

NC State University Design and Construction Guidelines

Division 02 Decommissioning & Decontamination

1.0 Purpose

- A. These guidelines provide a methodology and requirements for the Designer to incorporate into bid documents that a Contractor shall follow in order to assure appropriate methods are undertaken prior to demolishing, repairing or replacing existing fume hoods, fume hood ductwork, fume hood fans, chemical waste piping, sinks, or other parts of buildings that may have had contact with hazardous materials. The design must provide a comprehensive plan from the bid process, through project implementation and construction management.
- B. The Designer and Contractor shall refer to the NC State's Environmental Health and Safety (EHS) website, www.ncsu.edu/ehs/haz_waste/index.htm referring to the university's comprehensive program for the management of hazardous materials from university operations.

2.0 General Requirements

- A. Requirements for contractor qualifications -Regardless of projects size, all contractors performing decommissioning/ decontamination work involving hazardous materials on NC State property are required to submit qualifications for university approval.
- B. Contractor Required Submittals - The following items shall be required to be submitted for pre-qualification review:
 - 1. Evidence of a minimum 5 years experience in decontamination work involving hazardous material. Include evidence of experience and training of personnel to be performing decontamination activities.
 - 2. Certification and or licensure to perform decontamination activities.
 - 3. DOT Hazardous Waste Transportation ID Number.
 - 4. Proof of all training required under OSHA and EPA standards for all workers involved, including but not limited to Hazardous Communication Training and Personal Protective Device Training.
 - 5. Name, Address, and ID Number of Hazardous Waste Treatment, Storage, and Disposal (TSD) Facility proposed to be used .
 - 6. Proof of Insurance as required by NC State minimum insurance requirements.
- C. Cleaning Agents - The Contractor shall apply methods that utilize non-hazardous cleaning agents, and methods that generate the lowest possible quantity of waste materials. For example, if steam cleaning is utilized, rinse material should be filtered/treated in a manner to allow discharge to the sanitary sewer.

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- D. Hazard Assessment - The Contractor will be provided with a copy of the latest chemical inventory for the space. This will represent “best available information” and contractor shall assume that the potential for unlisted residues exists.

3.0 Hazardous Waste Removal Requirements

- A. Waste Management -The contractor shall provide a Waste Management Plan to NC State for approval prior to implementing any work. www.ncsu.edu/ehs/haz_waste/index.htm Contractor to provide all materials, personnel, protective equipment, chemical analysis capabilities, necessary to remove hazardous chemical residues from laboratories. Management of waste generated by project activities will be the responsibility of the contractor, and should be described in their plan.

4.0 Hazardous Waste Liabilities

- A. Waste disposal responsibility shall be either the contractor or NC State per NC State EHS website's, *Management of Building Demolition Debris* www.ncsu.edu/ehs/environ/BUILDING_RENOVATION.pdf
- B. Containers - Containers used for storage of waste must be United States Department of Transportation (DOT) approved. The contractor shall supply bins, tanks, or tank trucks, per plan. Containers shall remain closed at all times except when material is being added. NC State shall provide containers for items collected by NC State EHS, see link to *Hazardous Waste Generator Manual*, www.ncsu.edu/ehs/haz_waste/haz_waste_manual.pdf
- C. Labels - Containers of hazardous waste shall display hazardous waste labels that clearly identify waste streams. The Contractor shall not mix different waste streams in the same container. The Contractor shall mark the initial accumulation date on the hazardous waste label when waste is first placed in the container.
- D. Waste Storage Area - Contractor shall store closed and sealed waste containers on the construction site in an area that is secured, covered, and well identified with hazardous chemical signage. The Contractor shall ensure that hazardous wastes are not stored for more than 90 days.
- E. Spill Response - Contractor shall ensure that appropriate portable fire extinguishers, spill supplies and communications are present where hazardous wastes are stored. Contractor shall maintain enough spill response supplies to contain at least 110% of any accumulated waste. Contractor shall immediately contact NC State if there is a spill, and begin clean up procedures per the spill plan.

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- F. The Manifest Report - NC State shall receive a copy of all disposal certifications/manifests for all waste shipped.

5.0 Materials

- A. Bio-hazardous Materials - Contractors shall identify and develop a plan for biological hazardous materials that utilizes NSF 49 standards for decontamination of biological safety cabinets, per NC State EHS Guidelines, www.ncsu.edu/ncsu/ehs/www99/left/bioSafe/index.pdf . See also NC State University EHS's Biological Safety Manual, www.ncsu.edu/ncsu/ehs/biosafety.htm
- B. Radioactive Materials - If regulated radioactive materials were used in the room, the room will be cleared by NCSU prior to the Contractor performing work in the room. For posted areas, NC State shall provide documentation to the Contractor that the room is free of regulated radioactive contamination. If the Contractor discovers an intact radioactivity warning label, immediately notify NC State EHS Radiation Protection at (515-5208). Also, refer to NC State EHS's Radiation Safety Manual, www.ncsu.edu/ehs/radsafety.htm
- C. Chemical Materials - The Contractor is not responsible for removing containers of hazardous chemicals. If the Contractor finds a hazardous chemical container, contractor should notify NC State.
- D. Fume Hoods and Ductwork – NC State shall provide the designer with chemical usage records for the current hood owner. However, contractors shall utilize perchlorate screening tests prior to the removal or demolition of fume hoods.
- E. Drain Traps and Plumbing - Assume that all laboratory drain traps contain mercury. If drain traps are to be removed, the Contractor shall remove the trap so that the trap contents are contained.
- F. Light Ballasts and Lamps - NC State shall provide containers to the electrical contractor for disposal of non PCB tubes and ballasts.
- G. Mercury - The Designer shall note on drawings that the Contractor shall have a mercury spill kit, mercury vacuum and appropriate communication equipment on site at all times. If mercury is detected visually or by mercury vapor detection, the Contractor shall immediately notify NC State and the Contractor shall initiate cleanup activities, per plan.
- H. Vacuum Pumps and Lines - Vacuum systems may contain mercury. Use spill prevention methods to avoid spilling mercury when removing vacuum lines.

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- I. Ozone Depleting Compounds / Refrigerants - The Designer shall note on drawings that the Contractor shall remove ozone depleting compounds (refrigerants) from refrigeration or air conditioning equipment before demolition.

6.0 Reports/ Documentation

- A. Spreadsheet/Decontamination Tracking Procedure - The Designer shall note on drawings that the Contractor shall use a spreadsheet to list rooms to be decontaminated and track decontamination progress. A sign shall be posted on each room indicating the status of the cleaning / demolition process. At the conclusion of the job, the Contractor shall provide NC State with a copy of all disposal certifications/manifests for all waste shipped.
- B. Samples and Analytical Reporting Procedure - NC State shall notify Contractor where analytical testing after cleaning is required. The contractor shall provide a price per sample, including a breakdown of labor to collect the sample, testing, materials, and analytical costs. The Contractor shall use a unique identification number that can be referenced to the location indicated on a map.
- C. Subcontracting Restriction - Hazardous materials demolition work under this contact will not be sublet. Hazardous Materials contractors are only authorized to subcontract work that does not involve disturbance of hazardous materials. Ductwork removal may be subcontracted if demonstrated by the contractor to be non-hazardous.
- D. Certification of Clean - Surfaces cleaned shall be certified by the Contractor that they have been cleaned according to ANSI 29.11, laboratory decommissioning standard, for surface contamination.