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Policy
for
Working Alone

REVISION

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1. PURPOSE AND SCOPE

1.1 Purpose

1.1.1 The purpose of this document is to establish the requirements for working alone in the Colleges of Nanoscale Science and Engineering (CNSE) buildings at SUNY Polytechnic Institute. Generally, it is prudent to avoid working alone in the cleanrooms, laboratories, or on high risk operations.

1.1.2 To ensure that the hazards of the chemicals, gases, processes and equipment used at CNSE are evaluated; and that the information concerning their hazards is clearly identified and conveyed to those who work with or around these chemicals, gases, processes and equipment; and to determine whether such a person can work alone.

1.1.3 To ensure that all employees and students understand the requirements of this policy prior to entering their work area.

1.2 Scope

1.2.1 This policy shall apply to all CNSE employees, tenant employees, students and interns, temporary employees, visiting researchers, contractors, subcontractors and anyone working in the CNSE laboratories, regardless of affiliation.

1.2.2 This program applies to all areas or job functions performed at this facility which involve, are adjacent to, or could produce, a recognized hazard capable of overcoming or immediately incapacitating a person to the point where they are unable to directly control the hazard or summon help.

1.2.3 This procedure does not address response to emergency situations by CNSE ERTs or outside agencies. These are covered in detail in *EHS-00024 Fire Response and Building Emergency Evacuation Plan*, and *EHS-00019 ERT Organization SOP*.

2. HOURS OF OPERATION

2.1 The CNSE facility is a 24-hour operation; therefore hours of operation at the CNSE complex have been established as 12:00 am -12:00 am Monday through Sunday. Normal working hours are from 7:00 am – 5:00 pm Monday through Friday.

2.2 Students have access to the NFS/NFE common areas, student study areas and student computer labs on a 24/7 basis. All other buildings (NFX, NFN, CESTM, etc.) are accessible to students from 6:00 am – 9:00 pm Monday through Sunday.

3. RESPONSIBILITIES

- 3.1 It is the responsibility of each Supervisor, Department Manager or Professor to ensure their employees and students are aware of this policy; and to know when and under what circumstances this policy applies.
- 3.2 It is the responsibility of all laboratory users to inform others in the area regarding the extremely hazardous activities that they will be performing and to obtain a buddy, when necessary.

4. ACTIVITIES

- 4.1 **Non-hazardous Activities:** Activities or areas where the risks are not significantly increased. The risks of these activities are comparable to everyday living situations.
- 4.2 **Hazardous Activities:** Activities or areas which present the potential for significant, although not life-threatening or incapacitating injury or illness.
- 4.3 **Extremely Hazardous Activities or Locations:** Activities or locations, which present the potential of imminent danger to life and/or incapacitating injury or illness. These activities and locations require the use of the "Buddy System".
- 4.4 **Guidance for Evaluating Hazard Level:** The following table is intended to provide guidance for evaluating the hazard level of a particular area or activity. The manager, supervisor or principle investigator need to evaluate procedures or processes and determine the appropriate risk level. EHS can assist in this evaluation. This list is not intended to contain all potential scenarios which may occur at CNSE.

CNSE Laboratories:			
Risk Level →	Non-hazardous:	Hazardous:	Extremely Hazardous:
Area	<ul style="list-style-type: none"> • Offices • Classroom/Lecture Hall • Public Areas • Metrology or other labs with no chemicals in use 	<ul style="list-style-type: none"> • Research Labs in CESTM and NFE • Metrology Labs with chemical use 	<ul style="list-style-type: none"> • Research Labs in CESTM and NFE when extremely hazardous activities are conducted.
Activity	<ul style="list-style-type: none"> • Desk Work • Computer Work • Metrology/ Microscope Work 	<ul style="list-style-type: none"> • Work with chemicals with NFPA rating of 2 or less • Work with hazardous Waste • Work with Biosafety Level 1 or 2 (BSL1, BSL2) materials 	<ul style="list-style-type: none"> • Work with highly corrosive, flammable or toxic material with NFPA ratings of 3 or more – dependent upon amount and concentration • Experiments involving any amount or concentration of: hydrofluoric acid (HF), tetramethyl ammonium hydroxide, pyrophorics or water reactives which generate flammable or noxious gas. • Pouring or refilling cryogenic materials • Work with class 3B or 4 lasers, open beam

Other CNSE Areas (Cleanrooms, Subfabs, HPM, CUB, Gas Yard, Interstitial Spaces)			
Risk Level ->	Non-hazardous:	Hazardous:	Extremely Hazardous:
Area	<ul style="list-style-type: none"> • Offices • Classroom/Lecture Hall • Public Areas 	<ul style="list-style-type: none"> • CESTM Labs • All cleanrooms including sub-fabs and mechanical areas • Hazardous waste storage sheds • Chemical Shipping/Rec. 	<ul style="list-style-type: none"> • HPM Corridor • Chemical Mix Rooms • Central Utility Bldg. • HPM Building(s) • Bulk storage areas (gas or liquid) • Any area where extremely hazardous activities occur
Activity	<ul style="list-style-type: none"> • Desk Work • Computer Work • Metrology/ Microscope Work 	<ul style="list-style-type: none"> • Work on enclosed systems • Work in water treatment, DI or acid waste neutralization • Handling/transport of chemicals with NFPA hazard rating of 2 or less • Handling/transport of hazardous waste • Bottle or drum washing • Activities requiring air purifying respirators • Testing of electrical circuits, 30-480 volts • Work on high vacuum or high pressure systems • Use of forklifts or material handling/lifting. 	<ul style="list-style-type: none"> • Live electrical work, 480V or greater • Work with highly corrosive, flammable or toxic chemicals and gases with NFPA rating of 3 or more. • Activities requiring an air supply or SCBA respirator • Replacing/disconnecting valve manifold boxes (VMB) • Entry into a permit required confined space • Hot work operations • Refilling or pouring cryogenic materials • Use of cranes • Work involving moving parts without full LOTO • Any task with the potential for off gassing of a hazardous materials (tool maintenance or cleaning)

5. WORK SYSTEMS

5.1 Extremely Hazardous Work - Buddy System

5.1.1 The Buddy System consists of the employee performing work being constantly within sight or sound of another individual, the “buddy”. The “buddy” must be able/ trained to react appropriately to the hazard(s) involved and call Security in the case of an emergency.

5.1.2 The purpose of the Buddy System is to provide rapid assistance to employees in the event of an emergency.

5.1.3 An individual cannot work on an extremely hazardous activity or in an extremely hazardous location unless the employee uses the Buddy System. Additionally ERTs must be available to provide emergency response. Affected employees and responsible supervisors must ensure that the ‘buddy’ understands their responsibilities. Permits applicable to extremely hazardous (e.g. hot work or non-routine work permit) must be completed and approved prior to initiating the work. The permit shall identify the employees/students performing the work and appropriate procedures, protective equipment, and emergency response procedures/equipment.

5.2 Hazardous Work

5.2.1 Whenever possible, hazardous work shall be done in areas where other employees are present. If this is not feasible (e.g. transporting materials by forklift between buildings), the employee shall have a means of communication such as phone or radio for summoning assistance. Additionally, the employee’s supervisor shall periodically check on the employee to verify their well-being.

6. SPECIAL CONDITIONS

6.1 Continuous Operations:

6.1.1 Cleanroom or laboratory operations involving hazardous substances are sometimes carried out continuously or overnight with no one present. These experiments /processes shall be designed to prevent: the release of hazardous substances during normal; and upset conditions such as utility interruptions (loss of electricity, cooling water and inert gas).

- It is the responsibility of the worker to receive approval from the cleanroom/laboratory operations team prior to conducting such an operation.

- Whenever unattended, lights should be left on, and signs should be posted identifying the nature of the experiment/process, the hazardous substances in use and how to contact the responsible individual.
- If appropriate, arrangements should be made for other workers to periodically inspect the operation.

6.2 **National Weather Service:** is permitted to work on the roof where they shall provide their own emergency assistance in case of emergency.

7. TRAINING

7.1 The Supervisor, Department Manager or Professor shall review the requirements of this policy with the employee, student, intern, as well as contract and subcontract employees.

8. COMPLIANCE

8.1 If the policies described in this document are violated, the general and/or lab access that was provided will be revoked and the individual must be retrained on Safety Orientation (if the general access policy is violated) and Laboratory Safety (if the lab access policy is violated).

APPENDIX A

SAFETY PROCEDURES FOR WORKING IN THE NFX AIR RETURN CHASE

1. PURPOSE AND SCOPE

This appendix establishes safety procedures for employees working in the NFX Air Return Chase (room 249) to perform cleaning activities due to the area's characteristics:

- 1) large enough to completely enter;
- 2) not designed for normal occupancy;
- 3) descending/ ascending a ladder to enter/exit the space;
- 4) must duck under cross beams to access areas to perform job;
- 5) 3-foot clearance in central area that requires cleaning.

2. AREA REQUIREMENTS

These safety items are required in case power should go out in this work area and emergency egress is required.

- 2.1 **Reflective tape on cross beams** Cross beams and surfaces under which employees must duck to access cleaning areas are lined with reflective tape as a bump warning and to help facilitate egress during emergencies.
- 2.2 **Emergency Lights** are tied into generator power in case of power outage.

3. SAFETY RESPONSIBILITIES

3.1 Cleanroom Janitorial Staff

- 3.1.1 Never enter this area alone. Use buddy system whenever working. Buddies should stay within line of sight of each other at all times.
- 3.1.2 Employees should carry a mobile phone (that has reception in the work area) or other communication device whenever entering the area to provide a method of emergency communication.
- 3.1.3 Notify Security whenever entering and leaving this area by leaving your cell phone number and the number of your buddy in their log book at the

Security Desk in NFE Rotunda. Security will call your cellphone in the event of an emergency or evacuation. In the cases where the individual does not have a cell phone or the cell phone does not get reception in that area, Security will issue a radio for the duration of the task.

- 3.1.4 Before entering area to work, post a sign on the door “Employees working inside.” Remove this sign once work is completed and employees have exited the space.
- 3.1.5 Employees working in this area should carry a portable emergency light source (e.g., flashlight attached to vacuum setup or head lamp on hard hat/cap) which would be used for emergency egress only.
- 3.1.6 Wear hard hat and safety glasses when working in this area.

3.2 CNSE Management Responsibility

Enforcing the requirements of this document.

3.3 Emergency Response Team Responsibility

During a building evacuation, perform sweeps of this area. Sweepers must go to floor level to be able to completely see all work areas.