Chemical Spills

A. Policy
The following plan has been developed to minimize the severity of damage to human health and the environment in the event of an unexpected hazardous materials release.

B. Objective
Accidental release of chemicals may pose a significant threat to immediately involved individuals, emergency response personnel, the public at large, and the environment. The purpose of this policy is to clearly define the responsibilities of all parties involved in such events at NDSCS, and the procedures established to minimize potential danger.

C. Incidental vs. Emergency Releases
Accidental release and spillage of chemicals is an inevitable, daily occurrence. However, it is expected that users of chemical substances will be able to competently and safely manage the majority of such spills without the assistance of the Emergency Response Team. Small spills, termed Incidental Releases, may be addressed locally by lab personnel, maintenance or other personnel if the spill meets the following criteria:

The release is controlled and not likely to migrate to adjacent areas or be released to the environment outside of the building.

The individuals conducting the clean up normally occupy the area where the spill occurred, were involved in the event leading to the spill, or regularly work with the material spilled.

The size of the spill, and the hazard posed by the spilled chemical is such that no danger of bodily harm or toxic exposure to the individuals conducting the clean up can occur.

Individuals conducting the clean up fully know and understand the hazards posed by the spilled material, and the measures necessary to protect themselves from exposure or harm.

Individuals conducting the clean up have access to all equipment needed to conduct the clean up, such as appropriate absorbents, non-sparkling tools, dikes, HEPA vacuums, and disposal bags, and training in their use.

Individuals conducting the clean up have access to all necessary personal protective equipment, and have been trained in the selection and use of the equipment which is appropriate for the specific chemical spill.

D. Emergency Phone Numbers

AGENCY	PHONE
Office of the President - President	671-2221
Campus Police	911 671-2233
Safety Coordinator	671-2906
Wahpeton Police Department	911 642-7722
Wahpeton Fire Department	911 642-7777
Richland County Emergency Management Agency	642-7788
Richland County Sheriff Department	911 642-7711
St. Francis Hospital	643-3000
Breckenridge Ambulance Service	911 643-2636

E. Emergency Recognition and Prevention

1. Releases to the environment

Few opportunities for environmental release exist at NDSCS. In the event of such a release (e.g.. oil, fuel spill from vehicles), Safety Coordinator, with the aid of Campus Police will evacuate, isolate and cordon off the affected area. Safety Coordinator will be responsible for obtaining appropriate contract Emergency Response services, and carrying out all requisite notification to city, state and federal agencies.

2. Chemical Spills - Lab related

When notified that a spill or release has occurred in a laboratory area, the Safety Coordinator or Campus Police will obtain additional details of the potential product and severity of conditions likely to be encountered. When this information has been obtained the Safety Coordinator or Campus Police will notify the Command Officer. The Command Officer will make three critical decisions from the information:

Whether the chemicals or conditions involved preclude any possibility of safe entry by NDSCS personnel. This might occur for example in the case of continued flooding, with active bottle breakage in a lab known to contain water-reactive metals, or in the case of flammable or explosive materials in the presence of active ignition sources or thermal reactions. These cases require evacuation, isolation of the area, and notification of appropriate city and state agencies.

Whether the chemical or conditions warrant the presence of suitability trained and equipped back-up personnel to effect rescue and, whether the chemical spilled or the conditions of the spill pose a respiratory hazard, requiring respiratory protection.

3. Spill Containment

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

a. Shut-off valves: Shut-off valves may cause spills or releases. Ensure that all shut-off valves on the affected cylinder or/and drums are properly closed and secured.
b. 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 due to the possibility of sparking.
c. 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.
d. Over packing: Over packing is accomplished by placing a damaged container into a larger undamaged container.

4. Confinement

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

a. 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.
b. 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.
c. 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.

5. Safe distances and places of refuge

The safety coordinator and the campus police shall assess the potential for the spread of contamination based on the physical characteristics, quantity, and other circumstances of the spilled substance, and determine safe distances and places of refuge.

6. Site security and control

Prior to the arrival of Campus Police or Safety Coordinator, the individuals creating the spill are responsible for ensuring that no one enters the immediately affected area.

7. Evacuation Routes and Procedures

It is the responsibility of the Command Officer to evaluate the hazard posed by a chemical spill, and determine need for and extent of area or building evacuation.

* Emergency medical treatment and first aid

Emergency medical treatment will be assessed by Student Health Services. Treatment will be provided by St. Francis Hospital.

F. 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:

a. PhD Lite Gas Meter to determine if the atmosphere is at an explosive level and if adequate oxygen is present.

G. Chemical Spill Response

Do NOT attempt to clean up a spill is any of the following conditions apply:

a. More than one chemical has spilled.
b. Quantity spilled is more than the available absorbent or the spill is greater than one liter.
c. The chemical is classified as a toxic or poison.
d. The chemical is highly flammable or explosive.
e. The substance is unknown or you are uncertain of the hazards of the substance.
f. You are uncomfortable in the situation.

If you are unable to deal with the release, adhere to the following steps:
Incident Notification

a. Immediately upon discovery of an emergency incident related to the release of a chemical, notify the Campus Police at 3-2233 to report the incident.
b. Evacuate the area.
c. The Campus Police shall immediately notify the Safety Coordinator at 3-2906.

Site Control

a. Site shall be controlled and maintained by the Campus Police or Wahpeton Police Department.
b. No one will be allowed to enter the area unless authorized.

If you are unable to clean up the spill without assistance, adhere to the following steps:
If the chemical spilled is a liquid, respond as follows:

a. Identify the chemical spilled to determine if you are capable of cleaning up the spill safely.
b. Refer to the container label and/or Material Safety Data Sheet (MSDS).
c. Put on the appropriate personal protective equipment before cleaning up the spill.

d. Choose the proper neutralizing agent for the spill.
e. Apply neutralizer or absorbent material as follows:
    i. Encircle the chemical spill with neutralizing or absorbing material.
    ii. Encircle spill and apply neutralizing or absorbing material to center of spill.
    iii. If it is a caustic or acid spill, read neutralizing container to determine the correct contact time for material to be neutralized.
    iv. Once spill has been neutralized, vermiculite or general absorbent can be added to absorb remaining spilled material.
    v. Sweep/shovel up spilled material and ensure area is completely neutralized by using pH paper (for caustic and acid spills only).
f. Dispose of materials (e.g., gloves, brooms, paper towels) used to clean up the spill inside a sealed, leak proof bag or container (e.g., zip lock bag, taped plastic bag).
g. Label and dispose of all bags or containers as hazardous waste.
h. Contact the Physical Plant at 3-3213 for hazardous waste collection.

If chemical spill is a powder, respond as follows:
a. Identify chemical spilled to determine if you are capable of cleaning up the spill safely.
b. Refer to the container label and/or Material Safety Data Sheet (MSDS).
c. Put on the appropriate personal protective equipment before cleaning up the spill.
d. Sweep up spilled material carefully to prevent generation of dust.
e. Place in sealed container (e.g., ziplock bag) and label container with its contents.
f. Dispose all materials (e.g., gloves, brooms, paper towels) used to clean up the spill inside a sealed, leak proof bag or container (e.g., zip lock bag, taped plastic bag).
g. Label and dispose of all bags or containers as hazardous waste.
h. Contact the Physical Plant at 3-2313 for hazardous waste collection.