



Procedures for Emergency Responses to Flooding and Building Water Intrusion

PURPOSE: To establish uniform, sanitary, and systematic procedures for responding to flooding and water intrusion emergencies. A timely and professional response is essential during these emergencies to prevent injuries, limit personnel exposure to pathogens or microbial contamination, and to minimize damage to University facilities and equipment.

DEFINITIONS:

Clean Water: Supply side potable water, not wastewater.

Gray Water/Sewage: Wastewater originating from a drain (sink, toilet, urinal).

PROCEDURES:

A. Notifications

1. Upon discovery of a flood, campus personnel should call Facilities Services Work Control, (537-5175) to provide information regarding the location, intensity and type of flood. Work Control will dispatch required repair and cleanup personnel (as appropriate) and notify EHS. After hours, floods or leaks should be reported to University Police who will contact the Facilities Services Supervisor on call.

B. Evacuation/Perimeter Control

1. In a situation where the flooding rate is hazardous or the waters may contain infectious waste or other hazards, staff occupying the area may be instructed by Facilities Services personnel or other responders to evacuate the area. If conditions warrant, critical papers or equipment can be removed from impacted areas *as long as these actions do not compromise personnel safety or interfere with emergency response efforts.*

2. Perimeter control must be established by Facilities Services personnel in the affected area to prevent injury, to minimize exposure, and prevent contamination from being carried throughout the affected building.

3. Without entering the affected area Facilities Services personnel will cordon off affected areas, including the elevators if necessary. This can be done with barricade tape, cones, or any other device that will serve to prevent entry into the area. The barricades should be a minimum of ten (10) feet from the edge of the affected area. Remember to take into account the possibility of the affected area expanding due to continued water flow. Facilities Services personnel will also control and divert traffic in and around the affected area and notify University Police, if required.

C. Entry and Work Preparations for Gray Water/Sewage Incidents

Entry and Decontamination Procedures

1. Responders crossing the barricade perimeter and entering the affected areas will don the appropriate Personal Protective Equipment (PPE) (i.e., impervious boots, impervious gloves, goggles, and face shield and protective clothing if splashing is likely) prior to crossing the barricades. Personnel with open sores are not permitted to work in contaminated areas unless the sores can be completely protected from contact with contamination.
2. If any Facilities Services personnel plan to cross the barricades and enter the affected area a Decontamination Zone will be established prior to entry. All personnel who have been in the affected area are expected to proceed through the Decontamination Zone upon exiting the affected area.

Setting up Decontamination Zone

- a. Either a set of disinfectant soaked disposable absorbent pads or a disinfectant tray with a shallow disinfectant solution which will be placed on a clean area of the floor close to, but not in, the affected area.
- b. A bucket of disinfectant solution must be prepared and placed at the same location as the foot disinfectant station. A separate rinse bucket filled with clean, clear water should also be prepared and placed beside the disinfectant bucket. These buckets should be placed onto a table or other device that will prevent the worker from having to bend over to access the buckets. Paper towels or other drying towels will be stacked on the table to allow the worker to dry the gloved hands. A trash receptacle should be placed close by for disposing of the used drying towels.
- c. Anti-Bacterial hand soap will be placed on the table or other elevated location near the foot disinfectant station.
- d. Clean disposable absorbent pads damped with water will be placed on the floor after the disinfectant station close enough to allow a person to step from the disinfectant pads or tray directly onto the clean, damp absorbent pads.
- e. Clean, dry disposable absorbent pads will be placed after the clean, damp disposable absorbent pad station close enough to allow a person to step from the damp absorbent pads directly onto the dry absorbent pads to dry the bottom of the shoes of people passing through.

3. The procedure for exiting the affected area and proceeding through the Decontamination Zone is as follows:

Note: Leave all tools in the affected area until the job is done.

- a. Approach the Decontamination Zone from the affected area. Carefully place one foot and then the other into the decontamination solution or onto the decontaminant pads.
 - b. If using the decontamination solution keep both feet in the solution for at least ten (10) seconds. There should be enough solution to provide one (1) inch of fluid up the sides of the shoes. If using decontamination pads stand on the pads for at least (30) seconds.
 - c. The worker should be able to reach the disinfectant and rinse bucket while standing at the decontamination station. Place gloved hands into the disinfectant solution bucket and gently rub gloved hands together. Keep gloved hands in the decontamination solution for at least thirty (30) seconds.
 - d. Place gloved hands into the clean, clear water bucket and gently rub hands together. Use paper towels to dry the gloved hands then place the used paper towels in the trash receptacle.
 - c. Next, step onto the water dampened adsorbent pads placed after the decontamination solution or decontamination pads. Wipe your feet on the pads and then step onto the dry pads where you will, again, wipe your feet.
 - e. PPE can then be removed and placed into plastic trash bags for disposal.
4. For persons who have had more significant contact (other than the bottom of their shoes or gloved hands) with gray water or sewage a more detailed decontamination may be required. This can range from a simple hand-washing with anti-bacteria soap to a complete shower and clothing change. The EHS representative will help determine the extent of decontamination. Typically, more extensive decontamination can be done in showers located throughout the campus.
 5. When the job is finished a separate set of two-five (5) gallon buckets can be prepared and placed near the Decontamination Zone for the decontamination of equipment used during the clean up. One bucket should have a disinfectant solution and the second bucket should have clean, clear water. A brush can be placed into the bucket of disinfectant solution to help remove debris from the equipment. Personnel must be wearing PPE while decontaminating equipment. To decontaminate equipment

(squeegees, vacuum heads, etc.) simply place them into the disinfectant bucket and gently scrub the surface of the equipment. Rinse the equipment in the clean, clear water bucket and let the equipment dry.

6. Occupant equipment (e.g. computers, radios, etc.) that has been contaminated by sewage or gray water and must be salvaged by the occupants of the affected area can be safely bagged by responders in plastic trash can liners and removed from the area to await decontamination. Important papers and porous materials that have been contacted by contaminated water can also be bagged in plastic trash can liners, sealed, and delivered to certified water damage recovery specialists.

D. Entry and Decontamination Procedures for Non-Sewage Clear Water Floods

1. Clear water floods do not cause the pathogenic concerns that sewage floods do and because of that no decontamination is required unless specifically called for the EHS Department.
2. Materials affected by a clear water flood may require less stringent decontamination procedures. EHS representatives will provide guidance on whether decontamination is required and, if so, how it is to be accomplished.

E. Containment Materials

1. Facilities Services shall maintain a rapid-response and containment kit. (Inventory described separately.)
2. Responders shall place spill barriers around the affected areas in order to contain the flood.
3. Reusable spill barriers shall be decontaminated by responders with disinfectant and returned to storage.

F. Corrective Actions

All corrective actions will follow as closely as reasonable the guidelines developed by the Institute of Inspection, Cleaning and Restoration Certification (IICR) and identified in the ANSI/IICRC S-500 standard. The following brief procedures give an overview of immediate actions but for more detailed procedures the ANSI/IICRC S-500 Standard should be consulted. Bacteriological sampling to confirm sanitation effectiveness will be conducted by the EHS Department when necessary.

1. Response to a major flood shall be immediate upon notification that an incident has occurred to avoid injury to persons, damage to buildings and equipment, and the growth of mold in wetted materials.

2. Floods or spillage related to local plumbing failure will be handled by Facilities Services maintenance personnel. Initial responders shall isolate the source of water intrusion as soon as possible. As repairs are conducted, all employees entering the affected areas shall wear the appropriate personal protective equipment (see Section C).

3. Custodial Maintenance shall remove water by mop or wet vacuums that are designated for such use. All collected liquid must be poured into the sanitary sewer system (Do not pour into roadways, landscaped areas, or storm drains.).

4. Facilities Services shall install dehumidifiers in affected area to aid in the drying process.

5. If required, Facilities Services shall remove cove base, if drywall was wetted, to aid in the drying of the drywall.

6. All wet ceiling tiles shall be removed by the Facilities Services. The ceiling tiles shall be replaced as soon as possible, but not before the source of the flood has been remedied.

7. Dry or discard wet items. Discard any contaminated food. Clean or discard contaminated items. Move wet items from floor to facilitate drying of floor or carpet, and wetted items.

8. Custodial Maintenance staff shall mop floor with disinfectant after wet materials are removed.

9. Carpet Drying – For clean water floods, Custodial Maintenance (or designated contractor) will extract water from wet carpet using wet/dry vacuums, and then sanitize and disinfect.

For gray water/sewage floods, Custodial Maintenance will only extract water from wet carpet using wet/dry vacuum designated for such use

10. Contaminated carpet or carpet tiles requiring removal, shall be removed by Facilities Services. If the carpet cannot be removed without disturbing underlying flooring, EH&S will coordinate the sampling of the flooring and mastic if any of the materials might be asbestos-containing materials (ACM).

11. Facilities Services, using a moisture meter, shall measure moisture content in drywall and identify the areas that require removal.

12. Non-essential contaminated files and paper shall be discarded. Remove essential paperwork from the flooded area to a location where it can be dried, photocopied, and then discarded. Leave all file cabinet and desk drawers open to facilitate air-flow and drying. Never let paper products become moldy. Consider the use of document restoration companies.

13. Custodial Maintenance, in conjunction with the affected department, shall disinfect all reusable equipment in the Decontamination Zone.

14. All staff shall use the Decontamination Zone when leaving the flood area.

15. Responders shall place contaminated disposable items (i.e. personal protective equipment, wet carpet and ceiling tiles) in plastic bags, and discard in the regular trash.

F. Exposure Procedures

1. Any personnel who contact contaminated materials with unprotected skin must immediately:

- a. Proceed to the Decontamination Zone;
- b. Wash contact area with Anti-Bacterial soap;
- c. Have the contact area inspected by the EHS representative or proceed to the Student Health Center for inspection of the contact area.

2. It is anticipated that personnel working in the affected area will contact contaminated materials while protected with PPE. The purpose of the PPE is to prevent contaminated material from contacting the worker. If PPE should become torn or damaged in some way that it can no longer protect the worker the PPE must be replaced. The worker will leave the affected area, proceed through the decontamination station, and then don undamaged PPE before re-entering the affected area.

G. Administrative Procedures

(Discuss documentation requirements for insurance and FEMA claims)

H. List of equipment contained in rapid response and containment kit.