**CHAPTER 28 SPILL RESPONSE**

# References

1. [WAC 296-843 Hazardous Waste Operations](http://apps.leg.wa.gov/WAC/default.aspx?cite=296-843)
2. [WAC 296-901 Hazard Communication](http://apps.leg.wa.gov/wac/default.aspx?cite=296-901)
3. [WAC 173-303 Dangerous Waste](https://apps.leg.wa.gov/wac/default.aspx?cite=173-303)
4. [BPPM 50.39](https://policies.wsu.edu/prf/index/manuals/business-policies-and-procedures-manual/bppm-50-39/)

# Appendices

Appendix A: Emergency Response Procedures

# Scope

This chapter establishes chemical spill response requirements for Environmental Health and Safety (EHS) employees. WSU EHS responds to hazardous chemical spills in WSU facilities and on WSU property. When the magnitude or hazards associated with a chemical spill warrant engaging emergency response personnel, EHS collects and provides spill and hazard information. EHS spill response personnel assist with identifying and coordinating necessary evacuation efforts, establish exclusion zones, evaluate spill hazards using monitoring equipment and/or observations and calculations, perform spill cleanup and other necessary functions promoting protection of human health and the environment.

# Responsibilities

Supervisors:

* The EHS Environmental Services Director reviews and approves this plan and associated appendices annually.
* The EHS Environmental Services Director reviews, updates and approves the Contingency Plan(s).
* The EHS Environmental Services Director contacts or designates a responsible individual to engage the Emergency Operations Team (EOT) when warranted.
* Arranges and requires Hazardous Waste Operations and Emergency Response (HAZWOPER) 29 CFR 1910.120 training for all EHS employees engaged in emergency chemical spill response and supervised field training/experience (see also this chapter’s training section).
* Ensures spill response employees are familiar with this plan.
* Requires spill response personnel maintain current medical approval and respirator training and fit tests.
* Coordinates, provides guidance and/or support for airborne contaminant monitoring to evaluate personnel exposure and personal protective equipment selection.
* Arranges and requires medical surveillance as required.
* Assigns personnel to maintain emergency response equipment and stock materials.
* Personal protective equipment requirements are communicated to employees in accordance with this APP’s Personal Protective Equipment (PPE) Chapter.
* Provides oversight or assigns a designee to oversee cleanup activities.
* Evaluates spill response location after cleanup and approves or provides criteria to approve the area for reoccupation by non-spill response trained personnel.
* Coordinates after action/spill cleanup review/debriefing.
* Prepares and provides incident summary to affected personnel and departments.
* Coordinates all communication to regulatory agencies.

Employees:

* Immediately inform their supervisor when hazards outside the scope of the employees training, ability or understanding are encountered.
* Immediately inform their supervisor when cleanup location hazards are inconsistent with, or exceed those assigned/described.
* Attend HAZWOPER (29 CFR 1910.120) training and actively participate in supervised field training and tabletop discussions.
* Familiarize themselves with this plan, personnel not adhering to the contents of this plan may be subject to disciplinary action.
* Maintain current medical approval and respirator training and fit tests.
* Wear personal monitoring equipment.
* Participate in annual medical surveillance (or more frequently as required).
* Maintain emergency response equipment and stock materials.
* Attend PPE training and maintain PPE. Based upon knowledge and training, employees are expected to be capable of identifying the appropriate PPE for a spill response.
* Cleanup spills safely.
* Request an evaluation of the spill response location after cleanup or evaluate location after cleanup per supervisor’s direction.
* Participate in after action/spill cleanup review/debriefing.

# Training

EH&S spill response employees receive the following training referencing [WAC 296-843-200](http://apps.leg.wa.gov/WAC/default.aspx?cite=296-843-200):

* The contents of this APP Chapter;
* A minimum 24 hours HAZWOPER (29 CFR 1910.120) training with 16 hours simulated/situational training and an additional 2 days supervised field experience with 8 hour annual HAZWOPER refreshers thereafter;
* Personnel required to wear self-contained breathing apparatus (SCBA) respirators receive the minimum training identified above, and an additional 40 hours of training emphasizing the use of SCBA and chemical protective clothing (Level B PPE) *Note: EHS personnel do not perform spill response requiring Level A PPE*;
* Engineering and administrative controls (exclusion zone monitoring and entry strategies including the use of existing laboratory hazardous exhaust systems) that may reduce or preclude the need for PPE;
* Available sources of chemical hazard information, including SDS (see also this APP’s Hazard Communication chapter), the NIOSH pocket guide and WSU specific information sources (e.g. laboratory signage or departmental chemical inventories) to assist in identifying potential spill hazards;
* Training documentation is provided to the EHS OHS AD and,
* Re-training will be required when:
	+ There have been changes in the workplace, such as new processes and equipment, which render previous training obsolete;
	+ Changes in the types of equipment that render the previous training obsolete;
	+ When an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the equipment; and/or
	+ When regulatory requirements change.

# Procedures

EHS personnel respond to the varying chemical spills and releases encountered at large research and educational institutions. The EHS Departmental Emergency Response Procedure, prepared for chemical releases based upon associated hazards, is attached to this document and maintained at S:\Environmental Services\Emergency Response, Plans, and Procedures\Procedures and Call Lists.

At minimum, 2 EHS employees will respond to a spill requiring 15 minutes or more to cleanup. Release responses involving biological or radioactive contamination must be coordinated with the Office of Research Assurances (ORA).

**Appendix A**

**EHS Emergency Response Procedures**

**Environmental, Health, Safety (EHS)**

**Emergency Response Procedures**

EHS activates this procedure when someone contacts WHITCOM (911) or WSU Facilities Service Dispatch (509-335-9000) concerning a Washington State University (WSU) hazardous material release or accident. If WHITCOM is contacted, they deploy appropriate emergency response personnel (Pullman Fire Department, Emergency Medical Team, etc.) and contact WSU Facilities Services Dispatcher (509-335-9000) or EHS directly. If WSU Facilities Services Dispatcher is contacted, they should refer to WHTCOM, if appropriate, or follow the steps below.

**Calls During Normal Business Hours**

1. Facilities Services dispatcher or EHS personnel write down the information provided by WHITCOM on the top of the Emergency Response Phone Numbers Document which includes materials involved, quantity of material, incident location (building, room number, etc.), contact name, contact phone number, contact meeting location, and whether radioactive material, biohazardous material, or the Nuclear Radiation Center are part of the incident. If Facilities Services dispatch is contacted, they will forward information to EHS.

2. The EHS personnel receiving the call provides information to appropriate department support personnel and if possible, forwards call to the individual coordinating the response. EHS responder(s) will identify another appropriate staff member(s) to assist with response and notify the EHS Director or backup.

**Calls After Business Hours**

1. Facilities Services dispatcher writes down the information provided by WHITCOM on the top of the Emergency Response Phone Numbers Document which includes materials involved, quantity of material, incident location (building, room number, etc.), contact name, contact phone number, contact meeting location, and whether radioactive material, biohazard material, or the Nuclear Radiation Center are part of the incident.

2. Facilities Services determines the appropriate call list based on the emergency. Dispatch contacts the appropriate responder using the afterhours call back list by starting at the top and working down the list until someone is contacted. Dispatch gives the information provided by WHITCOM to the responder contacted. Responder provides the dispatcher with an estimated time of arrival.

**Responder Procedures**

1. EHS responders will gather the appropriate response equipment, personal protective equipment (PPE), and if material is known a Safety Data Sheet.

a. PPE and spill cleanup materials can be found at:

i. McCluskey Services Building has emergency response equipment and PPE located in the Chemical Stores warehouse.

ii. The Chemical Stores warehouse is accessed using key W688.

Iii. If applicable, use an Environmental Services truck to respond. The trucks contain PPE and cleanup supplies. The keys for the trucks are hung on the wall across the corridor from McClusky office 137.

iv. The SCBAs are in the Chemical Stores warehouse accessed using key W688.

v. If specific PPE or cleanup material is needed for the chemical involved, gather items prior to going to the cleanup location.

b. Take pictures, documenting the incident, pictures should be used to aid in writing up the investigation or notifying the appropriate agencies if necessary.

c. This document provides procedures for different types of responses. If applicable, take a copy of this document to the incident.

2. Responders go to the contact meeting location. Once the contact is found, responders should verify the information provided by the dispatcher is accurate and determine the status of the incident. Evaluate whether it is necessary to extend exclusion and/or evacuation zone, get additional security, or send out a WSU Alert. If any of the conditions below are met, the Emergency Operations Team should be contacted using the call list below:

***Immediate threat:*** Any developing or anticipated situation which poses an immediate (or continuing) threat to WSU Pullman Campus.

***Leadership and or Alert Notification:*** Fatality or significant disruption of academic, research, or utility/operation. Any developing or anticipated situation which will require activation of the Alert Notification System, the COWS system, posting on the Alert website, or messaging using e-mail list serves.

***Significant Event:*** Any developing or anticipated situation that, because of severity, duration, scope, or impact will involve resources beyond ordinary daily operations or mutual aid.

***Press Attention or Social Media Component:*** Any developing or anticipated event which generates interest or coverage sufficient to warrant a response from WSU to limit disinformation, reduce public concern, or provide mitigating information to the public.

***Policy Input:*** Any developing or anticipated event which will likely require the engagement of or policy input from senior WSU leadership.

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| --- | --- | --- | --- | --- |
| **BUSINESS HOURS** |  |  | **AFTER HOURS** |  |
| Office of Emergency Management | 509-335-7471 |  | Office of Emergency Management | 509-338-0383 |
| Gary Jenkins | 509-335-8548 |  | Gary Jenkins | 509-715-4827 |
| Dawn Daniels | 509-335-4385 |  | Dawn Daniels | 509-592-0428 |
| Jason Sampson - office | 509-335-9564 |  | Jason Sampson | 208-305-2067 |
| Shawn Ringo - office | 509-335-5251 |  | Shawn Ringo | 208-874-3445 |
| Doug Anderson - office | 509-335-7471 |  | Doug Anderson | 509-338-0383 |
| WHITCOM-non emergency | 509-332-2521 |  | WHITCOM-non emergency | 509-332-2521 |
| Whitman Co. Health Department | 509-397-6280 |  | Whitman Co. Health Department | 911 |
| Richard Partain (USDA) | 509-335-2805 |  | Richard Partain (USDA) | 509-335-2805 |
| H2O Environmental | 208-343-7867 |  | H2O Environmental | 208-343-7867 |

3. Visually view scene for laboratory signage or additional contact information.

4. If appropriate, contact Building Coordinator to gather more information or send out a building wide message. A list of Building Coordinators is maintained by Facilities Services dispatch or at <https://myfacilities.wsu.edu/building-coordinator/listing.aspx>.

5. Based upon the information it might be necessary to have additional responders. It is up to the responders to determine if more responders are needed and contact them. All spills involving a chemical release should have at least two EHS employees. If radioactive material, biohazard material or the Nuclear Radiation Center is involved in the incident, someone on those call lists must be notified, and input should be provided before mitigation (step 7) begins.

6. After information has been verified, a determination about need for a WSU Alert has been made, and the appropriate type and number of responders are on their way or on scene the responder should:

a. If there is an Incident Commander (IC): Inform IC that the responders will be entering the scene to determine extent of incident. Once the scene has been evaluated, meet with IC and explain what steps will be taken to mitigate the release and clear the area to allow for re-occupancy.

i. It may be determined that the Incident Command can be transferred to the responder. If so, the IC will turn the scene over to EHS responder and depart.

ii. If the spill is beyond WSU’s capabilities notify the Director of EHS about using outside contractors. IC will remain until emergency response has been completed, site is secure, and only mitigation remains.

b. If there is not an Incident Commander (IC): responders enter the scene to determine extent of incident and after evaluating decide what steps should be taken to mitigate the release and clear the area to allow for re-occupancy. If hazards are found outside of responder’s scope of expertise, contact the appropriate support personnel.

7. Complete mitigation using necessary PPE, spill equipment, and monitors following EHS procedures. The procedure may vary depending on the type of response.

8. Monitoring, if applicable, will be completed to ensure area is free of contamination.

9. After mitigation is completed the responder must notify Facilities Services Dispatch and OEM if a WSU Alert has been issued that area is clear for re-occupancy. If multiple responders were required (chemical, biohazard, asbestos, radioactive material) each individual is responsible for notifying Dispatch the area is cleared.

10. After area has been cleared for re-occupancy, all equipment should be cleaned and put in its correct location. Any supplies used during the response should be replaced.

11. Write a summary of the incident including pictures, mitigation details, any injuries, and steps taken to prevent the incident from happening again.

12. Responders should meet at a later date to evaluate response.

13. Share findings with affected personnel and departments.

Special Notes and Clarifications:

Radiation Safety Office (RSO)

* Outside of the Nuclear Reactor, the amounts and/or concentrations of radioactive material on campus are at levels that spills are cleaned up by the laboratory personnel. RSO will verify cleanup and decontamination has been completed via testing.
* If personnel are injured and contaminated with radioactive material, RSO will assist to ensure that non disposable equipment and buildings (e.g. ambulance, hospital) are decontaminated. The spilled materials are to be cleaned up by laboratory personnel.
* In the event of a mixed waste (radioactive material and chemicals) RSO will not be part of the response team. RSO will provide guidance on the hazards associated with the radioactive material, provide guidance about monitoring equipment, provide any necessary training on use of monitoring equipment, provide readings where the radioactive material becomes a hazard and cleanup should be aborted, and suggestions on how to safely mitigate the release. Once the emergency is over and the chemical hazard has been eliminated, RSO will verify cleanup and decontamination has been completed via testing. If not, lab personnel will decontaminate remaining radioactive materials in the area.
* In the event a spill occurs that is beyond the capabilities of the lab personnel (based on volumes the NRC is the only location), Washington State Department of Health has a list of approved contractors that can clean up the spill. There is no WSU contract in place.

Biological Safety (Office of Research Assurance)

* The amounts and/or concentrations of biohazardous material on campus are typically managed such that spills may be cleaned up by the laboratory personnel. The Biosafety Officer or their designee will verify cleanup and decontamination.
* If personnel are injured and contaminated with biohazardous material, the Office of Research Assurances will assist to ensure that non-disposable equipment and buildings (e.g. ambulance, hospital) are decontaminated. The spilled materials are to be cleaned up by laboratory personnel.
* In the event of a mixed waste (biohazardous material and chemicals), the Biosafety Officer will not be part of the response team. BSO will provide guidance on the hazards associated with the biohazardous material and how the material can be deactivated. Once the emergency is over and the chemical hazard has been eliminated, they will verify cleanup and decontamination has been completed. If not, lab personnel will decontaminate area
* In the event a spill occurs that is beyond the capabilities of the lab personnel, WSU has contracts with EnV Services and Bioquell to clean up the spill.

**WSU Chlorine Release Procedures**

Revised November 28, 2022

Facilities Services maintains six chlorination locations. They are located at well 1, well 6, well 7, well 8, P.E. room 40 and at the Knott Dairy Center. The following procedures apply to all locations:

A minimum of two persons trained in these procedures are required for all cylinder changes; one equipped with a two-way radio and standing outside the open door of the chlorinator room observing the other changing cylinders. At the P.E. Rm 40 location (and at the Student Recreation Center), do not key the two-way radio to transmit until 15 feet away from the open chlorine room door, because the radio will set off the alarm. Both responders must be wearing full face respirators with chlorine cartridges, long-sleeved shirts or coveralls and butyl rubber gloves. The cuffs of their long-sleeved shirts must be pulled down and buttoned over the gauntlets of the gloves. The portable chlorine detector must be turned “On” and be on their person.

Use of Personal Portable Chlorine Detector

Facilities Services stores and maintains personal chlorine detectors in the Plumbing Shop. All personnel using personal chlorine detectors shall be trained on their use, and bump check the detector to ensure the sensor works correctly prior to use. If the device fails the bump check, contact the EH&S Safety Representative or Control Shop for assistance.

Chlorine detectors must be recalibrated every 180 days. There is a countdown clock in the device. The EHS Safety Representative will track calibration and notify you when it is due.

Changing Cylinders

1. Call the Facilities Services Dispatcher prior to entering the chlorination room and give notice that you will be working on the system, as your work could trigger a chlorine alarm at WHITCOM. The Facilities Services Dispatcher will contact WHITCOM.
2. Deactivate the security alarm before opening the doors of the pump room and the chlorinator room.
3. Make sure the handle for opening and closing the cylinder valve is in place on the valve.
4. The portable chlorine detector is set to alarm at a low alarm of 0.5 PPM and a high alarm of 1 PPM. This portable alarm is considered a warning. If the concentration of chlorine increases to greater than or equal to 3 ppm of chlorine gas, a local alarm and strobe will activate. Continue to monitor portable detector closely and immediately close the door and retreat to a safe location upwind if portable detector reaches 9 PPM. Once safe, contact the Facilities Services Dispatcher to ensure that WHITCOM received the alarm and dispatched the appropriate Fire Department. Remain in the area upwind to be available for **advisory** assistance to the Fire Department when they arrive.
5. Notify the Facilities Services Dispatcher to inform them that maintenance activities are complete, Dispatch will call WHITCOM to let them know.

**Unwitnessed Leak Occurs**

1. When an unwitnessed leak occurs, WHITCOM will receive the silent alarm at 3 ppm and will notify the appropriate Fire Department and Facilities Services Dispatcher. For the six locations maintained by Facilities Services, Dispatch should then contact Water Treatment on-duty personnel to provide **advisory** assistance to the Fire Department. The Facilities Services Dispatcher will also contact EH&S.
Water Treatment on-duty personnel must report to the Fire Department’s Incident Commander. Do not enter the chlorinator or pump rooms on any alarm until the facility is cleared by the Fire Department.
2. The Utility supervisor is responsible for notifying University Stores of the leaky valve or cylinder as soon as possible, they will contact the vendor if necessary.

**First Aid Procedures--If liquid chlorine contacts the skin, eyes or clothing:**

*Note: Since the full-face respirator is donned before any work is begun, there should be little chance that liquid or gaseous chlorine will contact a person’s face or eyes.* If safe to do so,lead the injured person immediately to the emergency washing facility if the concentration of chlorine to air in that location does not exceed 0.5 ppm and begin emergency irrigation. If the concentration exceeds 0.5 ppm, lead them to another source of clean water in an uncontaminated location (identify these ahead of time). If chlorine is on the skin or in the eyes, immediately radio Dispatch to call WHITCOM for first aid assistance or call 911 directly. Begin washing all chlorine from the contaminated employee’s skin, eyes, or clothing. Remove all contaminated garments. If the eyes are contaminated, continuously irrigate them until the Emergency Medical Technicians arrive and take over.

**If chlorine gas is inhaled:** If it can be done without exposing yourself to inhalation of the gas, meaning all pertinent PPE is donned, move the exposed person immediately to a safe area and treat the person per first aid training until help arrives.