTE AND A COPY OF THE MATERIAL SAFETY DATA SHEET FOR THE PRODUCT

CHEMICAL NAMES	Number of Containers	Container Size

Facility Management will contact the Hazardous Waste Disposal Company and arrange for pick up of waste products.

A copy of the complete form must be placed on file, copy to Occupational and Environmental Safety & Health, Health & Safety Committee and Disaster Planning Committee.

Formatted for Avery 5168 adhesive labels.

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Waste Tag

To be attached to waste container

Chemical Name(s)	Conc.
1. _____	____%
2. _____	____%
3. _____	____%
4. _____	____%
5. _____	____%

Total volume: _____

Hazard (s)

check all that apply

- ❑ Flammable
- ❑ Corrosive
  pH: _____
- ❑ Toxic
- ❑ Reactive
- ❑ Other *specify*: _____
- ❑ Biohazardous
- ❑ Oxidizer

If biohazardous, has this material been sterilized?

- ❑ Yes
- ❑ No

NOT FOR USE WITH BIOHAZARDOUS WASTE

Generator information

Name:_____ Dept: _____

Phone #: Start Date:_____

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Waste Tag

To be attached to waste container

Chemical Name(s)	Conc.
1. _____	____%
2. _____	____%
3. _____	____%
4. _____	____%
5. _____	____%

Total volume: _____

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check all that apply

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Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg

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1. _____	____%
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3. _____	____%
4. _____	____%
5. _____	____%

Total volume: _____

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check all that apply

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- ❑ Corrosive
  pH: _____
- ❑ Toxic
- ❑ Reactive
- ❑ Other *specify*: _____
- ❑ Biohazardous
- ❑ Oxidizer

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- ❑ Yes
- ❑ No

NOT FOR USE WITH BIOHAZARDOUS WASTE

Generator information

Name:_____ Dept: _____

Phone #: _____ Start Date:_____

Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg

Waste Tag

To be attached to waste container

Chemical Name(s)	Conc.
1. _____	____%
2. _____	____%
3. _____	____%
4. _____	____%
5. _____	____%

Total volume: _____

Hazard (s)

check all that apply

- ❑ Flammable
- ❑ Corrosive
  pH: _____
- ❑ Toxic
- ❑ Reactive
- ❑ Other *specify*: _____
- ❑ Biohazardous
- ❑ Oxidizer

If biohazardous, has this material been sterilized?

- ❑ Yes
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NOT FOR USE WITH BIOHAZARDOUS WASTE

Generator information

Name:_____ Dept: _____

Phone #:_____ Start Date:_____

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SAFE HEALTH CARE — S SPOT THE HAZARD A ASSESS THE RISK F FIND A SAFER WAY E EVERYDAY

EMERGENCY EXERCISE/ ACTUAL INCIDENT EVALUATION FORM			
Site Location:			
Date:		**Time:**	

Summary of Events:

Recommendations:

INCIDENT COMMANDER/SENIOR RESPONDER:	
Date:	

Copy to:

- ☐ WRHA Site/Program Manager
- ☐ Site/Program Incident Commander
- ☐ Site/Program Safety and Health Committee
- ☐ WRHA Disaster Management
- ☐ WRHA Occupational and Environmental Safety & Health

***Attendance sheet must be attached for evacuation exercise (Code Green).**

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S SPOT THE HAZARD
A ASSESS THE RISK
F FIND A SAFER WAY
E EVERYDAY

OPERATIONAL PROCEDURE
Hazardous Materials Spill – Code Brown

Appendix G: Contents of Training Sessions

TRAINING SESSIONS TO INCLUDE – basic outline

1.0 General Orientation

2.0 Managers/Supervisors Training

3.0 Safety and Health Committee

4.0 Response Personnel

5.0 Others

Chemical Spill Response Training

Presented by:

Winnipeg Regional Health Authority
Caring for Health

Office régional de la santé de Winnipeg
À l'écoute de notre santé

SAFE HEALTH CARE

SAFE
SPOT THE HAZARD
ASSESS THE RISK
FIND A SAFER WAY
EVERYDAY

Learning Objectives

- After this presentation, attendees will be able to recognize and apply:
  - Spill Prevention Techniques
  - Responsibilities
    - Managers/Supervisors, Employees, and Spill Response Team / Leader
  - Spill sequences which may be encountered
  - Appropriate action to be taken in each instance
  - Spill Kit and contents

Introduction

What is a chemical spill?

Why do they happen?

Where do they happen?

What is emergency response?

Responsibilities

- All have responsibilities:
  - Managers/Supervisors
  - Workers
  - Response Team
  - Team Leader

Manager/Supervisor Responsibilities

Managers/Supervisors must ensure the following exist in their work area:

- Up-to-date inventory of chemicals
- Material Safety Data Sheets for all chemicals which are always accessible
  - *When new chemicals are ordered, replaced or no longer used, you need to ensure that your inventory and MSDSs are updated by contacting your WHMIS Coordinator.*

Manager/Supervisor Responsibilities

Ensure that employee training includes:

- Proper handling of chemicals
- Spill prevention
- Spill clean up/containment and Code Brown Procedures
- Proper disposal of hazardous waste

Ensure training is documented.

Manager/Supervisor Responsibilities

Ensure you know what to do in case of a spill

- Code Brown Procedures (handout)

Workers Responsibilities

Ensure:

- You are trained in the proper handling of chemicals prior to use.
- You wear/use the appropriate personal protective equipment when using chemicals.
- You know what to do in case of a spill (minor and major)

What is the Spill Response Team?

- Designated employees who have completed Chemical Spill Response training who respond to Code Brown alerts

A Code Brown Alert signifies a chemical spill that cannot be managed by the staff of the area where the spill occurred

Team – Who are they?

- Day Shift:
- Evening Shift:
- Night Shift:

Insert names or positions of your spill responders – remember you need 24 hour response

Spill Response Team Responsibilities

- Respond to code brown announcements through intercom paging and assist the team leader during an incident.

- Apply skills acquired during training when responding to a spill

- Participate in the incident debriefing

Spill Response Team Leader

- The “first on-scene” member of the Spill Response Team.

Switchboard Operator Responsibilities

- If switchboard is called:
  - Switchboard employee will announce “Code Brown and exact location of the spill” three times via the Emergency Overhead Paging System.

SPILL PREVENTION

Spill Prevention

- Provide workers with appropriate training
- Prepare for an emergency……

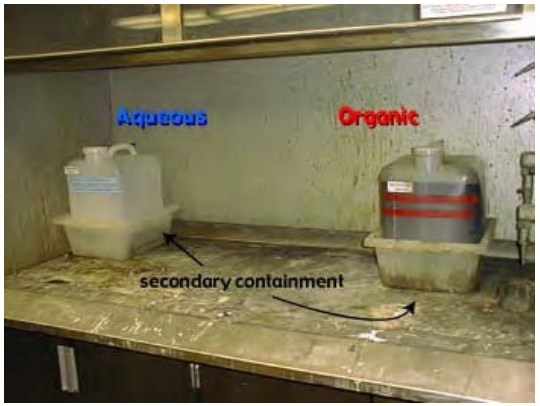
Spill Prevention

- Whether being used or stored, chemicals that are incompatible should not be placed side by side.
  - Safe placement should be determined
  - Label the wall with the chemical name to ensure that when containers are changed the placement will remain the same

Spill Prevention

- Secondary Containment
  - Large volumes

  - Small Volumes



Spill Prevention

When loading, unloading or transferring hazardous materials, employees will:

- Inspect drums and containers for leaks
- Ensure all containers are labeled and have lids
- Ensure all containers are placed within secondary containment when necessary
- Ensure all containers are placed in their pre-determined location

Spill Prevention

- Use only the amount you need
- Tightly cap all containers prior to storing or transporting
- Good housekeeping
- Restricting use of forklifts in the area
- Receiving areas – have secondary containments available in case of leakage

SPILL PREPAREDNESS

Spill Kits

- Locations
  - Be familiar of these locations.
  - Know where they are
  - They need to be accessible at all times

Spill Kit Contents

- Absorbent Pads
- Absorbent “snakes”
- Polyform F (Neutralizer for Formalin/Glutaraldehyde – Metricide/Cidex)
- Garbage Bag

Review of contents

- Personal Protective Equipment
  - Gloves
  - Goggles
  - Respirator

PPE

- Donning and Removal
  - Gloves
  - Goggles
  - Respirator
  - Gown

Respirators

- Half Face or Full Face
- Fit Test
  - Done every 2 years
  - Cannot wear if you have a beard
- Medical Evaluation
  - Certain medical conditions will restrict wear of respirators
- Maintenance
  - Do not use other than your own
  - Inspect before use
  - Clean with alcohol prep pads after use
  - Keep sealed in a bag
  - If cartridge is used frequently (ie everyday – changing of cartridge will be required on a weekly basis)
  - If infrequently, consult with Safety and Health.

Respirators

- Demonstrate
  - Donning of respirator

Chemical Spill Drills

- OESH to ensure drills are held and documented.
- Debriefing should occur
  - Lessons learned
  - Corrective Action
  - Implementation of corrective action

Spill Response Team Training

- Training
  - Spill Response
    - Containment and Clean Up
    - Spill Kit Review

Spill Response

Spill Response

- When code brown is announced, spill response team will respond
  - Spill response team to take available spill kit to the scene
  - First person to arrive becomes the spill response team leader who will lead the response

Priorities

When dealing with a spill always remember to protect *(in order)*:

PEOPLE

PROPERTY

ENVIRONMENT

Initial actions

1. Entering the scene with appropriate Personal Protective Equipment
2. Assess the situation (minor or major)
3. Injuries?
4. Isolation or Evacuation
5. Containment/Clean Up
6. Reassess situation
7. Assistance (internal or external)

1. Assessing the situation

- What do we need?
  - Attend to the injured
    - Is it safe to enter the room?
    - We need to find out what spilled?
  - Container Labeling
  - MSDS (material safety data sheet)

- Is it a minor or major spill
  - Minor (can be handled internally)
    - Small volume – 1 -2 liters
  - Major (cannot be handled externally)
    - Out of control – more than 4 liters.
    - Flammable material
      - Eliminate ignition sources (if chemical if flammable

Spill Response

- Minor
  - Can be contained and cleaned up by the user using the spill kit that is available in the area
    - Managers/Supervisors will be required to train all employees who use chemicals regularly using the MSDS
  - Cord off the area if appropriate (dependent on traffic/volume, etc)

Major Spill

- Situation becomes major
  - Leader will assess and hazmat to be called when appropriate
- Evacuation required?
  - Area only?
  - Facility wide?
    - This is dependent on situation(hazmat will advise).
    - Emergency preparedness Team (WRHA) will be contacted for assistance if incident command is required.

Spill Response

- If situation becomes worse or the user is not sure how to handle spill, the user is to call her immediate supervisor for assistance
- If supervisor is not sure how to handle the spill, call switchboard and announce code brown.
- Manager/Supervisor to restrict access to the area
- Switchboard is to announce code brown

2. Entering the Scene/PPE

- Never enter until you have put on all appropriate personal protective equipment
  - Respiratory Protection *(must be assigned to one person and fit tested)*
  - Gloves (nitrile)
  - Eye Protection (goggles)
  - Tyvek Suit (if required)
  - Boots (if required)

Injuries?

- Attend to injured or contaminated persons and remove them from the exposure if you can do so without endangering yourself.
- Read MSDS for First Aid Information
- Use of eyewash stations
  - Plumbed or stand alone
  - 15 minutes wash

- Code Blue or code specific to your facility for medical emergencies if required

What to do next?

- Let the responders do what they need to do.
- Assist responders in ensuring traffic in the area is restricted or controlled while they deal with the emergency.
- Be available for additional assistance or questions they may have.

3. Isolation or Evacuation

- Isolate the area
  - Notify people in the immediate area
  - Barricade using yellow caution tape
  - Close the door and limit the flow of traffic in the area
- Evacuate the area
- Evacuate the whole building
  - Done through consultation with Hazmat Team, Incident Commander and CEO.

4. Containment and Control

- Contain the spill
  - Blocking the hole
  - Tilting the container to opposite side of leak
  - Obtaining a secondary containment
  - Absorbing the spill with absorbent pads

Control measures for spills

- Neutralization
- Dilution
- Vapour dispersion
- Vapour suppression
- Damming and diking
- Absorption

Neutralization

- Example
  Polyform-F®
  - Formaldehyde
  - Glutaraldehyde
  - 10% buffered formalin, and
  - other aldehydes including formaldehyde-phenol* based embalming solutions.

Dilution

- Diluting with appropriate volume of water until neutralization is reached

Vapour Dispersion

- Opening a window for fresh air intake
- Opening a vent (caution – may not be a good idea unless you know ischematics of the facility)
- Using a fan and placing towards outside air

Vapour Suppression

- Placing absorbent pads on top of the spill
- Covering the container
- Sealing the leak
- Closing doors behind you preventing leakage to other areas (ie traffic)

Damming and Diking

Preventing leakage to sewer drains, etc

Absorption

- Using absorption pads to absorb the chemical spill
  - When you use an absorption pad to clean a hazardous material, the absorption pads and other equipment you used will be hazardous waste. (with exception of reusable items – ie half face respirators, eye protection).

5. Clean up and Disposal

- Clean using:
  - Absorbent pads
  - Broom and Dustpan (if appropriate)

Disposal

- Use garbage bag in the spill kit if material used to clean has been contaminated with hazardous waste
- If neutralized, can be disposed off in the garbage

Hazardous Waste Labeling and Disposal

- If not neutralized, hazardous waste
  - Proper waste disposal
    - Call Clean Harbors
    - Label bag with chemical name
    - Ensure MSDS is attached
    - Clean Harbors will pick up

Reassessing the Situation

- Whether spill is under control or need more assistance

Requiring Assistance

- Internal
  - Assistance from other Spill Responders
- External
  - Assistance from Hazmat – Fire Department

6. Reporting of Spill Incidents

The Employee discovering the chemical spill shall:

- Complete the Injury Near Miss Form (INM)
- Attach a copy of the MSDS to the (INM)
- Submit completed form and appropriate MSDS to the Spill Response Team Leader

The Spill Response Team Leader shall:

- Forward copies of all reports to:
  - Occupational and Environmental Safety & Health (OESH) office Workplace Safety & Health Committee Co-Chairs

The Occupational and Environmental Safety & Health (OESH) office shall:

- Complete and submit, upon request, all required reports to Manitoba Labour as per Workplace Safety & Health Regulation, M.R. 217/2006, Part 2.

7. Replenishment of Spill Kit

- Team Leader is to ensure all used materials are replaced immediately.

8. Incident Debriefing

- OESH to ensure a debriefing is held and the meeting shall include the Co-Chairs of WS&H Committee and the response team, and other stakeholders (as appropriate).
  - Discuss lessons learned
  - Discuss corrective actions and implementation of these corrective actions

Questions???

Winnipeg Regional Health Authority
Caring for Health

Office régional de la santé de Winnipeg
À l'écoute de notre santé

SAFE HEALTH CARE

SAFE
SPOT THE HAZARD
ASSESS THE RISK
FIND A SAFER WAY
EVERYDAY

Review

- What is an emergency response?
- When is an emergency response required?
- What is an incidental release?
- When can you clean up the chemical leak or spill yourself?
- If you are not certain you can clean up the leak or spill, who do you contact?
- What is your emergency number?