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Policy
for

Equipment Decommissioning

REVISION

Rev No.	DCN No.	Change Summary	Release Date	DCN Initiator	Document Owner
3	DCN0707	Update to include tools that use nanomaterials/CMP operations.	10-19-11	J. Trodden	R. Segura

Prior revision history, if applicable, is available from the Document Control Office.

1. PURPOSE AND SCOPE

1.1 **Purpose:** The purpose of the safety sign-off process, for decommissioning and/or removal of equipment, is to ensure all equipment decommissioning/removal and support systems decommissioning/removal are executed in a manner consistent with applicable codes, regulations and sound engineering practices.

1.2 This process ensures that equipment is decommissioned or removed in a manner that will allow lowest possible risk to employees, operations or maintenance activities.

1.3 **Scope:** This safety sign-off process applies to decommissioning or removal of equipment and support systems. Any equipment, which is being decommissioned or removed, must go through the equipment decommissioning/removal sign-off process, if any of the following criteria are met:

1.3.1 Capital equipment and machinery used directly or indirectly in the manufacturing, testing, and development of products or in the operation of the facility or production support systems at the CNSE Facility.

1.3.2 Capital equipment and machinery involving any of the following:

(a) Hazardous production materials
(b) Electrical power greater than 120 volts
(c) Electrical current greater than 20 amps
(d) Ionizing or non-ionizing radiation
(e) Mechanical guarding
(f) Thermal hazards
(g) Robotics or automation
(h) Safety Interlocks
(i) Nano materials

By necessity, this document is limited in scope. The EHS representative, Equipment Engineer, or Facilities Engineer shall apply professional judgment and knowledge above that which is included in this specification and shall comply with the equipment specific decontamination procedures, set forth in Equipment Decontamination Procedure, EHS-00037.

2. DEFINITIONS

CNSE – College of Nanoscale Science and Engineering

3. RESPONSIBILITIES

3.1 The EHS Department is responsible for providing reviews, in a timely manner, and resolving or escalating all issues on a punch list with which a CNSE employee, Tenant, Contract or Sub-Contract Equipment Engineer or Facilities Engineer does not comply.

3.2 The EHS Department is responsible for identifying items critical for final signoff when requested.

3.3 The EHS Department is responsible for maintaining records of completed Equipment Decommissioning/Removal Safety Sign-off Checklists (EHS-00030-F1) for one year.

3.4 The CNSE, Tenant, Contract or Sub-Contract Equipment Engineer is responsible for obtaining and posting the Equipment Decommissioning/Removal Safety Sign-off Checklist (EHS-00030-F1) at or near the subject equipment.

3.5 The CNSE, Tenant, Contract or Sub-Contract Equipment Engineer is responsible for scheduling the necessary sign-offs.

3.6 The CNSE, Tenant, Contract or Sub-Contract Equipment Engineer is required to obtain the signatures from Facilities Engineering and the EHS Department.

Facilities Engineering is required to meet with the CNSE, Tenant, Contract or Sub-Contract Equipment Engineer to conduct the necessary sign-offs.

4. ASSOCIATED DOCUMENTS

4.1 **SEMI S2-0200 Standard**, "Safety Guidelines for Semiconductor Manufacturing Equipment".

4.2 **SEMI S8 Standard**, "Safety Guidelines for Ergonomics/Human Factors Engineering for Semiconductor Manufacturing Equipment".

4.3 **SEMI S12-0298 Standard**, “Guidelines for Equipment Decontamination”.

4.4 **SEMI S16-0600 Standard**, “EHS Guidelines for Semiconductor Manufacturing Equipment Disposal”.

4.5 **EHS-00030-F1** Equipment Decommissioning Safety Sign-off Checklist

4.6 **EHS-00037** – Decontamination Procedure

4.7 **EHS-00008** – Lockout/Tagout Procedure

5. SAFETY

5.1 Proper personal protective equipment must be worn at all times when decontaminating equipment. At a minimum, the following PPE should be used:

- Chemical resistant gloves
- Safety glasses
- Face shield
- Arm guards
- Chemical apron
- Cartridge respirator- for solvent fumes, acid fumes, dusts
- Airline respirator or Self Contained Breathing Apparatus- for toxic gases
- Tyvek Suit and Shoe Covers- for large jobs where the possibility that contamination may touch clothes. Work on potentially contaminated floors is an example.

5.2 Material Safety Data Sheets (MSDS) are available for all chemicals used at the CNSE Albany NanoTech Facility. Consult the MSDS before conducting decontamination to better understand the hazards and needed precautions for chemicals involved. MSDS binders are located in the clean room gowning areas.

5.3 All hazardous waste materials generated from decontaminations must be properly handled as hazardous wastes in accordance with Hazardous Waste Management Plan. Materials must be properly bagged, sealed, and labeled as hazardous waste. Materials that are corrosive, flammable, oxidizer, or poisonous are all considered hazardous. Examples include decontamination wipes, residues removed from equipment, parts which cannot be cleaned, and used personal protective equipment.

5.4 Some decontamination work may require the use of a cartridge or airline respirator. Any employee who wishes to wear a respirator must first complete respirator safety training, complete a medical exam, and complete a respirator fit test. No facial hair is allowed for respirator users. See Decontamination Procedure EHS-00037 for further details.

5.5 All sources of harmful energy must be locked out and tagged out to prevent accidental start-up or release of liquids/gases. Types of lock-outs will depend on the type of tools to be decontaminated and the energy sources involved. The LOTO Procedure (EHS-00008) should be determined prior to starting work.

5.6 Any questions regarding decommissioning procedures, use of personal protective equipment, chemical hazards, and waste disposal should be referred to the EHS Department site contact: Robert Segura 437-8627 or rsegura@uamail.albany.edu.

6. TRAINING

6.1 CNSE, Tenant, Contract or Sub-Contract employees can perform tool decommissioning of tools so long as the following training courses have been completed and are up to date:

- General Safety,
- Chemical Safety,
- Hazardous Waste Handling,
- Hazardous Gas Handling (for tools involving toxic gases),
- Respirator Safety (if a respirator must be used),
- Lock-out/Tag-out Safety.

7. RECORDS

Completed copies of the Equipment Decommissioning Safety Sign-off Checklists (EHS-00030-F1) will be kept on file in the EHS Department for one year.