ENVIRONMENTAL HEALTH & SAFETY ISSUES

for

RENOVATION/DEMOLITION PROJECTS

VSHE  Fall Safety Seminar 2017
Hazardous Materials Abatement

- Asbestos
- Lead-Based Paint
- PCBs
- Mercury
- Mold
- UST/AST
- Miscellaneous
Asbestos

EPA 40 CFR 61 (NESHAPS) and OSHA 29 CFR 1926.1101

- Category I and II and RACM
- Requires survey prior to demolition regardless of structure age

Asbestos was used in a wide variety of materials – even today asbestos containing products are available
Asbestos

OSHA 29 CFR 1926.1101

- Class I, II, III, IV

- 20 day notification to DLI for removal of area greater than 10 linear, square, or cubic feet

- DLI enforces EPA NESHAP regulations for asbestos in Virginia
Asbestos

Although a material may contain less than 1% asbestos, OSHA still regulates

Asbestos

Ceiling Plaster
Asbestos

Texture Surface with Brown Coat

Textured Surface (+)
Brown Coat (-)

#00921K24
#00921K23
Acoustical Plaster
Asbestos

Aircell
Asbestos

Miscellaneous – Floor Tile
Asbestos

Roof Flashing
Asbestos

Discovery of New Materials
Lead-Based Paint

EPA Regulations under the Resource Conservation and Recovery Act (RCRA) for Hazardous Waste Disposal

Contractors need to address lead coatings for both recycling (steel structures) and disposal.
Lead-Based Paint

- OSHA regulation 29 CFR 1926.62
- What does OSHA consider Lead-Based Paint?
- Exposure risks generally based on airborne concentrations PEL 50 ug/m³/AL 30 ug/m³
Lead-Based Paint
PCBs

Transformers, Light Ballasts

Regulated under Toxic Substances Control Act of 1976 (TSCA) and Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or Superfund Law (CERCLA)
PCBs

- Not covered by RCRA
- If recycled no EPA generator ID needed – cost 2x greater for disposal
- Federal facilities or LEED projects often have criteria indicating percentages of mandatory recyclable material
- If disposed of as hazardous waste, a third party waste broker is generally used to handle EPA registration/notification
- Proper disposal is the best protection against future liability
PCBs

- A typical 55 gallon drum will hold 150 – 300 ballasts from 4 foot light fixtures or 60 – 100 ballasts from 8 foot fixtures and will weigh 600 – 1,000 pounds.

- Disposal costs approximately $300 per drum; recycling approx $600 per drum.

- For exact packing instructions, contact the disposal facility to which you plan to ship the ballasts. Non-leaking ballasts must be disposed of within one year of removal.
PCBs
PCBs

Light Fixture
PCBs

New Issue: PCBs in Caulking

- EPA issued a guidance document September 25, 2009
- Thought to be in structures build between 1950 – 1978
- EPA does not require testing of caulk if disturbed by renovation/demolition but recommends it
- If determined to be present (>50ppm) it is considered unauthorized use and must be removed
Mercury

- Fluorescent light tubes, HID tubes
- Even “green” light tubes contain mercury and require verification prior to disposal
Mercury

Disposal

- <260 ppm – treat and dispose of in a suitable “D” landfill
- Cost - $225 per drum (typically 600 – 800 crushed bulbs in a drum) for disposal. $1 per intact tube for recycling
- >260 ppm - big problem “retort”
  Considered to have free mercury - need to recover mercury $2200 per drum for treatment and disposal (HID lamps included)
Mercury

Other Sources of Mercury

- Thermometers
- Thermostats
- Switches
- Laboratories (past use contamination)
Mercury

Other Sources of Mercury

Gym and other similar type newer floors systems

Many of the polyurethane rubber like floorings used in gyms that were manufactured from around 1960-1980 contain up to 1000 mg/kg of mercury in phenyl mercuric acetate (or other derivative organic mercuric salts) - these floors actively give off low levels of mercury.
Mercury

Light Fixtures
Mercury

Light Tubes
UST / AST

- Typically heating oil tanks
- Need to be properly closed
- Most older sites that are being demolished have had tanks in the ground longer or in old tank basins
- Even new tanks can leak and cause petroleum contamination
UST / AST

Contamination
Miscellaneous

- All systems need to be decommissioned and removed properly
- Stored chemicals
- Paints, cleaning chemicals
- Specialized fire protection systems (Halon)
- Generators
- Radioactive Exit Lights (Tritium Source)
- Mold
- Medical waste
- Pigeon waste
Miscellaneous

Mold in a Wall Cavity
Bird droppings inside duct work. This is pigeon waste, droppings from the pigeons that entered the vent work via an open vent on the roof of the building. This will be disturbed is sheet metal is to be salvaged. Worker exposure generally covered under General Duty Clause.
Miscellaneous

Pigeon Contamination

If to be disturbed full ppe and training – contaminate control measures need to be also in place - containment may also be needed (especially if area to be re-occupied).

Hazards

• **Fungal infections** (i.e. thistoplasmosis and Cryptococcus related organism infections)
• **Bacterial** (Salmonellosis)
Questions?