Contractor Safety Guide

REVISION

Rev No.	DCN No.	Change Summary	Release Date	DCN Initiator	Document Owner
13	DCN4250	• Removed references to Kiernan Plaza throughout. • Added information about camera use permit (Section 1). • Updated the following sections: Contractor Employee Responsibilities (Section 5.2), Floor Tile Move In Plate Installation (Section 6.9), Hot Work (Section 7.27), Ladders (Section 7.30), Motor Vehicles (Section 9.1) • Moved some sections around. • Minor wording changes throughout.	April 2025	D. Brookhart	K. Rydberg

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

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1 GENERAL INFORMATION AND INTRODUCTION

At the Albany NanoTech Complex (ANC) (“Site”), security, safety, health, and environmental awareness are fundamental components of every activity and must never be compromised. This Contractor Safety Guide (“Guide”) sets forth practices and procedures that apply to work performed on the Site by contractors, contractor employees, vendors, and subcontractors. The Guide is not intended to be all inclusive. This Guide should be considered as the minimum requirements supplementing the contractor’s safety requirements. It is the responsibility of each contracting firm to ensure that its employees comply with this Guide. The Guide shall be made available to all contractors, contractor employees, vendors, and subcontractors.

As part of the Site’s commitment to protect the environment, the health and safety of its students, faculty, staff, and other members of the Site, there is a requirement that all work performed at or for NY CREATES by contractor firms, their employees, and subcontractors must comply with all “Applicable Requirements.” This includes:

- Applicable federal, state, or local laws, regulations, ordinances, or codes
- NY CREATES requirements identified in this Guide
- Their own company’s safety, health, and environmental requirements

Where there is a conflict between applicable requirements, the most stringent requirements apply. It is the contractor’s responsibility to ensure that these requirements are met. Contractor employees with questions concerning safety and health requirements should speak with their management who may discuss them with the NY CREATES Facilities Project Manager (PM), as necessary.

Contractors are responsible for monitoring the implementation of their safety and environmental processes. NY CREATES reserves the right to evaluate contractor work for compliance with safety, health, and other contract requirements. If NY CREATES observes conditions that could impact the facility or employee wellbeing, they will be brought to the attention of the contracting firm for corrective action. Depending on the severity of the hazard, it may be necessary for the shutdown of a job.

Failure to comply with federal, state, and local legal requirements, the terms and conditions of the contract, or the provisions listed in this Guide may result in the removal of a particular Contractor employee, employees, or contracting firm from the project and/or in the disqualification from future work.

Questions regarding the safety, health, or environmental aspects of work on the Site should be directed to the contractor's management. If the contractor's management needs clarification with respect to NY CREATES' safety and environmental guidelines and rules, they should discuss them with the PM. The PM may address guideline clarifications with the NY CREATES Environmental, Health, and Safety Department (EHS).

No pictures may be taken either inside or outside the cleanroom without the possession of an approved NY CREATES Camera Use Permit. This may be obtained by filling out NY CREATES form, **ANT-02001-F1**.

The requirements outlined in this Guide are in no way intended to supersede the terms, conditions, and attachments to any Agreement or Purchase Order between the Contractor and NY CREATES.

2 DEFINITIONS

2.1 **ANC** – Buildings and grounds on Fuller Road, Albany, NY 12203, that houses the partners, programs, cleanrooms, labs, classrooms, offices, and other spaces of New York Center for Research Economic Advancement, Technology, Engineering, and Science (NY CREATES). Also referred to as "Site."

2.2 **Contractor** – Any contractors, subcontractors, construction managers, general contractors, or vendor employee, and/or the owner or employee of any business that is engaged to perform work, whether for tenants or for NY CREATES. Contractors include, but are not limited to cleaners, consultants, construction trades (e.g., electricians, plumbers, carpenters, etc.), engineers, architects, manufacturers' service representatives, programmers, administrator assistants, subcontractors, suppliers, technicians, vendors, etc.

2.3 **EHS** – NY CREATES Environmental, Health, and Safety department who provide EHS oversight.

2.4 **Facilities Project Manager (PM)** – The PM acts as a liaison / facility representative between NY CREATES and the Contractor or tenant performing the work**,** contract administrator, designated representative, or project coordinator responsible for maintaining technical liaison with the Contractor and for determining the adequacy and acceptability of the work supplied by the Contractor.

2.5 **Facility System Owner** – The individual responsible for the overall engineering of a support system. This includes design, commissioning, modification, capacity, balancing, equipment hook-up review, etc.

2.6 **NY CREATES** – New York Center for Research, Economic Advancement, Technology, Engineering and Science

2.7 **PPE** – Personal Protective Equipment

3 EMERGENCY INFORMATION

To report any emergency such as fire, explosion, chemical spill, or medical emergency, go to a safe area and call the emergency telephone number, **518-437-8600 or extension 7-8600.**

Stay on the line; **DO NOT** hang up until the individual you are speaking with has hung up. Emergency response personnel may have questions to ask you or may have specific information to give you about what you can do until help arrives.

4 EMERGENCY EVACUATION AND SITUATIONS

It might be necessary to evacuate if there is a fire, bomb threat, or other emergency. Safe and immediate evacuation of all building occupants is essential. Contract employees must familiarize themselves with emergency evacuation procedures as soon as possible after their initial arrival onsite.

Think Safety. Act Safely. Safety and Security is Part of Every Job.

4.1 Emergency Alarms

1) If the fire alarm and white strobes start to flash, and an audible fire alarm sounds or an announcement to evacuate the building is made, evacuate through the nearest exit and report to the designated Rally Point for the area in which you are located.

2) If the Blue Toxic Gas Monitoring System (TGMS) Alarm lights start to flash and an audible alarm sound, immediately leave the affected area and report to the appropriate rotunda.

3) Remain at the Rally Point or TGMS refuge area until an “All Clear” is given by a member of the Emergency Response Team (ERT).

4) Contractor supervisors shall account for all their employees and let the PM know of their status.

4.2 Fires, Accidents, Chemical Spills, or Other Emergencies

1) Evacuate to a safe area, then immediately notify Security.

2) Provide the type of emergency; your name and phone number; and building column, floor, or outdoor location.

3) Stay on the line to answer questions and get information about what to do until help arrives.

4.3 Accidents and Injuries

1) Notify Security of medical and other emergencies. Security will make notifications to emergency response personnel and assist responding agencies to the exact location. Security will also initiate the ERT response at the ANC.

2) Notify the PM of any property damage that occurs on site.

3) Submit the Contractor Company’s incident investigation report to EHS and the PM within three (3) working days after the date of the incident. Provide detailed corrective actions to prevent a reoccurrence.

4) Maintain Occupational Safety and Health Administration (OSHA) 300 Records and have them available for submission to NY CREATES upon request.

5) The Contractor shall notify EHS department immediately following any on-site work-related severe injury or illness resulting in inpatient hospitalization, amputation, loss of an eye, loss of consciousness, or fatality to its employees.

4.4 Bloodborne Pathogens

1) Contractor shall review and follow **EHS-00012** - Bloodborne Pathogen Exposure Control Plan.

2) Contractors with exposure to bloodborne pathogens or other potentially infectious material (OPIM) shall comply with OSHA 29CFR 1910.1030.

3) Contractors will follow accepted work practices and use PPE as appropriate for job tasks.

4) Contractors will not handle equipment, containers, or bags labeled and/or color-coded as biohazards unless specifically authorized to.

5) Contractors will report all first aid incidents involving the presence of blood or OPIM to their supervisor and the location's emergency telephone number. Trained personnel will perform decontamination of the area. Contractors shall ensure timely evaluation and management of all first aid providers who rendered assistance in order to determine whether or not an "exposure incident" occurred as defined by the standard.

6) Contractors will notify the PM and NY CREATES EHS of any contract employee having or suspected of having active tuberculosis (TB). NY CREATES plans, with assistance from the contract company, for the Public Health Department (PHD) representative to tour the work area. The Contractor's company and the PHD shall arrange for testing and follow-up of contract employees who have been determined to be at risk.

4.5 Emergency Equipment

1) The contractor shall provide emergency and safety equipment required to do the job they are working on, including but not limited to, PPE, fire extinguishers for hot work, air monitoring equipment, fans, and emergency and rescue equipment for confined space entry.

2) Obtain approval from the PM and have an approved **CFM-00005-F1** - Fire Protection System Daily Permit prior to working on fire alarm systems and sprinkler systems.

3) Obtain approval from the PM prior to work on hose stations, emergency eyewash/showers, and fire extinguishers.

4) Do not use fire hydrants as a source of water. They are for emergency use only.

4.6 Fire Prevention

1) NY CREATES fire equipment shall not be used, moved, blocked, or otherwise disabled unless approved by and coordinated with the PM.

2) The contractor shall provide fire suppression equipment and trained personnel to use it when conducting hot work.

NO combustible material shall be stored outdoors within 10 feet of a building or structure.

5 CONTRACTOR RESPONSIBILITIES

5.1 Contractor Management shall:

- Be responsible for the safety and health of their employees.
- Ensure employees read, understand, and follow this Guide. Contractor shall provide documentation to support compliance upon request.
- Comply with the OSHA General Duty Clause 5(a)(1), which states: "Each employer shall furnish to each of his/her employees, employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his/her employees."
- Comply with OSHA 29 CFR 1910 General Industry Safety Standards and OSHA 29 CFR 1926 Construction Safety Standards.
- Obtain all necessary federal, state and local required permits, licenses, and approvals prior to conducting work onsite, including **CFM-00004** – Work Authorization Permits. Required NY CREATES forms can be found on the internet at the Contractor Forms Page.
- Directly supervise and monitor the work of its employees, agents, and subcontractors.
- Hold legal liability for the failure of employees/agents/subcontractors to act in compliance with federal, state and local law, as well as NY CREATES requirements.
- Maintain safety programs to protect employees from hazards through training, procedures, and regular inspections of the work area, work practices, material, and equipment.

- Ensure employees are properly trained. Instruct employees in the recognition and avoidance of unsafe conditions and actions.
- Provide the tools, equipment, materials, and resources for employees to conduct work safely, such as the correct tool for the task or PPE.
- Use all equipment and tools according to manufacturer's instructions, labeling, and/or listing.
- Be responsible for the safety and security of property, including but not limited to, facilities' tools, equipment, and material.
- Maintain OSHA 300 records and rates of occupational injuries and provide them to NY CREATES upon request.
- Audit and maintain the housekeeping of work areas to prevent safety hazards.
- Ensure the necessary pre-task planning is conducted prior to starting work to comply with requirements to perform work in a safe manner.
- Conduct and document a job hazard assessment or evaluations of tasks to be performed in work areas to determine PPE requirements.
- Provide training on all PPE and ensure that all employees use/wear PPE that is appropriate for the work being performed.
- Immediately alert Security and the PM of adverse work conditions; work-related injury, illness, and property damage; and/or close call safety-related incidents.
- Prohibit alcoholic beverages, controlled substances, consumption of marijuana, and weapons on site.
- Follow all NY CREATES emergency instructions, including, but not limited to, alarms, evacuation procedures, and notification procedures.
- Be responsible for any legal liability arising from or in connection with the failure of their employees, agents, and subcontractors to act in compliance with applicable federal, state, and local legislation, law, regulation, ordinance, and code, or NY CREATES requirements.

- Keep the PM fully advised of any work or conditions which may adversely affect the safety of personnel or impair NY CREATES property.
- Ensure all appropriate cautionary devices, safety signs, and/or barricades are in place at or within work areas at all times during work activity.
- Provide signal people and traffic control for roadwork.
- Ensure that employees keep work areas free of safety, health, or environmental hazards.
- Install products with authorization by the product manufacturer.
- Participate and be active members of the Contractor Safety Committee which meets quarterly unless otherwise noted. At least one member of each contractor's safety team or designee will be required to participate.

5.2 **Contractor Employees shall**:

- Read, understand, and comply with this Guide.
- Comply with applicable federal, state and local regulations, their company's safety and health requirements, as well as applicable NY CREATES policies and procedures.
- Comply with all emergency alarms and communications.
- Use only chemical storage containers in good condition to prevent environmental releases.
- Use/wear PPE that is appropriate for the work being done and comply with posted safety signs.
- Cone or barricade construction, trip, fall, or other hazard areas.
- Report hazardous conditions to your supervisor and the PM.
- Report emergencies (e.g., accident, injury, medical, fire, chemical releases) immediately to Security, the PM, and EHS.

- Limit excessive noise, dust, chemical vapors, spills, or flying debris prior to starting and throughout the work. Ensure proper notifications are taken within the Work Authorization Permit and if they are to be generated, utilize **CFM-00004** – Instructions for Obtaining Work Authorizations Permits.
- DO NOT enter restricted areas without prior authorization from the PM.
- DO NOT place or lean tools on or against equipment.
- DO NOT use abusive, profane, or sexually explicit language.
- Comply with electrical safety and Lockout/Tagout (LOTO) requirements. Refer to the Lockout/Tagout (LOTO) – The Control of Hazardous Energy section of this document for more information on LOTO requirements.
- Use only portable electrical equipment with a grounded third prong that must be double insulated, or battery operated.
- Use extension cords only for temporary power to portable electrical equipment.
- Use only Ground Fault Circuit Interrupter (GFCI)-protected extension cords in damp or wet environments. GFCI must be plugged into wall outlet.
- Keep all access and egress routes, aisles, and/or doors clear of obstructions for emergency evacuation at all times.
- Remove from service all unsafe or defective equipment.
- Use proper material handling techniques, with storage and signage.

5.3 Contractor Procedures, Permits, Forms, and Training

Contractor shall obtain a Work Authorization Permit and any required sub-permits in addition to required permits through federal, state, and local governments in order to perform work on the Site. Work requiring the completion of additional permits must be submitted and approved prior to the commencement of work.

Contractors shall obtain all necessary inspections and provide reports and electrical inspections to the PM for NY CREATES' records. NY CREATES permits will list required inspections and reports. For internet access to policies, procedures, permits, and forms go to https://ny-creates.org/policy-page/.

For access to training and badging on the internet go to https://ny-creates.org/resources/ under the training header.

6 CLEANROOM REQUIREMENTS

Contractors working for NY CREATES in cleanrooms and core areas shall abide by the cleanroom work practices outlined in this document and are required to take NY CREATES Cleanroom Safety Training prior to entering the cleanroom. Contractors shall review and follow **OPS-00001** – Cleanroom Protocol Requirements. Since cleanroom requirements may vary from building to building, Contractors shall work directly with their PM for special instructions.

6.1 General Precautions

1) Minimize the potential for product contamination.

2) The special clothing that Contractors must wear in cleanrooms will be provided. For some specific projects, contracts may require Contractors to provide the required clothing if it will impact normal operations of the cleanroom gowning area inventories. Confirm first with contractor's management then PM for questions.

3) Contractors shall enter and exit cleanrooms only through authorized doorways.

4) No paper, food, cardboard, beverages, or wooden ladders are allowed in cleanroom areas.

5) The gowning area shall be kept free of trash.

6) Plastic waste and used cleanroom gloves shall be placed in the appropriate waste receptacles per gowning room protocols.

7) Any time work activities within a cleanroom space have the potential to affect cleanroom quality specifications with regard to particulate count, vibration, fumes, or other contaminants, the Contractor shall review and understand **CFM-01005** – Dirty Work Permit Application Procedure and fill out **CFM-01005-F1** – Dirty Work Permit Application.

6.2 Entering and Exiting the Cleanroom

1) Prior to entering, tools/equipment and carts shall be wiped down with 10% isopropyl alcohol (IPA) in deionized (DI) water.

2) Personal belongings must be secured and jewelry removed. Personal electronic usage must meet cleanroom requirements and be minimized, if possible.

   Only enter and exit the gowning room and cleanroom through designated areas. DO NOT exit the cleanroom via unapproved exits except during emergency situations (i.e., fire or TGMS alarms). To maximize effectiveness, walk slowly though the cleanroom.

6.2.1 Items and Activities NOT Permitted in the Cleanroom Include:

- Candy
- Street clothes including caps
- Wearing cosmetics or jewelry
- Perfume, cologne, or other similar scented products
- Smoking
- Gum, lifesavers, or mints
- “Regular” paper or cardboard
- Styrofoam
- Bubble wrap
- Paper towels
- Scotch tape
- Pencils or felt-tip pens (only ballpoint pens are permitted)
- Personal items (e.g., lunch, tobacco, erasers, paper towels, eyeglass containers and purses)
- Wooden toolboxes or wooden-handled tools
- Rust, oil, or peeling paint on tools or boxes
- Impact-type printers
- Non-cleanroom printer paper
- Materials that have not been cleaned prior to entry
- Hydrocarbon-based aerosol cans
- Personally owned PCs

- Unfastening cleanroom garments or pulling items out through garments while in cleanroom

The Fab Manager must approve any exceptions.

6.3 Gowning Procedure and Rules

1) Review and follow **OPS-00001** – Cleanroom Protocol Requirements. Review documents frequently for updates.
2) Always keep the gowning room clean and dispose of items in the designated area.

6.4 Maintaining Air System Integrity

1) Minimize the loss of cleanroom air – restrictions on dust, dirt, particulate, chemical vapors, temperature, and humidity.
2) Minimize the disruption of unidirectional airflow.
3) Open one door at a time when entering from the growing area or Wipe-Down Area.
4) Seal wall penetrations and use a cleanroom-compatible approved flame sealant when penetrating a firewall.

6.5 Construction Housekeeping Rules

1) Isolate your work area from the rest of the cleanroom with approved anti-static cleanroom Visqueen or other material as directed by the PM.
2) DO NOT accumulate waste. All waste shall be removed daily and placed in proper dumpsters.
3) DO NOT use hand-written or non-laminated signs.
4) Keep work areas clean and neat. Clean as you go.
5) Stack and store materials to prevent trips or other hazards.
6) NEVER store equipment in front of electrical panels, equipment Emergency Off (EMO) buttons, or in floor areas that are marked for no storage.
7) NEVER block eye wash/shower stations, fire extinguishers, pull stations, ERT cages or PPE cabinets, air returns/coils, or access and egress routes.

8) Secure stored ladders so they cannot fall. Take care not to have excess ladders in one area.

9) At the completion of daily work, wipe down the area and remove trash and leftover materials.

10) High-Efficiency Particulate Absorbing (HEPA) vacuum area of work daily to remove debris caused by the construction, tool installation, or tool removal.

6.6 Removing Raised Floor Tiles

1) Contractor shall review and follow all procedures in **EHS-00032** - Floor Tile Removal Procedure.

2) The Contractor is responsible for completion of the Floor Tile Removal Form (**EHS-00032-F1**) and ensuring that a guardrail system, cover notification, and fall protection devices, if applicable, are in place.

3) The removal of raised floor tiles impacts airflow patterns; prior to their removal, obtain approval from the PM.

4) The location and orientation of each tile is unique. Carefully note the position and orientation prior to removing a tile (mark it with cleanroom tape). Replace the tile in the same position when the work is complete and ensure the floor tile(s) are flush with the adjacent flooring.

5) Limit the number of floor tiles to be removed and the duration of their removal.

6) DO NOT remove tiles from below the raised floor.

7) DO NOT remove tiles to create new openings to exit from; exit from openings that are already existing (from previously removed tiles), unless in an emergency.

8) Do not remove floor tiles and/or stanchions from an existing opening or active tool install that has a base or utilities under construction. PCI or 3D Rigging are the only contractors approved to remove or relocate stanchions upon direction.

6.7 HEPA Ceiling Filter Removal / Installation

1) HEPA ceiling filters are fragile and easily damaged—prior to their removal, obtain approval from the PM.

2) Immediately report any filter damage to the PM.

3) If filter replacement is to be performed during normal cleanroom operations, an approved cleanroom barricade made of anti-static Visqueen shall be installed from ceiling to raised floor to prevent further contamination to product. Remove after completion as directed by PM.

4) Check the condition of filters before and after you complete a job to ensure they were not damaged.

5) HEPA filter shall be scanned by an approved particle counter after installation to assure the filter is not damaged and is properly sealed. Document all readings and provide written documentation to the PM.

6) Contractors are responsible for the cost of replacing any filters they may damage.

6.8 Preparing Tools and Equipment for the Cleanroom

1) Equipment shall be brought into the buildings via the dock area.

2) Uncrate and remove the first layer of plastic (if two layers), then move it via an approved path to the Wipe-Down Area.

3) Prior to the move, clean floor load distribution (metal) plates and move equipment (e.g., carts, rollers, etc.).

4) In the Wipe-Down Area, remove the last layer of plastic and wipe down the tool/equipment/material with 10% IPA in DI water.

5) In the Wipe-Down Area or any other location dedicated to the equipment move, cleanroom doors must remain closed and only corridor doors shall be opened when moving equipment into area to be cleaned and then closed during the cleaning process.

6) Wiping pads are folded cleanroom wipes, dampened with the cleaning solution. Do not wring or ball up the pad. Carefully wipe surfaces with the flat pad using slow light strokes in one direction (NOT an up and down motion).

7) Discard the pad after particulate accumulation is visible. Do not rub or wipe the same area repeatedly.

8) When the wipe-down is done off-site, the equipment shall be wrapped with plastic or stored in a plastic bag prior to bringing it into the cleanroom.

9) When the equipment wipe-down is complete, the cleanroom door may be opened, and the equipment moved in. The cleanroom door should be closed immediately afterwards.

10) Cleanroom tape on wheels is not acceptable. All wheel and roller contact surfaces must be in new condition and wiped down before entry into the cleanroom.

6.9 Floor Tile Tool Move in Plate Installation

To reduce the amounts of incidents and injuries related to floor tile move in plates, the following corrective actions are required while coordinating the move-in of tools into the clean rooms.

All equipment move-ins must be communicated and coordinated with ICs, tenants, and NY CREATES Operations as needed. Additionally, the Subcontractors must coordinate the following extra steps:

1) Walk throughs of move in plate locations must occur at least the day before a move in with a representative of the IC, Operations (Ops), and the Tenant (Tenant Equipment Engineer (EE) installing the tool or Tenant Safety designee or other Tenant designee) to look at the movement path to identify obstacles or storage challenges along the path, transitions along the way and tape transitions and corners,

2) All Contractors must provide tall candlestick stanchions at corners for better visibility.

3) Daily walkthrough inspections are to occur for each day that plates are down with at minimum the EE or designee and Ops and any issues identified communicated to the IC with adequate time for correction ASAP before end of day.

4) Plates are to be removed the day after a move in is complete, **unless previously communicated and arranged with Pete Reilly in advance.**

5) If any plates are identified to be damaged or causing issues, they should be removed and replaced as soon as possible.

6.10 Moving Equipment Through the Cleanroom

1) Keep the tool and moving personnel in the center of the aisle and away from equipment.

2) Slowly remove and install the metal floor load-distribution panels—their movement generates particles by acting like large fan blades, displacing air and disturbing particulates under the raised floor.

3) Keep panel movement to a minimum to reduce disruption of the air flow.

4) Remove all debris and tool moving equipment as soon as possible.

6.11 Specific Material Cleaning Requirements

1) All high purity material that is to be used in a cleanroom shall be sealed with double wrapped plastic. The first plastic wrap shall be removed in the Wipe-Down Area. The second wrap shall be removed inside the cleanroom.

2) The interior and exterior of ductwork shall be free of oil and grease. Opened ends shall be wrapped with plastic and cleanroom tape after fabrication and cleaning. The plastic shall not be removed until the duct is ready to be installed.

3) Gas and liquid piping shall be capped at both ends after cleaning. If cleaned off-site, it shall be sealed and double wrapped with plastic in addition to having end caps.

4) Materials that give off particles such as wood, cloth, carpet, bare metal, etc., are not permitted inside the cleanroom or cores. Electro-polished stainless steel, plastic laminates, and anodized aluminum are permitted. Epoxy paint or an equivalent material may be used on bare metals depending on the installation and location; this must be approved for use prior to application through the Work Authorization Permit process.

5) Cleaned PVC, CPVC, PVDF, etc., plastics are permitted.

6) Raw steel is not permitted in the cleanroom.

6.12 Isolating Construction from the Cleanroom Environment

1) Only bring materials into the cleanroom that will be used that day.

2) Do not use unapproved perimeter doors for entry and exit from the cleanroom.

3) Isolate construction work from the cleanroom. Use only non-static approved plastic sheeting, like Visqueen, cleanroom tape, and other materials.

4) Only approved cleanroom tape is permitted. Any other tape, including duct tape, shall not be used anywhere in the cleanroom or subfab.

5) Care shall be taken to remove the isolation barrier as to reduce any additional contamination to existing production areas. Place plastic sheeting into a plastic bag and remove from cleanroom.

6.13 Cutting, Sawing, and Threading

1) Pre-fabricate materials outside the cleanroom as much as possible. Material shall be cleaned with 10% IPA in DI water prior to introduction to the cleanroom.

2) Cutting, sawing, and threading shall be kept to a minimum in the cleanroom.

3) During cutting or sawing operations, a second person shall be simultaneously HEPA-vacuuming the cutting dust.

4) Contractors shall use their own Cleanroom-approved HEPA vacuum to vacuum the entire work area at the end of each workday and at completion of work.

5) Wipe cleanroom surfaces with 10% IPA in DI water after vacuuming has been completed.

7 GENERAL SAFETY

7.1 Working Around Chemicals

With regard to working around chemicals on site, Contractors shall:

1) Review and follow **EHS-00002** – Hazard Communication Program and **EHS-00005** – Chemical Handling and Storage Procedure prior to handling chemicals on site.

2) Use chemical labels and safety data sheets (SDSs) to identify the chemical and get information concerning the hazards.

3) Comply with federal, state, local, and site guidelines regarding chemical use, including but not limited to, OSHA 29 CFR 1910.1200 and 1926.59.

4) Use chemical containers that have the manufacturer’s label or the chemical name and hazard warnings.

5) When transferring to a new container, use containers that are compatible with the chemical and labeled utilizing the GHS labels available in PPE cabinets and gowning rooms.

6) Follow the manufacturer's precautions on the SDS.

7) Obtain all necessary licenses and permits.

8) Minimize chemical exposure to themselves and others.

9) Supply and use the appropriate PPE for the chemical being used.

10) Be aware of the nearest eyewash/safety shower prior to working with and/or around chemicals.

11) Notify NY CREATES Security of any chemical incidents, such as spills.

12) Store flammable/combustible liquids in compatible containers and away from heat sources.

13) Do NOT handle or relocate chemicals that do not belong to you.

14) Transport, store, and handle chemicals brought onsite according to the manufacturer's specifications.

7.2 Housekeeping

1) Materials shall not be stored outdoors without prior approval by the PM.

2) Materials must be stacked or stored so that they are stable and do not pose a tripping hazard, block doors and/or emergency equipment, or restrict aisles, corridors, and passageway width to less than required for emergency egress. Pipes and conduit shall be transported and stored horizontally.

3) Scrap lumber, metal, or other garbage shall be disposed of as directed by the PM.

4) Protruding nails or wires shall be removed or bent over to prevent injury.

5) Walking-working surfaces shall be free of slip, trip, and fall hazards by keeping the area clean and free of obstructions.

6) Floor or trim anchors shall be cut flush with the floor surface to prevent trip and fall hazards.

7) Broken glass shall be placed into containers specifically designated for broken glass.

8) Platform planks shall be removed immediately after the work is finished.

9) Minimize production of odors, noise, dust, dirt, and debris into adjacent work areas.

10) Site equipment and facilities shall be protected from flying or falling materials.

11) Tarps shall be flame resistant, asbestos-free, and in good condition.

12) At the end of the work shift and during the workday, vacuum carpets, and mop tiles to prevent dust from migrating into hallways and other occupied areas.

13) Equipment, chemicals, construction materials, and debris shall be removed from the area at the end of each workday.

14) Work areas shall be clean and free of debris at the end of the shift and when the job is finished.

15) Construction area(s) must be clearly identified by contractor-supplied barricades and safety signs.

7.3 Office Safety

1) Stairwell doors and other fire doors shall not be propped open or modified in any way.

2) Care shall be taken not to damage the finished work.

3) Materials shall be organized, not pose a trip or fall hazard, and shall not block doors, walkways, emergency equipment, or exit paths.

4) Materials shall not be stored in stairwells.

5) Floors are to be kept free of slip, trip, or fall hazards.

6) Proper work practices and equipment (e.g., step stool) are used to access and retrieve materials.

7) Equipment shall be approved and used as intended.

7.4 Toxic Gas Monitoring System (TGMS)

1) Contractors shall review and follow **EHS-00031** – Procedure for Toxic Gas Monitoring System Operation and Maintenance and **TGM-00001** – Specification of Installation for Toxic Gas Monitoring System. Any deviations from these specifications require approval from NY CREATES EHS and TGMS departments.

2) Tools must be in maintenance mode if any work that could cause a TGMS activation is being performed. The work plan must be reviewed to ensure that no surrounding tool's TGMS will be impacted by work and to coordinate any additional Area Alarm Controller (AAC) panels to be placed into maintenance mode, as needed.

3) All new and/or changes/edits to any AAC panels are required to have the approved, tested, and signed TGMS matrix delivered to the NY CREATES TGMS department no later than two (2) weeks after completing TGMS testing.

4) TGMS testing is allowed Monday - Friday during normal business hours, only if TGMS BLUE LIGHT BYPASS IS ACTIVE and a NY CREATES TGMS department member is monitoring TGMS system during entire TGMS test. Live blue light and horn testing requires an approved Work Authorization Permit and signs posted 24 hours before testing is to commence.

7.5 Parking

Contractors shall park in accordance with the parking rules and regulations in **ANT-00003**. Parking is not allowed in fire lanes, on hash marks or any other permit parking areas. Docks may be used to load and unload equipment necessary to perform duties, and then vehicles must be immediately moved. All vehicles must adhere to site-designated speed limits and traffic control signs.

7.6 Bulk Chemicals and Gases

1) Certain bulk chemical and gas storage and delivery systems are subject to the requirements of OSHA 29 CFR 1910.119 - "Process Safety Management of Highly Hazardous Chemicals."

2) Any work on bulk chemical or hazardous gas storage and delivery systems including pipelines shall be approved by and coordinated with the PM.

3) Work on any chemical and gas storage and delivery systems requires an approved Work Authorization Permit (**CFM-0004**).

4) Contractor management shall ensure compliance with the OSHA Process Safety Management (PSM) requirements including, but not limited to, documenting appropriate employee training, hazard awareness, and safe work practices.

5) Contractors shall comply with OSHA PSM requirements when performing maintenance or repair, major renovation, or specialty work on or adjacent to a covered process.

7.7 Potentially Hazardous Areas

1) Certain areas and operations on site may have potential hazards associated with them. Contractors shall take extra precautions when working in, on, or around such areas. These areas include but are not limited to: Hazardous Process Materials (HPM) corridor, storage rooms, and warehouses; chemical labs; confined spaces; electrical circuits/equipment; high noise level areas; high voltage electrical areas; ionizing and non-ionizing radiation labs; laser labs and areas; mechanical equipment rooms; roofs and storage areas; chemical dispensing areas; and process areas for chemicals and gases.

2) Contractors shall review all projects to determine the hazards associated with the work and surrounding area, and review hazards with their workers.

3) Upon the Contractor's request, the PM will provide information regarding potential NY CREATES generated hazards.

4) Contractors shall provide the equipment, procedures, and training necessary for their employees to perform the work safely.

5) Contractors shall honor all warning signs, signals, and devices (e.g., laser signs and lights, radiation signs, protective eyewear signs, etc.) unless authorized to do otherwise by their management or the PM.

7.8 Security

1) Security reserves the right to conduct random searches of personal or other property carried onto or off of ANC premises including vehicles, handbags, lunch boxes, backpacks, briefcases, etc. Anyone refusing to participate in the search process will be brought to the attention of the PM.

2) Contractor supervisors shall notify the PM of the work plan, location, crew size, and expected start time.

3) Contractor Site Access:

    a) At the ANC, access badges are required.

    - Contractors who do not have an access badge shall produce a valid US driver’s license or passport to obtain a visitor badge at the NanoFab East (NFE) visitor’s desk.

    - Contractors shall prominently display their identification badges at all times.

- Contractors shall return their visitor badges at the NFE visitor's desk when leaving the site at the completion of the work shift.

4) Contractors who have an access badge and invite additional workers or venders who are temporary in nature, must check them in at Security and provide them with an escort at all times.

5) Contractors shall control access to NY CREATES areas by:

- Only admitting persons with valid identification badges into the ANC buildings
- Directing persons without badges to Security to gain access
- Not lending a badge to another person
- Entering and exiting through designated doors only
- Not defeating locks or latches
- Leaving doors closed and locked
- Not propping doors open unless they are attended
- Securing temporary openings in walls, roofs, or floors to prevent unauthorized access

7.9 Obtaining Badge

Go to the following link to find requirements for obtaining a badge: https://ny-creates.org/resources/ and https://ny-creates.org/policy-page/ for the applicable forms. Submit badge request form **ANT-00001-F1** – Access Card Request Form to the PM.

7.10 Airborne Infectious Disease Outbreak

See **EHS-00063** – Outbreak Exposure Prevention Plan for the latest information.

7.11 Smoking

1) The smoking policy applies to smoking cigarettes, electronic cigarettes, vapes, pipes, cigars, and any other device used to deliver tobacco, liquid nicotine, and other substances.

2) No smoking inside buildings or on any rooftop.

3) Smoke only in designated smoking areas. No smoking within 25 feet of building entrances.

4) Dispose of cigarettes in appropriate receptacles, not in trash containers or on the ground.

5) Any observed smoking violations may be reported to Security.

7.12 Utilities

1) Contractors shall notify the PM if an appropriate source of utilities is not available in the work area.

2) Utilities may not be run through a doorway which is normally locked to maintain security unless the Contractor continuously monitors the doorway to control unauthorized access.

3) Contractors may supply a safe, temporary electric source that is compliant with the National Electric Codes (NEC) and is GFCI protected.

7.13 Equipment Commissioning

1) Contractors shall review **EHS-00016** – New Equipment Installation, Equipment Modification or Process Change Procedure, and **EHS-00017** – Procedure for Equipment Commissioning, prior to any equipment commissioning on site.

2) Ensure that all equipment commissioning projects within the scope of this procedure are designed and installed in a manner consistent with applicable codes, regulations, and sound engineering practice and ensure safety, health, and environmental concerns related to the design, installation, startup, operation, and maintenance of equipment are addressed.

3) Access to any new or existing tool utilities must not be obstructed or blocked by the installation of any new tool utility, relocation, or facility upgrade.

4) The Equipment Owner requesting permission to install equipment in the Cleanroom/Lab Facilities will complete the **EHS-00017-F1** – Equipment Commissioning Inspection Record, ensuring completion of each checklist item.

5) Personnel from site EHS and Facilities Engineering Group (FEG) departments will review and approve the inspection checklist and required documentation in order to begin / initiate the installation and commissioning process.

6) Any deficiencies that are discovered that do not directly impact the safety of the equipment or the installation are to be listed in the Punchlist at the end of the Equipment Commissioning Checklist. Punchlist items must be completed in a timely manner and must be completed before the checklist is signed off.

7.14 Equipment Decommissioning and Decontamination

Contractors shall review and follow **EHS-00030** – Procedure for Equipment Decommissioning and Removal prior to any equipment or support systems decommissioning on site. Decontamination Certification (**EHS-000037-F1**) shall be completed.

Ensure all equipment and support systems decommissioning, decontamination, and removal are executed in a manner consistent with applicable codes, regulations, and sound engineering practices and that the equipment is decommissioned or removed in a manner that will allow lowest risk to employees, operations, or maintenance activities. Any questions regarding decommissioning or decontamination procedures, use of PPE, chemical hazards, and waste disposal shall be addressed to the Contractor Supervisor first, and then to the PM and EHS. Consult the SDS before conducting decontamination to better understand the hazards and needed precautions for chemicals involved. SDSs are available through the online Hazmin database: http://cnse.comply1.com/default.asp?hazminUn=cnsertk&hazminPwd=ny12203&hazminFac=CNSE%20Albany&logon=N.

All hazardous waste materials generated from decontamination must be properly handled as hazardous wastes in accordance with **EHS-00009** - Hazardous Waste Management Specification.

7.15 Chemical Use

1) Review and follow **EHS-00002** – Requirements for Hazard Communication Program and **EHS-00005** – SOP for Chemical Handling and Storage prior to handling chemicals on site.

2) Comply with federal, state, local and NY CREATES guidelines and regulations regarding chemical use, including but not limited to, OSHA 29 CFR 1910.1200 and 1926.59.

3) Report all chemicals proposed to be used on a project to EHS.

4) Some chemicals are restricted from site. Contractors shall create an account on the HAZMIN database that contains all the approved chemicals.

5) Use non-hazardous materials whenever possible. NY CREATES prohibits the use of certain chemicals.

6) Use chemical containers that have the manufacturer's label or the chemical name and hazard warnings.

7) Follow the manufacturer's precautions on the SDS.

8) Obtain all necessary licenses and permits.

9) Minimize chemical exposure to all.

10) Supply and use the appropriate PPE for the chemical being used.

11) Be aware of the nearest eyewash/safety shower prior to working with and/or around chemicals.

12) Notify Security of any chemical incidents.

13) Provide temporary exhaust to control solvent fumes and odors when paints, solvents, or volatile chemicals are used.

14) Keep chemicals in closed containers when not being used.

15) Store flammable/combustible liquids and gases in compatible containers and away from heat sources and combustible materials (e.g., wood, paper).

16) Obtain approval from the PM and EHS for overnight storage of chemicals and chemical waste.

17) Place materials with flammable liquids on them in the "Flammable Waste" container.

18) Do not dismantle or move chemical pipes, exhaust hoods, ductwork, or tanks without prior approval of the PM.

19) Properly decontaminate chemical materials and equipment prior to starting work.

20) Transport, store, and handle chemicals according to the manufacturer's specifications.

21) Remove all chemical supplies from the site at the completion of the job.

22) Label all chemical drains, collective systems, facility, and process plumbing as to their contents and direction of flow. Labels shall be placed every 10ft, at all branches, and before and after all penetrations.

7.16 Compressed Gases and Compressed Gas Cylinders

1) Contractors shall review and follow **EHS-00011** – Gas Cylinder Handling Procedure prior to handling any gas cylinder on site.

2) Contractors shall wear appropriate PPE when handling and using different types of gas.

3) Compressed air/gas shall not be used for cleaning purposes except where reduced to less than 30 psi, and then only with effective chip guarding and protective equipment.

4) Compressed air/gas shall not be used to clean dust from an individual's clothes or body, nor shall the nozzle be pointed at people.

5) Proper pressure control hardware, Compressed Gas Association (CGA) fittings, and rated delivery lines shall be used at all times.

6) Compressed gas cylinders shall be legibly marked, according to the current ANSI standards, with the name of the material contained.

7) The Contractor's company name shall be identified on any cylinder that is not removed from the site at the end of the work shift.

8) The proper CGA fitting shall be used. Adapters are NOT permitted.

9) Gas cylinders that are damaged or contain a buildup of scale or rust shall not be brought on site.

10) Hose lines shall be properly rated and regularly inspected and tested for leaks.

11) If a leak develops in a cylinder, immediately clear affected people from the area and call Security.

12) Contractors working with or transporting compressed gases shall have appropriate safety training in the use and handling of compressed gases and cylinders through their employer.

13) When transporting cylinders, Contractors shall:

- Install valve protection caps.
- Secure to an approved hand truck or cart.
- NEVER carry the cylinder by the bottle valve or protective cap.
- NEVER roll or drag a cylinder (use an approved cart).
- NEVER drop or allow a cylinder to strike other cylinders or surfaces.
- Only use the freight elevators for vertical transportation, when available.
- Either cradle or have two persons carry the cylinder when transporting to the roof, basement, or between floors (if not on a freight elevator).

14) Ensure that all compressed gas cylinders, whether in use, in transit, or in storage, are fastened securely in an upright position by a chain, suitable strap, or a rigid retaining bar or structure. In cases where more than one cylinder is to be stored, the cylinders shall be installed in an upright position in a cage or rack constructed to protect the cylinders from falling. The cage or rack must be capable of preventing movement on three sides. The open side shall have a removable restraint(s), such as a chain, suitable strap, or rigid retaining bar, which can be adjusted to prevent cylinders from falling. In all cases, the cylinders shall be secured to prevent them from falling or sliding out from under the restraints.

15) Protective valve caps shall always be installed on stored cylinders or when transporting cylinders.

16) Cylinder valves shall be closed when not in use and at the end of the day's work. Torch valves shall not be relied on for cylinder shut off.

17) Regulators shall be approved for the specific compressed gas being used. They shall not be interchanged.

18) Compressed gas cylinders shall be used in well-ventilated areas or within mechanically ventilated cabinets.

19) Cylinders shall be kept far enough away from welding or cutting operations so that sparks, hot slag, or flame will not reach them. When this is impractical, fire-resistant shields shall be provided.

20) Cylinders shall not be placed where they can contact an exposed electrical circuit.

21) All cylinders shall be removed from the site daily unless the PM authorizes overnight storage.

22) Cylinder status tag shall be placed on all cylinders noting full, empty, or in use.

23) Acetylene cylinders shall not be transported, used, or stored with the cylinder lying down because this could result in the release of flammable liquid. If such a release occurs, immediately call Security.

24) Oxygen cylinders must be stored separately from acetylene cylinders in a well-protected, well-ventilated, dry location, at a minimum distance of 20 feet, or behind a non-combustible barrier at least 5 feet high, having a fire resistance rating of at least a half-hour.

25) DO NOT use acetylene at more than 15psi gauge pressure.

26) Contractors shall obtain approval from the PM and EHS before bringing a compressed gas on site.

7.17 Confined Spaces

Contractors shall:

- Comply with the requirements of OSHA 29 CFR Subpart AA – Confined Spaces in Construction and 1910.146 – Permit – Required confined spaces.

- Review and follow **EHS-00007** – Confined Space Entry Procedure, prior to entry into a confined space on site.

- Refrain from entering any confined space without the authorization from EHS and the PM.

- Have a written confined space program that has been submitted to EHS as well as a copy with them on site at all times.

- Be prepared to show evidence of appropriate confined space training.

7.18 Lockout / Tagout (LOTO) – The Control of Hazardous Energy

Contractors who perform maintenance or service of equipment where the unexpected energization start-up or release of stored energy could cause injury, shall have a LOTO program that complies with OSHA 29 CFR 1910.147 (Lockout / Tagout – The Control of Hazardous Energy). Contractors must review the **EHS-00008** – Lockout / Tagout (LOTO) Program. Hazardous energies may include electrical, mechanical, hydraulic, pneumatic, chemical, steam, pressurized systems, gravity, and stored energy, which includes suspended parts and springs.

1) Contractors and the PM must inform each other of their respective lockout/tagout process/procedures. Contractor lockout/tagout activity must be compatible with the NY CREATES lockout/tagout process, in that if a device is capable of being locked out, lockout is used. Tagout only is not acceptable where the device is capable of being locked out. Where a lockout is not possible, tagout must include an additional measure such as blocking, removing a circuit breaker, opening of an extra disconnecting device, removing the handle from a valve on a gas cylinder, etc.

2) Contractors are not authorized to operate breakers or valves. The system owner or its designee must operate the switches, valves, and breakers.

3) Awareness notification shall be made to personnel potentially affected by the work (but not involved) prior to power shutdown, and again prior to power restoration.

4) Contractors are responsible for training and authorizing their employees to perform lockout/tagout, having written/documented procedures, and performing periodic inspections, as applicable.

5) If lockout/tagout procedures exist for equipment on site, contractors must review them for reference; however, the contractor is expected to provide written procedures, as required by applicable regulations.

6) Personnel who apply locks and tags for the purpose of controlling hazardous energy must be trained and authorized by their employer to demonstrate proficiency. The lock and key are to be retained by the individual performing the work, and only this individual is authorized to remove the lockout/tagout devices upon completion of the work.

7) Contractors are responsible for providing and using their own lockout/tagout devices. Locks and tags must be unique to the contractor's lockout/tagout program, be legibly marked with the authorized employee name and company name and shall not be used for any other purposes. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques. The "One Person, One Lock, One Key" rule applies.

8) Operating equipment shall be shut down using the normal stopping procedure to avoid an additional or increased hazard. Energy-isolating devices shall be located and operated such that the equipment is isolated from every energy source which an individual may be exposed to during the performance of their work.

9) Contractors must not defeat, remove, ignore, or bypass existing locks or tags. Locks and tags must only be removed by the authorized individual who attached it.

10) When more than one authorized person works on equipment under lockout/tagout, each must apply their personal lock and tag using a multi-lock hasp. Alternately, an approved group lockout/tagout procedure may be used (lockbox).

11) Use administrative locks/tags when removing equipment, systems, or circuits for service. Although no maintenance or servicing is underway, there would be a risk of injury if the valve of the energized circuits were opened. Tags with the wording "OUT OF SERVICE" should be used to identify equipment removed from service and to keep people away from the tagged equipment. These tags are not used to warn of hazardous conditions.

7.19.1 Verification of Isolation

Prior to starting work on equipment that has been locked and tagged out, the authorized employee shall verify that isolation and de-energization of the equipment has been accomplished.

7.19.2 Equipment and Stored Energy

Some equipment may have a source of stored energy. This energy can be stored as hydraulic or pneumatic pressure, gravitational, mechanical motion, thermal energy, or the presence of gas, water, steam, or chemicals. All potentially hazardous stored or residual energy must be relieved, disconnected, restrained, or otherwise rendered safe. Proper procedures and equipment must always be used to contain and/or isolate sources of secondary energy.

7.19.3 Release from Lockout/Tagout

Before the lockout/tagout device is removed and energy is restored to the equipment, the authorized employee shall inspect the work area to ensure that non-essential items have been removed and that the equipment components are operationally intact. Contractor employees and others in the area shall be notified that the lockout/tagout devices are being removed and the work area is clear.

7.19 Electrical Safety

The preferred method to minimize the risk of injury due to exposure to electrical energy is to de-energize and perform the work in the electrical safe condition under lockout / tagout. It shall be the shared goal of NY CREATES contractor to develop work procedures where it is feasible to work under de-energized lockout conditions. Before equipment is serviced, repaired, or worked on, the line disconnect switch or circuit breaker supplying power must be tagged and locked in the OFF position. Circuits shall be checked with the proper equipment to ensure that all power is removed from the system. Equipment shall not be energized or re-energized until all permanent covers or closures for potentially energized electrical parts of equipment have been reinstalled.

1) Contractor and/or vendor shall read and follow **EHS-00054** – Electrical Safety Program prior to commencement of work.

2) All activities must be conducted in accordance with the applicable parts of the OSHA 1910 Subpart S - Electrical for General Industry and 1926 Subpart K - Electrical for Construction.

3) If the PM agrees that de-energizing exposed live electrical parts introduces additional hazards such as interruption to life-support systems, complete removal of light to an area, deactivation of emergency alarms system, deactivation of hazardous location ventilation equipment, or is not feasible, specific safety-related work practices for working live shall be followed by qualified Contractor personnel and **EHS-00054** – Energized Electrical Work Permit.

4) Work practices include the use of precautionary techniques, protective equipment, insulating and shielding materials, insulated tools, etc.

5) Work practices shall be suitable for work conditions and the exposed voltage level.

6) Work practices shall protect against direct body contact or indirect contact by means of tools or materials.

7) Suitable barricades and warning signs shall be used to make any necessary open wiring inaccessible to unauthorized personnel.

8) Energized panels shall be covered when not attended.

9) Temporary wiring shall be de-energized when not in use. All temporary wiring must be protected by a GFCI.

10) Entry into high voltage areas shall be pre-authorized and supervised by the PM.

11) If conductors and wires need to be left temporarily exposed, they shall be left in a safe state, de-energized, insulated, and positioned so as not to cause physical hazards.

12) Unused openings in electrical panels shall be appropriately covered.

13) Conductors entering equipment or electrical panels shall pass through grommets to protect them from abrasion.

14) Listed, labeled, or certified equipment shall be installed and used in accordance with the instructions included in the listing, labeling, or certification.

15) The contractor shall re-install covers to panels and label circuits appropriately.

16) Contractors must update each panel schedule as work is being completed, remove the outdated schedule, and post the updated schedule.

7.20 Power-Actuated Tools

1) In the event that the work is to take place in or adjacent to an occupied space, the Contractor shall review and follow **EHS-00065** – Power-Actuated Fastener Tool Permit Procedure. Include permit with Work Authorization Permit for approval prior to use. NY CREATES EHS and PM will review the checklist on the permit with the Contractor prior to signatures for approval. Power-Actuated Tools may be requested to be tested on site prior to authorization for use. This test will be done in a safe area with EHS, ERT, and Security present along with the contractor performing the test.

2) Explosive actuated tools shall be inspected, handled, and used in compliance with OSHA 29 CFR 1926.302 and 1910.243, and ANSI A10.3, “Safety Requirements for Explosive Actuated Fastening Tools.”

3) Only employees who are licensed / certified and trained in their operation shall operate explosive-actuated tools.

4) The type and size of fastener to be used shall be compatible with the type and size of material that the fasteners are to be driven into.

5) Explosive actuated tools shall not be used in explosive or flammable atmospheres.

6) Explosive actuated tools shall not be loaded until just prior to the intended firing time and shall never be left unattended.

7) Explosive actuated tools shall never be pointed at anyone.

8) Area shall be cordoned off when in use to prevent unauthorized access.

9) Spent and misfired cartridges must be disposed of in accordance with manufacturer’s instructions and not disposed of in NY CREATES dumpsters.

7.21 Hand and Portable Electrical Tools

1) Portable electrical equipment shall be inspected, used, and handled according to OSHA 29 CFR 1910.334, 1910 Subpart P, and 1926.302.

2) Portable electrical equipment shall be double insulated or electrically grounded by a grounding conductor plug and GFCI protected.

3) Portable electrical equipment shall be kept in good repair and have attachment cords that comply with the applicable requirements for extension cords.

4) GFCI devices shall be used on power circuits serving outlets in damp, wet, or outdoor locations.

5) Contractors shall not use defective or unsafe equipment.

6) Contractors shall use only non-sparking equipment in flammable solvent handling and non-sparking areas.

7) Contractors shall use the manufacturer's recommended shields, guards, and attachments.

8) Contractors shall inspect equipment guards prior to each use.

9) Contractors shall not leave tools or other materials on stepladders, scaffolds, roofs, or other high places.

10) Appropriate PPE shall be worn/used when using tools and/or equipment.

11) Contractors shall not leave a power-actuated tool unattended. It shall be secured, de-energized, and unloaded after use and between break periods.

7.22 Pneumatic Tools

1) Any proposed use of pneumatic tools shall be approved by and coordinated with the PM.

2) Pneumatic tools shall be inspected, handled, and used in compliance with OSHA 29 CFR 1926.302 - "Power-Operated Hand Tools".

3) Compressed air shall be turned off when the tool is not in use.

4) The manufacturer's safe operating pressure for all fittings and hoses shall not be exceeded.

5) Pneumatic tools shall be secured to the hose in a positive manner to prevent accidental disconnection.

6) All hoses exceeding ½-inch inside diameter shall have a safety device at the source of supply to reduce air pressure in case of hose failure or tool disconnection.

7) Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.

7.23 Excavation and Trenches

1) Excavations include, but are not limited to, operations such as digging, drilling, and trenching.

2) Excavation equipment and work shall comply with federal, state and local legal requirements including, but not limited to, OSHA 29 CFR 1926, Subparts M, O, and P.

3) Excavation work shall be approved by and coordinated with the PM. A Competent Person for excavations and trenching must be assigned and have the proper training and certifications as needed.

4) Excavations below the base of footings of any foundation or retaining wall shall not be permitted without prior approval of FEG.

5) Before starting any excavation work, the existence and location of underground pipes, electrical conductors, gas lines, etc., shall be determined. A sub-surface scan may be required prior to any digging along with NYS Dig Safe to establish any services in the area. Contractors shall contact the PM to obtain any available existing drawing(s) as a guide to existing services underground.

6) Contractors shall wear/use PPE as appropriate for the work performed. When exposed to public vehicular traffic, employees shall wear highly visible garments. High-visibility garments worn at night shall be of reflective material. Contractor shall provide signal people to direct traffic.

7) The sides of the excavation shall be protected against hazardous ground movement and:

   - Excavations 5 feet or deeper shall be shored, braced, sloped, or benched to prevent any hazardous ground movement.

   - Excavations more than 20 feet deep shall be shored, braced, sloped, or benched as designed by a registered professional engineer.

8) Shoring or sheet piling shall comply with local, state, and federal standards.

9) When excavations are 4 feet or deeper, ladders, stairways, ramps, or other safe means shall be located so that a worker does not need to travel more than 25 feet in any direction before being able to exit the excavation.

10) Dirt, debris, and other material shall be stored and retained at least 2 feet from the edge of any excavation that personnel may enter.

11) If it is necessary to place or operate power shovels, derricks, trucks, material, or other heavy objects at a level above and near an excavation, the side of the excavation shall be sheet piled, shored, and braced, as necessary, to resist the extra pressure due to such superimposed loads.

12) Any liquid entering excavations that require dewatering shall be removed in a manner approved by the PM and EHS.

13) Adequate barrier physical protection shall be provided at all excavations and trenches. In vehicular traffic areas, warning lights shall be placed next to excavations and trenches during evening and night hours to provide sufficient warning of danger.

14) Daily inspections of excavations, the adjacent areas, and protective systems, shall be made by the Contractor's competent person prior to the start of work and as needed throughout the shift. If evidence of a possible cave-in or other hazardous conditions are apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard personnel and to correct the situation.

15) Certain excavations may be considered confined spaces.

16) Bridges and walkways over excavations shall be compliant with federal, state and local legal requirements including, but not limited to, OSHA 29 CFR 1910, Subpart D - "Walking-Working Surfaces" and/or 1926, Subpart M - "Fall Protection".

17) Bridges and walkways shall be free of splinters, protruding nails, or other protrusions that might cause injury, and be designed by a competent person.

18) Contractors must have a competent person assigned to all work.

7.24 Exhaust Systems

1) Any proposed work on exhaust systems shall be approved by submitting a Work Authorization Permit and obtaining approval by a Facility System Engineer. Work shall be coordinated with the PM.

2) Exhaust systems work includes, but is not limited to:

    - Shutting off an exhaust system

- Entering an exhaust plenum
- Modifying exhaust flows and or static pressure
- Blocking, puncturing, or removing an exhaust system
- Interrupting electrical service to an exhaust system

3) If photohelic exhaust set points are moved from their approved minimum and/or maximum position, they are to be returned to their proper position upon completion of work or prior to leaving the work area. The PM must be informed if the work has altered the approved exhaust flow/static or velocity pressure. This includes work associated with balancing and testing systems, as well as all other exhaust systems work.

4) All work shall be balanced by an approved balancer and all drops shall be labeled. Any out of spec conditions existing prior to or during work shall be documented and brought to the attention of the PM prior to completion of work for resolution.

7.25 Extension Cords

1) GFCI devices are required for all construction areas and temporary wiring installations that are used during maintenance; remodeling; or repair of buildings, structures, or equipment; or during similar construction-like activities. This includes use of portable electric power tools with or without an extension cord.

2) GFCI should also be used in areas where either permanent or portable GFCIs are required by the NEC, such as circuits serving outlets in damp, wet, outdoor locations and in any other locations where individuals using an electrical apparatus could become well-grounded.

3) Extension cords shall:

- Be listed and labeled by an OSHA Nationally Recognized Testing Laboratory (NRTL) and properly rated for the connected equipment and intended usage
- Be factory-assembled with molded caps and plugs
- Contain polarized caps and plugs and be equipped with an equipment-grounding conductor
- NOT be fabricated using electrical boxes or duplex receptacles

- NOT be used if caps, plugs, and outer jacket are damaged
- Be used for temporary power only
- NOT be placed in a manner that could cause damage to the outer jacket or a trip hazard to personnel. Tape may be used to temporarily attach extension cords to surfaces
- Be located with at least seven (7) feet of overhead clearance when placed over aisles and work areas
- NOT be used inside equipment for providing electrical power to components
- NOT be in conduct with metal surfaces such as strut or building steel while being used
- Be unplugged before being rolled up to be put in storage

4) Extension cords or devices identified as multi-outlet strips or temporary power taps may not be used as a substitute for fixed wiring.

5) Re-locatable power taps may be used in offices, labs, and cleanroom areas to provide electrical power to equipment such as personal computers provided the combined load does not exceed the rating of the circuit and the taps are listed and equipped with circuit protection that does not exceed the rating of the power source.

6) Temporary wiring must be de-energized when not in use.

7.26 Temporary Lights

1) Temporary lights must be equipped with guards to prevent accidental contact with the bulb unless the reflector construction is such that the bulb is deeply recessed.

2) Temporary lights must be protected by GFCI circuit.

3) Temporary lights must not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

4) Temporary lights shall be removed at the end of the project or as directed by the PM.

7.27 Hot Work (Welding, Cutting, Open Flame Work)

1) The contractor shall follow **EHS-00029** – NY CREATES Hot Work Procedure and submit a Work Authorization Permit with a Daily Hot Work Permit (**EHS-00029-F1**). All Hot Work Permits must also be accompanied by a **CFM-00005-F1** – Fire Protection System Daily Permit.

2) A **Daily Hot Work Permit** is required for any proposed use of open flame or spark-producing equipment (e.g., welding, cutting, brazing, burning, grinding, soldering).

3) Permits shall be approved prior to the start of work and in accordance with the requirements set forth in 29 CFR 1910 Subpart Q-Welding, Cutting, and Brazing.

4) A fire watch shall be assigned and present when such work is in progress and shall be posted for 30 minutes after the work ends.

5) Contractors shall furnish their own fire extinguishers and inspect them, as required.

6) Gas cylinders shall be placed far enough away from welding or cutting operations so that sparks, hot slag, or flames will not reach them; when such a location is impractical, fire-resistant shields shall be provided.

7) Welding shields or screens shall be provided and used at all times. Shields, screens, or fire blankets shall be of non-asbestos, fireproof material and placed to protect others from visual effects of cutting or welding.

8) Hot Work Operator shall inspect equipment prior to work and ensure it is in proper working condition and that controls are in place in accordance with the Hot Work Procedure.

9) Hot Work Operator shall evaluate the need for proper PPE for work being performed.

10) A copy of the Daily Hot Work Permit shall be retained and filed by the EHS Department, and a copy shall be posted in a visible location within the hot work area.

11) Regarding acetylene activities within cleanroom areas - validate via checklist during Pre-Task Planning (PTP) that a torch-strike is required, and then implement the following:

- Pre-walk the route to identify any ambient sensors that may potentially be impacted.
- Determine availability of snorkel exhaust. Use is mandatory when available.
- Smoke Eaters required on PM Program and keep spare filters in stock.
- Only strike the torch in an area away from the sensor. If it is not possible to strike away from the sensor, then the strike must be shielded.
- In the rare event that an issue is seen to have no obvious way to avoid, work with Operations to get a window of time to complete the work.

7.28 Heaters and Salamanders

1) Any proposed use of heaters or salamanders shall be approved by and coordinated with the PM.

2) A permit shall be obtained prior to using a heater or salamander.

3) Contractors shall furnish fire extinguishers which are suitable for the type of work being performed.

4) Heaters and salamanders shall be:

    - Listed or labeled by a NRTL
    - Located at least 10 feet from tarpaulins, canvas, or similar coverings; these coverings shall be securely fastened to prevent ignition or upset of the heater due to wind action from the covering or other material
    - Guarded from pedestrian or vehicular traffic to prevent them from being overturned
    - Refueled outdoors
    - Operated only after obtaining a Daily Hot Work Permit

7.29 Internal Combustion Engines

1) Any proposed use of gasoline, liquid propane (LP) gas, or any other type of internal combustion engines inside buildings or on roofs shall be approved by and coordinated with the PM and EHS.

2) Contractors shall not operate internal combustion engines near building air intakes where fumes could be carried into HVAC systems.

3) If LP gas engines are to be used inside the building, they shall be equipped with oxy-catalyst exhaust purifiers.

4) Contractors shall notify the PM before bringing any gasoline or fuel tanks onto the work site, must have double containment, and the NY CREATES Environmental Engineer must be notified

5) Fuel shall be stored in approved containers. Storage on a roof is limited to 1 gallon and must have provisions for double containment.

6) Proper emergency equipment shall be available near fuel storage areas.

7.30 Ladders

1) Contractors shall review **EHS-00050** – General Guidelines for Handling, Storage, and Maintenance of Ladders prior to ladder usage at the ANC.

2) The design and use of ladders shall comply with all federal, state and local legal requirements, including but not limited to, the applicable portions of OSHA 29 CFR 1910.23 and/or 1926.1053.

3) Ladders shall be constructed of fiberglass material. Aluminum or wood ladders are not permitted.

4) Ladders shall not have cracks; loose, missing, or bent steps; broken, frayed, or worn ropes; missing or damaged safety feet; or inoperable extension devices. Defective ladders shall not be used, and they should be red tagged and removed for proper disposal.

5) Ladders shall not be placed in front of doors or door openings unless proper signage is posted, the door is blocked open, locked, or guarded by a responsible person.

6) Two traffic cones to prevent hazards must accompany ladders used in hallways.

7) Ladders shall be secured to keep them from shifting, slipping, being knocked over, or blown over by the wind.

8) Straight or extension ladders used to access roofs/platforms shall extend past the support at least 3 feet.

9) Extension ladders shall not be separated because this eliminates the safety feet from one section and can cause damage to pulley and latches on extension section.

10) A frame stepladder shall not be used as a straight ladder unless it is designed for that purpose.

11) The top cap and the step before the top cap of an ordinary stepladder shall not be used as steps.

12) When ascending or descending a ladder, the user must face the ladder and maintain three points of contact with the ladder. The belt buckle rule applies. When material must be handled, it shall be raised or lowered in a safe manner to prevent dropping.

13) Ladders shall be taken down, stowed, and secured at the end of each workday.

14) Ladders must not be staged so as to block EMOs, fire extinguishers, shower/eyewash stations, access and egress paths, and electrical panels.

7.31 Material Unloading

1) The movement of materials, tools, and equipment shall be approved by the PM.

2) Contractor supervisors shall monitor the movement of materials by Contractor personnel.

3) Security may request Contractors to produce appropriate authorization when transporting materials on or off the site.

4) Contractors using docks to load or unload materials shall comply with the following:

- Vehicle engine shall be turned off
- Rear wheels on both sides of the vehicle shall be chocked
- Vehicles shall not be left unattended at the dock

5) Care shall be taken when moving materials to ensure that people are not injured and that walls, ceilings, and doors are not damaged. Damage will be back charged to the Contractor.

6) To maintain emergency egress requirements, carts, tools, materials, and equipment shall not be left in aisles or blocking fire doors.

7) Contractors shall use the following cautionary measures when moving materials:

   - Piping, conduit, ladders, etc., more than 10 feet long shall be carried by at least two persons, each supporting one end of the material to be transported
   - Caution signs or signal people may be required at corridor intersections to alert personnel
   - Floor tile load rating shall not be exceeded

8) Contractors shall remove any boxes, cardboard, or crates associated with installation of equipment or supplies that same day to dumpsters. DO NOT store any boxes or crates in aisles or rooms without PM approval.

7.32 Work at Elevations

1) Provisions must be made to ensure workers are not at risk of falling from elevated work areas. An elevated work area is an area where an employee may potentially fall six (6) feet or more (OSHA 29 CFR 1926 Subpart M- Fall Protection Construction) or 4 feet or more to a lower level (OSHA General Industry 29 CFR 1910.28 ‘Duty to have fall protection and falling object protection’).
2) Equipment suppliers are responsible for providing an "On-Tool" tie-off point on their equipment.

7.33 Openings in Floors, Roofs, and Walls

1) Openings made in floors, roofs, and walls shall be approved by the PM.

2) All floor and roof openings shall comply with federal, state and local legal requirements including, but not limited to, OSHA 29 CFR 1910, Subpart D - "Walking-Working Surfaces" and/or OSHA 29 CFR 1926, Subpart M - “Floor and Wall Openings" to prevent individuals from falling to a lower level.

3) Floor and roof openings (including raised floor tiles) shall be guarded so that no one can step into or fall in or fall through the opening.

4) Openings shall be guarded by one of the following:

   - A cover of standard strength and construction that is secured to prevent movement from the opening

   - A Guardrail system (e.g., a barrier with a top-rail at least 39 inches in height above the walking-work surface capable of supporting a force of 200 pounds, a mid-rail set halfway between the top-rail and the walking-working surface capable of withstanding a force of 150 pounds, a self-closing gate at the entranceway, a toe-board that is 3.5 inches vertical height) that is secure

   - Wall openings that pose a hazard because of the location shall also be guarded as defined above

5) Open-sided floor above the adjacent floor or ground level shall be guarded by a guardrail system. When a guardrail is not provided, the Contractor must provide a personal fall arrest system in compliance with OSHA 29 CFR 1926 and 1910.

6) Penetrations through floors, walls, ceilings, and roofs for conduit, piping, and ductwork shall be restored / sealed using appropriate construction materials and methods that maintain the designated fire rating. The Contractor that made the penetrations is responsible for the restorations that meet the standards.

7.34 Overhead Work

1) Overhead work may not be conducted in such a manner that it creates the possibility of a falling object striking a person below.

2) Contractors shall not work above hung ceilings over occupied offices or areas. Area below ceiling shall be vacated prior to start of work.

3) Contractors performing overhead repairs and/or construction activity from ladders or other lifting aids shall use barricades, cones, caution tape, signs, and/or other alerting techniques to warn people of the potential hazard.

4) Contractors shall wear hard hats when they work in areas or perform operations where there is a potential for head injury.

7.35 Roofs and Elevated Work Surfaces

1) Access to the roof of any building or any other elevated work areas shall be approved by and coordinated with the PM.

2) Unless specifically required by the scope of work, Contractors shall not access or work on a roof or elevated work area if weather is a hazard or where the roof is damaged and presents a hazard.

3) When the scope of work requires Contractors to work on a sloped roof or within 10 feet of an unprotected roof edge, platform, or other elevated work area, they shall utilize anchorage and fall protection equipment. The contractor shall comply with all applicable regulations including, but not limited to, OSHA 29 CFR 1910 and 1926 fall protection regulations.

4) Contractors shall protect the roof surface from damage by personnel, equipment, and materials.

5) Contractors shall hoist material and equipment to and from roofs and elevated work areas in conformance with federal, state, and local regulations.

6) Contractors shall not overload the roof with equipment and/or material. The PM shall approve roof loading prior to start of work.

7) Contractors shall remove all equipment, tools, packaging, and debris at the end of each day. Materials must be disposed of in proper dumpsters.

8) All exposed lightning rods below elevated workers or situated within ten feet of work that could expose a worker to an impalement hazard must be temporarily removed or covered by a suitable protective device before any work commences. The rods must then be uncovered or replaced at the end of each day or when work stops due to anticipated inclement weather.

7.36 Scaffolding

1) Any proposed use and construction of scaffolding shall be approved by and coordinated with EHS and the PM.

2) The use and construction of scaffolding shall comply with federal, state and local legal requirements, including but not limited to, **EHS-00074** - Scaffolding Procedures, OSHA 29 CFR 1910.27 and/or 1926 Subpart L – Scaffolds.

3) The erection and dismantling of scaffolds shall be performed under the supervision and direction of the contractor's competent person.

4) Anchorage and bracing must be provided so that scaffolds are prevented from swaying, tipping, or collapsing.

5) Scaffolds and their parts shall be sound and capable of supporting four (4) times their maximum intended loads.

6) The footings for scaffolds shall be sound and capable of carrying four (4) times the maximum intended load.

7) Unstable objects shall not be used to support scaffolds or planks.

8) Wheeled scaffolds shall have lockable wheels that are locked whenever employees are on the scaffold.

9) A safe and unobstructed means of access, such as a walkway, stair, or ladder must be provided to and from all scaffold platforms.

10) Guardrails, guardrail screens, toe-boards, and outriggers shall be used when required.

11) Where fall protection is required and a standard guardrail system is not provided, a personal fall arrest system must be used.

12) Platform planking must be at scaffold grade or equivalent and be secured to prevent movement.

13) Each person on a suspended scaffold must be equipped with a fall protection system using attached points that are separate from the scaffold attachment points. Anchorage points for fall arrest systems must be a minimum 0.5-inch nylon, or equivalent, with a maximum length to allow for a fall of no greater than six (6) feet and secured independently from the scaffold.

14) Welding, burning, or open flame work shall not be performed on scaffolds that are suspended by fiber or synthetic rope.

8 SPECIAL HAZARDS

8.1 Lead Safety

1) Construction and renovation activities involving the disturbance of lead-containing materials or settled lead dust may be hazardous if appropriate work practices are not followed. Examples of potential lead-containing materials include, but are not limited to, paint and primer coatings, noise and vibration dampers, radiation-shielding materials, and Terne sheet metal.

2) Contractors are responsible for evaluating and controlling their employees' occupational exposure to lead. Contractors shall not remove, handle, or otherwise disturb lead or material suspected of containing lead without the approval of and coordination with the PM.

3) Prior to work on painted surfaces, Contractors shall contact the PM to request sampling and analysis of paint and/or primer coatings for determination of their lead content. When feasible, lead-based paint and primer coatings shall be removed manually with the aid of site approved wetting agents and solvents prior to work on substrate materials.

   Aggressive removal techniques may only be used when manual removal methods are ineffective. In such instances, the specific work practices and engineering controls to be employed shall be submitted to the PM prior to the start of work. Examples of aggressive removal techniques include, but are not limited to, abrasive blasting, burning, grinding, heat-gun application, mechanical chipping, scraping, sanding, and power washing.

4) Lead bricks and sheeting used for noise reduction, vibration dampening, and radiation shielding may only be removed or handled with prior authorization from the PM.

5) Contractors shall not use lead-containing mortar, paint, or primer on construction or renovation projects. Use of lead-containing solders on water pipes is also prohibited.

6) All work involving the handling of lead-containing materials shall be conducted in accordance with all applicable federal, state, and local regulatory requirements including, but not limited to, the OSHA standards for lead, OSHA 29 CFR 1910.1025 and 29 CFR 1926.62.

9 POWER VEHICLES

9.1 Motor Vehicles

1) Contractors shall obey New York State (NYS) Department of Transportation (DOT) and Site traffic regulations, as well as posted speed limits and stop signs while operating a motor vehicle on site.

2) Contractor shall review **ANT-00003** – Parking Rules and Regulations Policy.

3) Parking rules and regulations are available at the Security desk located in the NFE rotunda.

4) Contractors shall yield the right-of-way to pedestrians and emergency response vehicles.

5) Contractors shall park their vehicles in designated parking areas only.

6) Contractors shall not park in restricted, reserved, or visitor's parking spaces.

7) Contractors' vehicles and equipment shall not block exits, walkways, roads, loading areas, fire hydrants, eye wash stations, electrical panels, or emergency equipment.

8) Contractors shall not perform maintenance or repairs to vehicles, equipment, engines, transmissions, or other fluid-containing systems on the ANC properties unless specifically authorized and trained to do so by the PM and NY CREATES EHS.

9) Contractors shall turn vehicle engines off when parked to reduce the probability that engine exhaust will be drawn into building ventilation systems.

10) Contractors and flag persons shall wear high visibility garments when exposed to public vehicular traffic. Warning garments worn at night shall be constructed of reflective material.

9.2 Powered Industrial Vehicles

1) Contractors shall review **EHS-00035** – Powered Industrial Vehicles, Non-Motorized Hand Trucks and Pallet Jacks Standard Operating Procedure (prior to use of powered industrial vehicles on site.

2) Any proposed use of powered industrial vehicles shall be approved by and coordinated with the PM.

3) Powered industrial vehicles and their use shall comply with federal, state and local legal requirements including, but not limited to, OSHA 29 CFR 1910.178 - "Powered Industrial Trucks" and 1926.602 – “Material Handling Equipment” and ANSI A92-for Motorized Elevated Work Platforms (MEWPs).

4) Powered industrial vehicles shall be maintained in good working order with no modifications, missing guards, or leaking fluids. A diaper shall be attached to the unit to avoid ground contamination in the event of an accidental discharge.

5) If powered industrial vehicle, fork truck, or material lifts are equipped with seat belts, they must be worn. If the unit is not equipped with a seat belt, an authorized service technician must install a retrofit kit.

6) Powered industrial vehicle operators shall be trained and qualified to operate the vehicle in accordance with OSHA 29 CFR 1910.178 and the ANSI A92 guidelines.

7) Contractors shall supply the PM information on the operator's training and the powered industrial vehicle's inspection, preventive maintenance, and safety records.

8) Powered industrial vehicles and any associated attachments or rigging equipment shall be inspected each day prior to use. Defective equipment shall be red tagged and taken out of service.

9) Contractors shall not use NY CREATES powered industrial vehicles.

10) Operators of powered industrial vehicles shall carry their operator’s license with them at all times.

9.3 Cranes and Hoists

1) Contractors shall review and follow **EHS-00067** – Use of Overhead and Gantry Cranes, Hoists, Lifts, and Slings Procedure and fill out a Crane Work Permit (**EHS-00067-F4**) prior to use on Site.

2) The construction, inspection, operation, and maintenance of hoists and cranes shall comply with all legal requirements including, but not limited to, OSHA 29 CFR 1910, Subpart N - Materials Handling and Storage, OSHA 29 CFR 1926, Subpart N - Cranes, Derricks, Hoists, Elevators and Conveyors, and OSHA 29 CFR 1926, Subpart CC – Cranes and Derricks in Construction.

3) Cranes and hoisting equipment are powered or manually operated devices used to lift, or to lift and transport suspended loads. Special precautions are necessary to control hazards associated with hoisting operations.

4) Hoisting equipment includes, but is not limited to, hoists, cranes, slings, shackles, grabs, beams, gantries, and lifting bars.

5) Any proposed use of cranes and hoisting equipment shall be approved by and coordinated with the PM. EHS shall be notified before mobile cranes, tower cranes, and derricks are used.

6) Contractors shall not use NY CREATES hoisting equipment nor attach their hoisting equipment to NY CREATES property unless the attachment point is rated to withstand the load and is specifically authorized by the PM.

7) Hoisting equipment shall be designed, built, and rated to withstand the applied load. The equipment shall be prominently marked with the rated load.

8) A crane pre-walk must be conducted 5-7 days prior to the crane activity. EHS, ERT, PM, Security and any other applicable affected parties shall be present on the walk. The crane vendor must provide representation at the pre-walk.

9) Daily inspections of hoisting equipment shall be performed before it is used.

10) Defective equipment shall be taken out of service and tagged.

11) Operators shall be trained and licensed in the operation and safe use of hoisting equipment in NYS.

12) Before each lift, the Operator must sound a single blast of air horn as to alert others in the area to a lift in progress.

13) Load hooks shall be swivel-type and self-tracing.

14) Hoisting equipment shall not be used to lift people unless it is designed and approved for that purpose.

15) The area or building section within the swing radius shall be barricaded or otherwise guarded to prevent people from entering.

16) Personnel shall be kept clear of suspended loads and loads about to be lifted.

17) Hoisting equipment shall be removed from the site or otherwise secured when it is not being operated.

18) Cranes shall have evidence of an annual inspection.

19) A thorough inspection shall be performed on the crane after it has been placed/erected, but before the lifting of the boom. Each day, the Contractor shall complete a written inspection checklist that will remain on the vehicle during operation.

20) All operators shall be licensed by the State of New York for the type of equipment they are operating (e.g., crane operator, boom truck operator, crane operator restricted to cherry picker type hydraulic cranes, etc.). This shall include any vehicle with a reach capability of 40' or more, or a lift capacity of five (5) tons or greater. The operator of these vehicles must have a current NYS crane license. All certifications and licenses shall be provided to the PM at least two days before the work starts.

21) Cranes shall not be operated in adverse weather conditions (e.g., lightning, high winds, storms, heavy rains, poor visibility) and:

- The Contractor shall supply trained signal people, where necessary
- Cranes shall not be operated within 50 feet of overhead electrical power lines without approval of the PM
- The requirements of OSHA 29 CFR 1910.333(c)(3) and/or 1926.416 shall be strictly followed when working near overhead electrical power lines

9.4 Mobile Lifts, Aerial Lifts, and Work Platforms

1) Mobile work platforms (e.g., MEWPs) and their use shall comply with federal, state and local legal requirements including, but not limited to, OSHA 29 CFR 1926.453, 1926.556 and ANSI A92.3/A92.6 and the EHS-0035 Powered Industrial Vehicles, Non-Motorized Hand Trucks and Pallet Jacks and MEWP.

2) Any proposed use of mobile work platforms, (e.g., aerial lifts, elevating aerial platforms, elevating work platforms, rolling mobile scaffolds, vertical lifts) shall be approved by and coordinated with the PM.

3) MEWPs shall have:

   - Emergency stop devices located at both the upper and lower control stations that will deactivate all powered functions
   - A self-propelled platform, equipped with passive brakes which shall hold the unit on any slope it is capable of climbing
   - A platform with a method to prevent free descent in case of hydraulic, pneumatic, electrical, or electromechanical failure
   - A power-elevated platform with a clearly identified means for emergency lowering that is readily accessible from ground level
   - Hydraulic or pneumatic actuated outriggers or stabilizers that shall not retract in the event of a system failure
   - A platform with a 42-inch high top railing, an intermediate railing, a toe-board, and a chain or self-closing gate at the platform entrance
   - A slip-resistant platform deck surface
   - A clearly indicated platform load capacity

   NOTE: MEWPs shall NOT be moved in elevated position if the ground/floor surface has holes or irregular surfaces which could cause the platform to become unstable or tip over.

4) Contractors shall comply with the following when using MEWPs:

   - Only trained and authorized personnel shall be permitted to operate the platform
   - Personnel loading of the platform must comply with the manufacture’s specifications for each unit.
   - The platform entrance self-closing gate shall be closed before the platform is raised, lowered, moved, or used
   - Employees shall always stand firmly on the floor of the platform and never sit, stand, or climb on the rails or use planks, ladders, or other devices on the platform, at no time is the unit to be used as an elevator

- Employees shall wear fall protection when working from platforms including those that have articulating arms (e.g., bucket trucks, aerial lifts)
- Safety cones shall be placed around the platform to alert personnel of potential hazards, and a spotter must be used for all movements of the unit
- The platform shall not be raised to a height that exceeds four times the width of the base unless outriggers are extended
- Prior to use each day, the platform shall be inspected for defects and properly operating controls
- Prior to use each day, a work site pre-walk must be conducted by the operator and the operator's supervisor noting any obstructions, overhead wires, piping systems, and any working service deviations
- All platform occupants and operators shall use 100% tie-off to manufacturer's anchorage points
- The platform deck shall be kept clear of tripping hazards and slippery substances

10 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Contractors shall comply with the requirements of OSHA standards (e.g., 1920 Subpart I – Personal Protective Equipment) which apply to performance of hazard assessments, employee training, selection, supply, use, care, limitations, storage, and disposal of PPE. Contractors are responsible for assessing the hazards, determining, and providing the necessary PPE, and ensuring that PPE is available, effectively used, and properly maintained. Time lost while obtaining the necessary PPE will be at the Contractor's expense. Contractors shall consult the SDS for additional PPE requirements when working with or around hazardous materials. PPE equipment shall be kept in good condition and replaced immediately, if damaged.

10.1 Eye and Face Protection

1) Comply with OSHA 29 CFR 1910.133 and 1926.102 eye and face protection requirements.
2) Wear eye and face protection that meets the performance requirements of ANSI Z87.1 and is labeled as such.

3) Wear eye and face protection when machines or operations present potential eye or face hazards.

4) Use eye protection that provides side protection when there is a hazard from flying objects.

5) Use goggles and a face shield together when there is the possibility of a chemical splash on the face and eyes.

6) Use the proper lens shade when welding, cutting, brazing, or conducting other hot work operations.

7) Use the proper lens shade when working around exposed laser beams with the optical density (OD) adequate for the laser energy involved.

10.2 Fall Protection

1) Comply with OSHA 29 CFR 1926, subpart M - Fall Protection, and OSHA 29 CFR 1910.28, 1910.29, 1910.30, and 1910.140 requirements.

2) Use personal fall protection systems where workers are exposed to a fall which is six (6) feet or greater (OSHA Construction Standards) or four (4) feet or greater (OSHA General Industry Standards), except where guardrail systems are provided on the exposed sides.

3) Use anchorage, connectors, body harness, retractable lanyard, lanyard, deceleration device, lifeline, or suitable combinations of these.

4) Secure lifelines, lanyards, and deceleration devices to proper anchorage points.

5) DO NOT secure lifelines or lanyards to sprinkler systems or utility piping.

6) DO NOT use a body belt for fall arrest.

10.3 Foot Protection

1) Comply with OSHA 29 CFR 1910.136 foot protection requirements.

2) Use protective footwear when working in an area where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, or when the use, or protective footwear will protect the affected employee from electrical hazard.

10.4 Head Protection

1) Comply with OSHA 29 CFR 1926.100 and 1910.135 head protection requirements.

2) Wear hard hats in areas where there is a possible danger of head injury from bumps, impact, flying or falling objects, electrical shock or burns, and where required by signage.

10.5 Hand Protection

1) Comply with OSHA 29 CFR 1910.138 hand protection requirements.

2) Use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances, sever cuts of lacerations, severe abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes.

10.6 Hearing Protection

Wear appropriate hearing protection in high noise level areas (e.g., generator rooms, fan rooms, boiler rooms) to reduce noise exposure levels as required by OSHA 29 CFR 1910.95 and 1926.52.

10.7 Respiratory Protection

1) Use respirators in compliance with OSHA 29 CFR 1910.134.

2) Consider alternatives, such as substituting less hazardous materials and the use of temporary ventilation, **before** requiring respiratory protection.

10.8 Electrical Protective Equipment

Contractors shall ensure that rubber insulation blankets, rubber insulation matting, rubber insulating covers, rubber insulating line hose, rubber insulating gloves, and rubber insulating sleeves comply with OSHA design requirements in 29 CFR 1926.97 and 1910.137 standards.

11 LASER, RADIATION SOURCES, AND EQUIPMENT

11.1 Lasers

1) Contractors shall review and understand **EHS-00048** - Laser Safety Policy prior to using mobile lasers or laser products on site.

2) Lasers are capable of producing injuries to the eye and skin; laser equipment shall be operated in compliance with ANSI Z136.1 and NY State Industrial Code Rule 50.

3) Class 2, 3, and 4 Lasers shall not be brought on site without prior approval from the PM and NY CREATES Laser Safety Officer (LSO) and shall not be used overnight without prior approval from the PM and LSO.

4) Laser products shall comply with all applicable regulations.

5) Lasers shall be certified by the Food and Drug Administration Center for Devices and Radiological Health.

6) The following information shall be submitted to the PM and LSO prior to using mobile lasers or laser products:

   - A copy of a valid certificate of competence issued by the State of New York Department of Labor (NYSDOL) for each employee operating mobile laser equipment. The category of certification must be appropriate for the intensity of the laser used.
   - A copy of the Contractor's procedures for safe operation of laser equipment.
   - The hazard class, wavelength, and output characteristics of each laser.

7) During laser operation, access shall be restricted to authorized personnel, the area shielded, and protective equipment used.

8) An appropriate warning sign shall be posted at the entrances to the work area.

11.2 Radiation Equipment

1) Contractor shall review and understand **EHS-00066** – Radiation Safety Program, prior to working with radiation sources or equipment on site.

2) Radiation generating equipment includes any source or equipment that produces ionizing or non-ionizing radiation such as X-ray equipment, radioactive materials, radio frequency (RF) sources, ultraviolet (UV) sources, infrared (IR) sources, and magnetic field sources.

3) DO NOT bring any radioactive materials or radiation-producing devices onto the site without prior approval from the PM, and the PM must first obtain permission from the EHS Radiation Safety Officer (RSO) at least one (1) week prior to the equipment/material's arrival on site.

4) Radiation sources and equipment shall not be used without the approval of the PM and RSO.

5) Contractors shall comply with all federal, state and local legal requirements.

6) Contractors shall obtain any licenses or permits necessary to use radiation sources or operating equipment. A copy of the license and the Contractor's safe operating procedures shall be presented to the PM and RSO at least one (1) week before work starts.

7) Contractors shall provide radiation safety monitoring equipment as required by law. This monitoring equipment shall have been calibrated within the last year. Proof of calibration and necessary training of Contractor's employees must be submitted to the RSO at least one (1) week prior to work commencing.

8) Contractors are responsible for erecting and maintaining the required warning signs and isolation barriers.

9) Radiation sources shall not be left unattended during use.

10) If work involves maintenance, modification, or removal of shielding on a radiation-producing device located on site, radiation surveys must be performed by the RSO after the work is complete.

11.3 Radiographic Testing

1) Contractors shall notify the PM and RSO at least one (1) week before any planned radiographic testing.

2) The PM will notify the RSO at least one (1) week prior to scheduling any radiographic testing. No radiographic testing will occur without the agreement of the PM and RSO.

3) Contractors shall:

   - Have a current license issued by the State of New York or the Nuclear Regulatory Commission
   - Meet all requirements of NYS Industrial Code Rule 38
   - Have all ionizing radiation sources used for testing approved by the RSO
   - Provide copies of their operational and source emergency procedures, source decay curves, and isodose line charts.
   - Have appropriate calibrated radiation monitoring equipment available during testing
   - Erect appropriate warning signs and isolation barriers at a distance from the radiographic testing source where the exposure rate will not exceed 2 milliroentgens per hour
   - DO NOT leave radiation sources unattended or on overnight

12 WASTE DISPOSAL

12.1 Waste Handling

Contractors shall:

- Reduce the amount of waste that is generated, re-use materials with the concurrence of the PM, and segregate waste materials for recycling and disposal.
- Properly transport, store, handle, and contain waste to prevent spills, leakage, discharge, or release to the environment.

- NOT discharge or dispose of waste into a storm, sewer, industrial or sanitary drain, sink, restroom, trench, trash, dumpster, ditch, stream, or body of water, etc., unless authorized to do so by EHS

- Dispose of waste materials according to directions by the PM and the documentation the PM provides (such as contractor chemical authorizations).

12.2 Chemical Waste

1) Contractors shall review and follow **EHS-00009** – Hazardous Waste Management.

2) Chemical waste includes, but is not limited to, acids, bases, asbestos or asbestos-containing materials, batteries, caulk, caustics, cement / glue or sealant, chemicals, cleaning products, contaminated pipes/exhaust hoods/ducts/tanks, floor tile, insecticide, laboratory equipment, fluorescent lights, ballasts/lamps, oils and fuels, paint and coatings, refrigerants, smoke detectors, and solvents.

3) Contractors shall inform the PM of any chemical waste generated as a result of the performance of their work. Waste includes empty containers depleted at the work site.

4) The Contractor shall remove all hazardous material that they brought on site, and they shall label and dispose of the waste in accordance with all applicable requirements.

5) Hazardous waste that is generated because of the work that is performed on site shall not be removed from the site by Contractors.

6) It is the responsibility of the hazardous gas and chemical handling firm (contracted by NY CREATES) to collect the hazardous waste generated at the point of generation (e.g., labs, cleanrooms, equipment rooms, etc.) and transport them to the appropriate permitted hazardous waste storage locations.

12.3 Solid and Recyclable Waste

1) Solid waste includes, but is not limited to, the following materials (when not contaminated with chemical waste): bottles and cans, cardboard, construction debris, metals, pallets, paper, scrap furniture, and wire.

2) Contractors shall review and follow **EHS-00009** - Hazardous Waste Management and **EHS-00087** - Onsite Trash and Recycling Management.

12.4 Wastes Associated with New Construction

Contractors must inform the PM of any chemical wastes generated as a result of a new construction and the PM, contactor, and any other necessary personnel (i.e., EHS) will determine who is responsible for the proper disposal of the wastes generated.

13 STORMWATER PROTECTION

IMPORTANT: Contractors shall abide by the requirements and conditions of **EHS-00086** – Stormwater Pollution Prevention Policy and comply with applicable requirements of the New York State Pollutant Discharge Elimination System (NY SPDES) general permit for stormwater discharge from the site.

13.1 Good Housekeeping and Protecting Stormwater Systems

1) DO NOT litter or empty trash in parking lots or areas that are exposed to stormwater.

2) Collect debris from sweeping in the work area. Properly dispose of unwanted materials in waste collection containers.

3) NO dumping or disposal of oil or any chemicals on the ground, in storm drains, ditches, or waterways.

4) Beware and protect nearby stormwater intake drains while performing daily tasks on site.

5) Have spill cleanup materials readily available by the work area while using chemicals outdoors.

6) Clean up spillage and chemical residues immediately while performing tasks on site.

NOTE: No outdoor chemical staging is allowed without EHS approval.