Environmental Health and Safety

EHS Guidelines for Construction, Renovation and Demolition

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Purpose

This guidance document has been prepared by the Arizona State University Department of Environmental Health and Safety and University Services Capital Programs Management Group, or USCPMG, to define the environmental, health and safety responsibilities of ASU personnel managing contractors who conduct work on campus property. These guidelines apply to all contractor activities that may impact the health and safety of ASU employees, students, the general public, and contract personnel or that pose an environmental hazard, or are contrary to any applicable regulations and contract requirements. The information provided in this document is to be used to assist Facilities Planning and Development project managers and site inspectors in the identification of construction hazards and facilitate inter-departmental communications. Furthermore, it should be used by contractors as a reference source for basic environmental, health and safety information while working on the ASU campus and affiliated locations.

Many contracted services have the potential for direct impact to ASU students, faculty, staff, employees, and visitors. Failure to comply with construction specifications or accepted EHS practices and regulations may pose a risk to the campus community, ASU assets, and the environment. For these reasons, this guidance document is written to explain the roles and responsibilities for conducting and managing work performed by contractors. This document is not intended to replace a contractor's safety program nor summarize all the EHS regulations governing the contractor's operations.

Note: This document does not address all environmental, health and safety issues that may arise during a construction, renovation or demolition project. It is designed to address those EHS and Capital Programs Management Group, or CPMG, issues that are typically encountered during the course of ASU projects. If conditions are encountered during a project that are not addressed in this document or clarification is required relative to site specific conditions, the contractor should consult with EHS and Facilities Planning and Development representatives.

Scope

This guidance document applies to all ASU Departments, Colleges, and University Services Units that hire outside contractors to perform work on campus and affiliated off campus locations. Oversight of contractual services is the general responsibility of the contracting department. The individual responsible for coordinating and accepting the work is referred to in this document as the Project Manager under Facilities Development Management or FDM. The individual who inspects the progress of work at the project site is referred to as the Site Inspector or SI.

In all circumstances, outside contractors are directly and legally responsible for the health and safety of their employees, and for compliance with environmental, health and safety regulations. They must also correct EHS and Facilities Development Management deficiencies that are brought to their attention. An identified imminent danger must be corrected immediately. Failure

to adequately address deficiencies is cause for progressive actions up to and including discharge from campus.

Definitions

Asbestos containing material – Also known as ACM. A material that contains more that 1% asbestos. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered. Additional information is available at cfo.asu.edu/asbestos-management-program.

CPMG – ASU Department of Capital Programs Management Group

Competent person A person who is trained and capable of recognizing existing and predictable hazards in the workplace and has the authority to take corrective action and/or stop work. In terms of fall protection, this individual can also identify dangerous conditions in the personal fall arrest system or any component as well as their application and use with related equipment. For trenching and shoring, this person is trained in the relevant OSHA requirements, soil types and conditions, acceptable benching and sloping methods and excavation support techniques and equipment.

Confined space - A confined space is a space that:

1. is large enough and so configured that an individual can enter and perform assigned work;
2. has limited or restricted means for entry or exit;
3. is not designed for continuous occupancy.

A permit-required confined space means a confined space that has one or more of the following characteristics and therefore requires a permit:

1. contains or has the potential to contain a hazardous atmosphere;
2. contains a material that has the potential for engulfing an entrant;
3. has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section;
4. contains any other recognized serious safety or health hazard.

Environmental Health and Safety – Also known as EHS. The Department of Environmental Health and Safety is a department within the Executive Vice President, Treasurer and CFO and, has the primary responsibility for facilitating ASU compliance with all applicable environmental and safety laws, regulations and permit conditions. EHS serves as the lead department in coordinating ASU activities with environmental and safety regulatory agencies including Arizona Occupational Safety and Health, Arizona Department of Environment Quality, Arizona Building and Safety, Arizona Department of
Administration, U.S. Environmental Protection Agency, U.S. Center for Disease

Control, Nuclear Regulatory Commission, and other local, state, and federal regulatory institutions.

EHS is organized into the following units: Biosafety, Environmental Affairs, Fire and Safety Prevention and Training, Occupational Safety and Health, Radiation and Laser Safety, and EHS management and support services.

EHS units have the following general responsibilities:

All EHS units may be reached by calling 480-965-1823. The EHS web page, includes other EHS compliance guidelines, Fact Sheets summarizing key EHS issues; training opportunities; all EHS policies and procedures; EHS forms, permit applications, department emergency plans information, and related information and links.

- Biosafety is responsible for overseeing the safe use of biological agents and for coordinating response to biological incidents, including security issues in biosafety laboratories/areas.
- Environmental Affairs is responsible for overseeing all environmental compliance activities including hazardous and biohazard waste management; environmental permitting, environmental sampling, spill response, environmental cleanup activities, and for advising, facilitating, reviewing, and tracking, all-natural resource permits associated with construction – these include wetland, floodplain, sediment and erosion control, storm water and forestation permits.
- Occupational Safety and Health is responsible for facilitating compliance with applicable safety and health regulations including: ergonomics, hazard communication; fall protection; confined space entry; lockout/tagout; asbestos and lead management; accident/incident investigation and mitigation; laboratory inspections and certifications, and indoor air quality investigations and all related training.
- Radiation and Laser Safety has overall authority over licensing, purchase and use of radioactive sources and laser use and safety.
- The Fire Safety Unit includes assisting the State Fire Marshal's Office with jurisdiction over ongoing campus activities including activities that pose a risk to building occupants, existing and new fire protection systems, ensuring management of the hot works permits, public assemblies/special events, plan reviews, construction/renovation/demolition inspections, International Code Council, or ICC, and recognized regulations/codes/standards compliance related to fire and life safety, fire protection and life safety systems certifications, annual fire and life safety inspections, hazard evaluations, fire investigations, department emergency response, and emergency preparedness.

Imminent danger - An imminent danger is defined as a condition or practice that (1) could reasonably be expected to cause death or serious physical harm to ASU faculty, staff, students, visitors, and/or contractor personnel, or (2) has or may cause an uncontrolled release of hazardous or otherwise regulated material to the air, water or soil.

Lead exposures - Exposure to airborne concentration levels of various types of lead range from 5 micrograms to 30 micrograms per cubic meter of air (5-30 $\mu g/m^3$) timeweighted average over an 8-hour workday.

Lead-based paint - Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 mg/cm² by XRF or 0.5% by weight as measured by laboratory analysis.

Safety Data Sheet – Also known as SDS. A document supplied by a manufacturer that describes the ingredients, health hazards and means of protection related to a hazardous material. SDS's are required by and must meet the informational requirements specified by OSHA.

Facilities development management project - Manager The individual responsible for coordinating and accepting the contractor's work. The Facilities Development Management project manager may officially carry that job title – e.g., Facilities Development Management Project Manager for construction of a new building – or may have that contingent duty assigned to them. The Facilities Development Management project manager is the primary conduit of information between the contractor and ASU, and employees responsible for this work should have an awareness of EHS regulations, permits, plans and ASU policies.

Project monitor - The project monitor is an approved industrial hygienist or similar occupational, safety and health professional that has the responsibility and experience and/or is certified to provide asbestos and lead-based paint abatement project oversight.

Site inspector – More specifically for Asbestos, Building, Fire, and Safety – the individuals responsible for routine monitoring of contractor activities on the site are referred to as site inspectors. For projects managed by Facilities Development Management, an asbestos and building site inspector is assigned to the project. EHS will assign a fire site inspector and/or a Safety and Health inspector as requested by a Facilities Development Management Project Manager to monitor and certify all fire protection and life safety systems and monitor construction and site safety. These individuals routinely visit the site; monitors progress, identifies situations that do not comply with terms of the contract, code, and ASU specifications; and works in tandem with the Facilities Development Management project manager and the contractor to resolve those concerns.

Training

EHS will provide training for compliance guidelines and fact sheets; awareness training classes related to Biosafety, environmental affairs, fire safety, loss prevention, radiation safety, laser safety, construction safety, hazard communication, laboratory safety, bloodborne pathogen, special event safety, emergency preparedness, ergonomics, hazardous materials spill, and Spill Prevention Control and Countermeasure, or SPCC.

Duties and responsibilities

A Facilities Development Management Project Managers, or PM, shall be knowledgeable concerning EHS items that occur on projects that the PM is responsible for and receive training that provides an awareness of EHS issues as appropriate. Each PM is responsible for the following:

- Communicating to the contract that part of their end of project report card will include safety performance.
- Ensuring that all planned projects involving new construction; changes in existing space use and occupancy; changes in floor plans; and installation or modification of building systems are reviewed and approved by EHS at each design phase, as appropriate to ensure compliance with applicable codes and permits;
- Ensuring that ASU submits completed asbestos abatement information to the project.
- Ensuring that EHS has met with the contractors regarding the EHS requirements specified in the contract and this guideline, typically at the project kickoff meeting.
- Ensuring that pre-existing hazards at an ASU work site – i.e., presence of asbestos, lead, contaminated soil, etc. – are communicated to the affected contractor prior to the start of work.
- Ensuring that the contractor completes an incident report and submits to EHS for incidents involving contractor injuries other than first aid and/or damage to ASU property or equipment.
- Ensuring that the contractor has notified Facman when hot work is to be performed – welding, cutting, etc. – by application of permit, appropriate permits should be obtained and filed with the permit section in the CPMG. This can be done through the CPMG web site.
- Notifying the EHS Director or designee if the contractor fails to correct an identified imminent danger.
- Obtaining a copy of the firm's safety and health program as an attachment to the bid proposal and/or acceptance of contract when required. • Communicating observed or suspected EHS concerns to EHS.
- Requiring that contractors provide EHS copies of regulatory agency inspection and violation reports they may receive relative to the contracted work and the campus site they are working on.

Note: If work is to be done in a confined space, confirm the hazards associated with the confined space classification with ASU EHS. Contractors must follow their confined space entry program requirements. Notify your supervisor and ASU EHS prior to entering any confined space. Forward a copy of completed permits and documentations to EHS at PO Box 876412, Tempe, Arizona 85287-6412 or fax 480-965-0736.

EHS Employees are responsible for the following:

- Providing EHS training for individuals assuming project manager and site inspector responsibilities.
- Providing recommendations, as determined necessary, to the appropriate Facilities planning and Development project manager and to procurement for termination or similar action related to a contractor or contract.
- Providing technical support to PMs related to potential EHS issues and methods of compliance.
- Responding to complaints regarding contractor activities that may impact the safety of ASU employees and visitors, the campus environment, or that are deemed imminent dangers.

Note: EHS employees who observe an imminent danger shall inform contractual personnel that the activity must be immediately stopped until appropriate corrective actions are implemented. The EHS employee will immediately contact Facilities Development Management Project Manager – or their supervisor, if the Facilities Development Management project manager is unavailable or unknown – to explain the circumstances of the work stoppage, and shall notify

the EHS Director or designee in writing by the end of that business day. Notifies the EHS Director or designee if the contractor fails to correct an imminent danger. If a contractor failing to make sufficient efforts to correct imminent dangers, the EHS Director or designee shall determine the need to contact ASU University Services Administration, General Counsel, and/or the appropriate regulatory agencies. In the case of public and private partnerships, or other projects not directly managed by University Services, written notice will be provided to the appropriate responsible parties, the ASU General Counsel's Office and the Vice President of Administration.

Site Inspectors shall obtain EHS awareness training covering common environmental permit requirements and safety and environmental hazards associated with construction, renovation, and demolition projects. Each designated site inspector is responsible for the following:

- Becoming familiar with the contents of this guidance document as it applies to the contracted scope of work.
- Inspecting and monitoring assigned contractor and subcontractor project activities to ensure contract compliance with EHS requirements.
- Notifying the Facilities Planning and Development project manager and the contractor of any observed or reported EHS concern.
- Verifying that all hazardous waste containers are in good condition, closed, labeled with the identity of the container contents.
- Verifying that all hazardous waste is handled per direction of EHS Environmental Affairs.
- Verifying that copies of Safety Data Sheet, or SDS, are immediately available for all hazardous chemicals and products that will be brought onto campus.

Note: Site Inspectors are not to prescribe corrective action at a contractor-controlled site without specific authorization from the EHS Director or designee. Report any uncorrected imminent danger situation to the Facilities Planning and Development Project Manager and EHS immediately.

EHS requirements

The following information is provided to assist Facilities Development Management employees in recognizing hazards that may occur in conjunction with contractor projects; facilitate communications between Facilities Development Management and EHS regarding EHS construction issues; and to minimize risks that construction activities may impose on ASU employees, visitors and the campus environment. Facilities Development Management Project Managers, Site Inspectors and EHS staff should identify EHS concerns to the contractor, but not prescribe corrective actions. Contractors may be directed to government web sites or other generally recognized information services.

1. Emergency procedures

Reporting emergencies: If a Contractor notices signs that may indicate a fire, gas/vapor release, downed electrical wires, releases to the environment, etc., the contractor shall call 911 or call ASU Police using any campus phone or one of the available campus emergency call boxes ("Blue" phones). Provide the 911 operator with as much detail as possible, caller's name and the employer's name. Remain on the phone until the operator has verified the information. At this point, unless otherwise told, the contractor should leave the area per their emergency response guidelines and notify the Facilities Development Management Project Manager, Site Inspector, and/or EHS immediately.

Contractor responses: Upon hearing any alarms, the contractor should stop all work and evacuate as necessary. This includes ceasing all welding and burning activities, shutting off all equipment – electrical, motorized, and pneumatic – and extinguishing all sources of ignition. The contractor supervisor or crew leader should take a head count to ensure that all contract personnel are accounted for
and safe. The contractor personnel should remain within at a safe distance of the area they evacuated until the **all clear** is announced and the emergency response agency and/or ASU Police or ASU EHS has determined it is safe to reenter the site.

Obtaining assistance for medical emergencies: For immediate medical response call 911. When the dispatcher answers, the caller shall identify the area where assistance is needed, type of injury or accident, victim/s name, and the company name. The caller should not hang up until all the information has been verified.

Accident and incident reporting: If a person is seriously injured or the contractor becomes aware of a fire, explosion, fatality, or other serious incident, the contractor should immediately notify ASU Police. The Facilities Development Management Project Manager and EHS should then be immediately informed of the incident. Contractors are responsible for notifying OSHA in the event of a fatality, serious injuries or multiple injuries involving their employees. News releases should be coordinated with the ASU Media Relations Office on campus. **b. Work Issues.**

Protection of property: In accordance with the project contract, the contractor will be held liable for all damage to personal and real property as a result of the contractor's negligence to provide appropriate protective measures.

Clean-up: The contractor shall keep the work area, specifically walking and working surfaces, clean and free from debris and trash which could cause slipping and tripping hazards. Tools, materials, dirt, lumber, concrete, metal, insulation, paper, etc. should be promptly cleared and disposed of by the contractor. All debris should be disposed of each day off the campus or in a contractor supplied dumpster.

Demolition: Coordinate preparatory operations of utilities and mechanical service modifications with University Services Facilities Management Work Control Center 480-965-3633 in advance of work. Provide public pedestrian protections such as barrier fences and sidewalk sheds in accordance with local building code; and coordinate vehicle traffic control with ASU Police. Identify potentially hazardous material conditions at the site. When potentially hazardous conditions are apparent or suspected, testing shall be performed and the hazard eliminated

before demolition starts. Common hazardous material site conditions include – but are not necessarily limited to – asbestos-containing building materials, or ACBMs, lead based paint, or LBP, polychlorinated biphenyls, or PCBs, in lamp ballasts, mercury in all electronic lamps and thermostats, microbial amplification reservoirs – molds,
fungi, animal droppings – recoverable refrigerants, caustics, corrosives, metals, and petroleum products.

Asbestos and lead-based paint: Asbestos-containing building materials and lead-based paint coated substrates are located throughout ASU buildings and present special management requirements. These materials are regulated by OSHA, and USEPA. ASU Policy CPM – 301-05 – Asbestos Abatement discusses the asbestos abatement protocols and can be reviewed in the ASU manual PDF.

- It is also attached in Appendix A of this document. An inspection of building materials for the presence of asbestos and lead hazards must be conducted prior to initiating renovation and demolition projects. EHS recommends that Facilities Development Management project managers confirm with CPMG prior to renovation to arrange for survey and abatement work. The form “Request for Asbestos Services” form is also included in the Appendices.

Federal and state regulations require the identification and management of asbestos and lead-based paint prior to renovation or demolition. All asbestos abatement projects must be overseen by a project monitor. The project monitor is an approved industrial hygiene firm that is professionally insured and qualified to provide abatement oversight. The project monitor must provide a scope of work that includes sampling protocols and the submission of a project monitoring report for CPMG’s review. The report must include an executive summary of all project activities and verification that all required abatement submittals meet technical specifications. NOTE: Lead based paint stripping projects generate Hazardous Waste with specific disposal requirement (see 6, b (xviii).

Asbestos and lead-paint abatement contractor's final progress payment should be withheld by Facilities Development Management Project Manager until EHS completes review of the project monitoring report. EHS is available for consultation with Facilities Development Management project managers and site inspectors on all aspects of asbestos and lead-based paint related work.

portable ladders and scaffolds: All walking/working surfaces including ladders and scaffolds that may be utilized by ASU employees are subject to inspection by EHS for compliance with OSHA regulations.

Site access and use: All sites must have controlled access to limit unauthorized individuals from entering the construction or renovation area. Large projects within a defined boundary, such as a new building site, must be fenced. Smaller sites within or in the vicinity of buildings must have temporary fencing, barricades, etc., subject to building code requirements. Building doors and roadways may not be blocked without the approval of the Facilities Development Management project manager or site inspector and concurrence with the ASU Fire Marshal. The use of parking lot space must be pre-approved by ASU Parking and Transit Services.

Fall protection: OSHA standards on fall protection must be followed. Major issues include: o providing engineering controls as a primary protective mechanism; or providing a competent person at the job site where fall hazards exist; and or providing personal protective equipment and training to protect employees from fall hazards where engineering controls are not feasible.

Contractor tools and equipment: All equipment brought to a project site by contractors must be in safe operating condition. All guards must be in place, and meet or exceed all applicable governmental regulations – OSHA, EPA, DOT, etc.

Transfer of flammable liquids to containers, equipment, and vehicles: All small quantities (5 gallons or less) of flammable liquids must be stored in an approved UL listed safety can in approved storage areas at the project site. Equipment refueling must be accomplished by using vehicles and hoses that are maintained, inspected and in good condition (appropriate bonding and grounding as required). All vehicle engines must be turned off during refueling activities. Using ASU fuel pumps for refueling contractor equipment is prohibited. ABC rated dry chemical fire extinguishers (10-lb. minimum) must be provided in the immediate area of the refueling and chemical storage areas. It is recommended that the transfer of flammable liquids from drums to small containers incorporate the use of grounding and bonding.

Electrical Safety/Lockout/Tagout: Work on ASU electrical systems is prohibited unless contractors, vendors or employees have been given authorization by University Services Management including both the Capital Programs Management Group, or CPMG, and Facilities Management, or FM. These systems include premise wiring, wiring for connection to supply, installations of other outside conductors on the premises, installations of optical fiber cable where such installations are made along with electrical conductors and work around exposed energized parts. All work on electrical systems must be performed in a **de-energized** state as required by OSHA unless employees have been authorized to work on systems live and they are trained and certified. Exceptions to the de-energized rule may be made for work where it can be demonstrated that de-energizing introduces additional or increased hazards or when troubleshooting or maintenance can only be performed on a live system. Only authorized/qualified persons may work on electric circuit parts or equipment that has not been de-energized. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools. ASU employees who are authorized to work on ASU systems are the authorized Facilities Maintenance staff and licensed/bonded electrical contractors and sub-contractors, working from designs that have been reviewed and approved through the University Services permit review process. For systems that are de-energized and subsequently locked and tagged out, ASU personnel and contractors must inform each other of their respective lock-out tag-out procedures and shall understand and comply with the applicable restrictions and prohibitions. ASU employees are required to perform lockout-tagout in accordance with the ASU policy and programs.

Confined space entry: Facilities Development Management Project Manager are responsible for the following:

- Identifying requirements for compliance with applicable confined space entry regulations and applicable portions of this plan in contract specifications.
- Interfacing with contractors where enforcement of confined space contract provisions is required.

- Notifying the contractor of the locations of permit-required confined spaces – as identified by the confined space inventory – where contractors will require access to inventoried confined spaces in order to completer work under the scope of a contract.
- Overseeing contractors requiring confined space entry.
- Providing EHS with the information necessary to update the confined space inventory when confined spaces are created or modified during campus constructions and renovation projects.

If a contractor is performing work that requires a confined space entry, the contractor must provide employees who are trained and qualified as required by 29 CFR 1910.146. I.e., Authorized Entrants, Attendants, Entry Supervisor/Competent Person, Rescue and Emergency Services, etc.

Excavation safety: All excavations on ASU property must be performed in accordance with applicable OSHA regulations – shored, sloped, shielded, barricaded, acceptable egress, etc. The contractor is responsible for providing a competent person at every excavation site. This individual must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them. Also, he or she must be able too through experience or training, to determine the suitability of equipment or materials used for support systems, shield systems, and other protective systems. Prior to starting the actual excavation, the contractor must ensure that all underground utility installations in the area, such as electrical, phone, gas, sewage, water, irrigation and fuel lines, have been identified –blue staked, coordinated through Facilities Development Management at 480-965-3633.

Hot work operations: EHS and Capital Programs Management Group has an established hot work policy and permit. No hot work is allowed without a permit. A copy of the policy may be obtained from Capital Programs Management Group or EHS. A hot work permit can be completed online at the following website:

cfo.asu.edu/fdm-bldg-permit-requirements.

Hazard Communication Standard: Also known as HAZCOM. OSHA requires that contractors train their employees in basic chemical safety precautions for chemicals they work with, so as not to cause a hazard for themselves and others in the vicinity. The contractors must manage all necessary PPE for their employees. ASU expects that all contractors will comply with OSHA's HAZCOM Standard requirements. Facilities Development Management Project Manager's must ensure that contractors make SDS's available for chemicals used in areas where EHS faculty, students, and staff may be exposed. Reference the ASU Hazard Communication Program for additional information.

Notification procedure: In compliance with ASU's Hazard Communication Program, departments and/or units will provide the project manager and/or outside contractors, performing work in their areas, with the following information:

- A list of all chemicals located in the work area where the outside contractor will be performing the work.
- It is recommended that each Project Manager, or PM, obtain the department's chemical inventory and SDS's prior to the initiation of the contractor's work.

- Provide SDS's upon request to the contractor for all listed chemicals.

Prior to the initiation of work, outside contractors will provide the area department and or unit with an SDS for each chemical being used during the work project and shall maintain a copy for each chemical being used at the work site for the entire duration the chemical is in use. ASU Facilities Management or Project Manager will:

- Establish a file for the contractor SDS's associated with the project.
- Forward the contractor SDS's to the area supervisor and/or safety coordinator with information regarding which work areas will be affected.
- Verify the contractor has remove all project related chemicals from the work area after the project is completed.

Supervisors and/or safety coordinators shall review the contractor SDS's with department and/or unit employees. The area supervisor and safety coordinator will be notified when the project is completed and will remove the contractor SDS's from their area file.

Personal Protective Equipment: Contractors must not create hazards for ASU employees, students and visitors. Hazardous areas should be properly secured and signage should be posted to identify PPE required at the project site and hazards posed by site activities. If non-contractor persons need to enter or pass directly through the work area, the contractor may be expected to provide appropriate PPE for such visitors at any time. The PPE to be made available is dependent on the hazards posed by construction activities. Typically, hard hats and safety glasses are required. Safety equipment supplied and used by contractors is expected to comply with OSHA requirements.

Hazard signage: Contractors must not create hazards for ASU employees, students and visitors. Hazardous areas should be properly secured and signage should be posted to identify PPE required at the project site and hazards posed by site activities.

Hazardous materials: There are many hazardous materials at ASU. These materials are typically found in laboratories in the form of chemicals, biological agents, and radioisotopes. Contractors must avoid creating an unsafe work environment or cause disruption of any lab activity when working in these areas. The following precautions should be followed by the contractor before working in a laboratory or hazardous material storage area:

- Advise the laboratory supervisor or primary researcher of the work that will be completed;
- Avoid contact with any lab equipment left in the work area;
- Do not allow the disposal of chemicals or hazardous materials via sinks, drains, ground disposal or by evaporation.
- Ensure compressed gas cylinders must be clearly labeled to identify their contents and chained or otherwise secured to a fixed object, such as a wall, to prevent them from falling and releasing their contents.
- Stage portable fuel tanks away from storm drains and any body of water and ensure the tanks are properly labeled and have secondary containment to contain any spills or leaks: and

Note: Nothing may be poured down building floor drains or storm drains including, but not limited to, chemicals, chlorinated water, detergents, glycols, and oils/fuels.

Safety Data Sheets, or SDS, for all chemical compounds used at the job site should be immediately available on-site or off-site. Contractors must be capable of providing an SDS within 1 hour of an incident. Contractor employees should carefully read container caution labels and be able to provide information concerning the hazardous materials they are using or storing.

Containers of chemicals and hazardous materials brought on site by a contractor must be stored indoors and labeled with the manufacturer's original label and remain closed, except when removing material from the container. The indoor area used for storage must be secure and not be located where a release could enter the environment, a sewer system or cause a hazard to other building activities. When using chemical compounds, especially odorous products, appropriate precautions should be followed as stated on container labels. In some cases, additional ventilation should be established prior to use. The Facilities Planning and Development Project Manager may require modification of existing ventilation systems or restrict work to specific days/times to minimize occupant chemical exposure.

Hazardous and regulated waste: ASU requires that materials or substances classified as hazardous or regulated waste is handled carefully and receive proper disposal: Examples include, but are not limited to: paints, thinners, glues, solvents, gas cylinders, cathode ray and television tubes, all electronic lamps, lamp ballasts, batteries, ACM, LBP debris, oils/fuels, Freon, glycols, corrosives, and CFCs.

Shipments of hazardous and regulated waste must be processed through EHS. Disposal costs for these materials will be charged back to the project. The University is only responsible for university- generated waste. Hazardous waste generated by the contractor will be the contractor's responsibility and will not be processed by the university.

Hazardous waste generated by contractors may not be stored on-site during construction and renovation projects, except ACM and LBP abatement projects. Storage related to these projects must be in a secured indoor area in containers or outdoors in a covered roll-off that are marked with the words hazardous waste and a description of the waste, and the date waste was first placed in the container. All containers must be in good condition and closed when waste is not being added to the container.

All electronic lamps are to be removed from fixtures with care and placed in special cartons provided by EHS. Since these lamps contain mercury it is important that they are not broken which could release toxic mercury dust and vapor into the environment. Coordinate the removal and disposal of these materials with EHS. All fluorescent lamp ballasts, both PCB (polychlorinated biphenyls) and non-PCB must be removed from fixtures and placed in pails or drums for disposal by EHS.

Batteries of any type may not be disposed of in trash containers. EHS collects these batteries for proper disposal or recycling. Batteries used by contractors are the contractor's responsibility and are to be removed from university premises when spent.

Asbestos removal from university buildings is considered regulated waste and is the responsibility of the asbestos abatement contractor to properly remove and dispose as required by their contract and applicable regulations. CPMG Services and EHS coordinate the assessment and removal of asbestos in existing structures.

Lead-based paint removed from structures or their components is considered hazardous waste and must be disposed of properly. Coordinate the disposal process, including manifesting and scheduling of any containers or roll-off dumpsters, with EHS and CPMG – ASU's controlled waste vendor requires at least 3 days advance notice to deliver a roll off container. EHS will assist in determining if paint or painted material contains lead and if it requires special handling or disposal as a hazardous waste.

Tritium gas-containing exit signs, when removed under renovation work, must be collected and disposed of properly. Contact EHS to evaluate and assist with this process.

Spills and Releases: Regulatory agencies require containment and remediation of all spills or releases of hazardous materials, including fuels, oils and anti-freeze. Contractors who spill, or detect a release, of a hazardous material on ASU property must report it immediately to EHS or the campus police. Clean-up costs resulting from a spill or release caused by a contractor are the contractor's responsibility. Depending on the substance and quantity, EHS may notify regulatory agencies. Cleanup and restoration of the contaminated area must be performed to regulatory and ASU acceptable levels. EHS will coordinate analytical testing to determine the extent of the contamination and the acceptable cleanup level. EHS, at its discretion, may elect to conduct the cleanup and charge associated costs to the project or allow the contractor to conduct the cleanup based on the material released and site conditions. If the contractor conducts the cleanup, proper documentation, including manifests, for the disposal of the hazardous material, contaminated soil, and any other materials contaminated during the spill or release must be provided to EHS.

Natural Resources Permitting and Compliance Issues: Natural resources or environmental permits such as those for sediment and erosion control, storm water management, forestation, or within 100-year/500-year floodplains, should be obtained prior to start of construction and should be reflected in the contract documents of the project. Natural resource permitting may take as long as one
(1) year and must be obtained prior to construction. It remains the
responsibility of ASU as the owner to ensure they are following. If a Facilities Development Management project manager or any responsible person connected with the project observes work that violates environmental regulations, or fails to follow the contract or applicable permit requirements, this should be brought to the attention of the contractor to correct. The deficiency should be noted in the project's log. If the contractor fails to comply in a timely fashion, the incident should be brought to the attention of the director of EHS for further action.

Fire Protection/Life Safety: The following fire protection and life safety requirements apply to all construction sites:

- Applicable Codes: All work must be performed in accordance with 2003 International Codes – International Fire Code, or IFC, International Building.
- At least one fire extinguisher must be provided in plain sight on each floor for each construction area.
- Automatic Sprinkler Systems: Existing sprinkler systems must remain in service whenever the building is occupied. A sprinkler contractor licensed in the State of Arizona shall perform all modifications and additions to an existing sprinkler system. All sprinkler system outages shall be scheduled through ASU University Services Facilities Management – Work Control number 480-965-3633. Once all sprinkler system work is completed, a pre and final acceptance test must be scheduled through University Services Facilities Management, ASU Fire Marshal, and the State Fire Marshal's Office. **Note:** stamped approved shop drawings must be on site at all times for any sprinkler work performed by a contractor.
- Corridors and exits: Corridors, stair enclosures and exits must remain clear at all times in occupied buildings. Storage is not permitted in corridors, stair enclosures and exits. Development Management project manager should contact EHS, 480-965-1823, to determine the need for drawings, plans, approvals and inspections. EHS will generally provide expedited assistance and have limited requirements for such projects;
EHS must be on site at all times. For small projects, the Facilities.
- Final Occupancy: Occupancy is not permitted until a final occupancy inspection is completed by EHS.
- Fire Alarm Systems: Existing fire alarm systems must remain in service whenever a building is occupied. Outages in existing fire alarm systems should be kept to a minimum. All fire alarm system outages shall be scheduled through ASU University Services Facilities Management (Work Control Center# 480-965-3633). Once all fire alarm system work is completed, a pre-acceptance test (100% test) must be scheduled through Facilities Management Electric Shop and then a final acceptance test (10% test) with ASU Fire Marshal (480-965-1823) and State Fire Marshal (602-364-1085).
- Flammable and Combustible Liquids Storage must be in accordance.
- Gas Cylinders must be properly stored. All compressed gas cylinders must be transported, used and stored properly. All cylinders, full or empty, must be secured in place at all times.
NFPA 30 (Flammable and Combustible Liquids Code) and 2003 IFC;
- Smoking is not permitted in the buildings at any time.
- Working Plans and Shop Drawings: A set of design drawings approved by code (IBC) and national recognized standards such as NFPA, or National Fire Prevention Association.

Small projects: Facilities Planning and Development routinely conducts "small projects" with the use of internal and contractor resources. Small projects involve **minor** activities such as the replacement or installation of carpeting, ceiling tiles, walls, dividers, cubicles, small equipment, etc. For such projects, Facilities Planning and Development Project Managers must:

- Adhere to all other applicable guidelines in this document based on the nature and scope of the project.
- Contact facilities management if the project impacts existing building utility systems.

- Determine the need for drawings, plans, approvals and inspections; as well as a pre-demolition hazardous material abatement survey.
- Ensure the project contract requires the contractor to comply with all applicable federal, state and local environmental and safety regulations and requirements.
- Obtain the necessary EHS awareness training to be familiar with the environmental and safety issues involved with the specific project they intend to manage.

Regulatory requirements and information

The EHS regulations that apply to construction and renovation activities on campus are numerous and constantly undergo modifications and additions by the regulatory agencies. Environmental permitting may take as long as one year (1) and must be obtained prior to construction. It is advised that the natural resource permitting manager and the environmental affairs unit be consulted during the project planning stage to determine applicable environmental permitting requirements, schedules and fees.

Note: for projects managed by FM, EHS reviews and comments on draft specifications and design drawings to identify applicable regulatory requirements and environmental permitting issues.

Several sources of regulatory information are available to Facilities Planning and Development Project Managers and Site Inspectors. These include:

- Several topics have specific “Fact Sheets” prepared by EHS that identify applicable regulatory citations and summarize key requirements. The “Fact Sheets” are typically 2 to 3 pages in length and are available from EHS.
- Federal OSHA's web site osha.gov/ also has summaries of individual EHS topics related to construction as well as online training.
- Arizona Department of Occupational Safety and Health, or ADOSH, also provides regulatory information and provides a listing of available seminars on its web page, which may be found at: ica.state.az.us.

Public and private partnership projects

ASU is increasingly developing projects through public/private partnerships which may require a Memoranda of Understanding, or MOU. The MOU establishes the contractual terms and conditions for the project and will place responsibility for EHS compliance on the private developer. Ultimately, the private developer's contractors and subcontractors will be responsible for the safety of their employees and compliance with OSHA requirements. EHS will support the project by providing fire marshal and occupational safety and health services. Therefore, they must approve project design drawings, conduct inspections and perform testing. The Fire Protection/Life Safety requirements previously described will apply to public/private partnerships. The developer and its contractors must also obtain required environmental permits and comply with applicable environmental regulations and permit requirements. In the

event an ASU employee observes an imminent danger as defined in Section II of this document, they should notify the EHS Director and the ASU General Counsel, or Legal office.

Regulatory agency inspections

Contractor sites are subject to inspection by safety and environmental regulatory agencies for compliance with applicable regulations and permit conditions. In all cases, the contractor should immediately inform the Facilities Planning and Development Project Manager if a regulatory agency conducts a site visit provide the results of the inspection, and the schedule of corrective actions the contractor will take to remedy deficiencies, as applicable. In the event of an environmental regulatory inspection, the Facilities Planning and Development project manager should notify EHS regarding the conduct of natural resource or environmental inspections – i.e., sediment and erosion control, forestation, floodplains, storm water discharges, regulated and hazardous waste, air quality, spill and releases – and the Associate Director of Occupational Safety and Health for safety related inspections, or AOSH or OSHA.

Construction sites are also subject to fire protection and life safety inspections by the EHS Fire Marshals. The fire marshal should notify the Facilities Development Management Manager of any significant deficiencies observed during inspections and testing. Public and private developments are subject to the terms of the MOU. The fire marshal will directly notify the developer and contractor of any deficiencies identified during inspection and testing activities. The contractor should immediately notify the EHS Environmental Affairs of any identified environmental deficiency that may impact the campus environment including air, water or soil; or the off-campus environment through air dispersion, surface or subsurface migration or campus utilities.

Permits

Information related to required permits and the process for obtaining them are described on the links listed below.

Building and Remodeling Permits and Inspections

asu.edu/aad/manuals/cpm/cpm309-01.html .

cfo.asu.edu/fdm-bldg-permit-requirements .

Appendix A

Asbestos Abatement Policy and Forms

Effective: 6/20/1986 **Revised:** 11/3/2021

CPM 301–05: Asbestos Abatement

Purpose

To reduce the potential for disturbance of and potential exposure to airborne asbestos fibers from asbestos containing materials in university buildings and to comply with applicable regulatory requirements

Sources

29 *Code of Federal Regulations* §§ 1910.134, -.1001, -.1200, and 1926.1101 40 *Code of Federal Regulations* §§ 61 Subpart M, 763 Subpart E

49 *Code of Federal Regulations* § 172

Applicability

Maintenance workers

Project managers

Contractors

Policy

ASU conducts asbestos abatement response actions necessary to protect the health and safety of building occupants, construction personnel, and the building environment when a remodeling, renovation, or demolition project occurs on campus. ASU employees or contractors may not disturb any suspect materials as defined in this policy located in any ASU owned or leased buildings, except as identified within the procedure section of this policy.

Except as provided in this policy, Capital Programs Management Group will inspect or otherwise assess building areas potentially affected by capital projects or maintenance activities to ascertain the presence of asbestos-containing materials prior to the start of any operations that will disturb building materials.

Definitions

Asbestos-Containing Material, or ACM
: Any material containing more than one percent asbestos.

Class III Asbestos Work
: Repair and maintenance operations, where ACM, including thermal system insulation, or TSI, surfacing ACM, and presumed asbestos-containing material, or PACM, is likely to be disturbed. Examples are installation of a single electrical outlet or electric switch where a new electrical panel or service is not required.

OSHA Class III Competent Person
: A person who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure; who has the authority to take prompt corrective measures to

eliminate them; and who is trained in a manner consistent with Environmental Protection Agency, or EPA, requirements for training of local education agency maintenance and custodial staff as set forth at 40 *CFR* 763.92 (a) (2).

Presumed Asbestos-Containing Material, or PACM
: Thermal system insulation and surfacing material found in buildings constructed no later than 1980.

Suspected Materials
: Building materials suspected of containing asbestos, including but not limited to: wall materials
, gypsum drywall and plaster, ceiling tiles, ceiling tile adhesives, floor tiles, floor tile adhesives, sheet
vinyl floorings, cove base adhesives, pipe insulation, duct seam tape, fireproofing, gaskets, caulking of all types, and ceramic tile grouts.

Thermal System Insulation, or TSI
: Hard packed piping insulation normally found wrapped in-place around plumbing and other piping.

Procedures

Search for buildings construction dates

Building construction dates are available by one of the following methods:

1. The building construction date will automatically appear as part of the building name when inserting the building name on either of the following online forms:
   o The ASU Capital Programs Management Request for Asbestos Services (accessible from the University Services Asbestos Management Program Web page) o Tempe campus TMA Service Request (accessible from the Facilities Service Center Web page)
2. The building construction date is available in the online Facility Lists, which may be sorted alphabetically, or by building number or campus and
3. The building construction date is included in the online Facilities Data Sheet for each building.

General facilities maintenance work—buildings built before 1985

At its option, CPMG will ensure that inspections occur as necessary to ascertain the presence of ACM prior to the start of any operations that will disturb building materials.

Typical building materials suspected of containing asbestos include but are not limited to: wall materials (gypsum drywall and plaster), ceiling tiles, ceiling tile adhesives, floor tiles, floor tile adhesives, sheet vinyl floorings, cove base adhesives, pipe insulation, duct seam tape, fireproofing, gaskets, concrete, caulking of all types, and ceramic tile.

ASU employees or contractors may not disturb any suspect materials that are located in these buildings without following the CPMG Asbestos Inspection Procedure, except for specific maintenance tasks identified and approved in writing as authorized OSHA Class III asbestos work.

OSHA Class III work is authorized under this procedure to include work-order-based repairs and maintenance operations for tasks approved by the ASU Environmental Health and Safety designated OSHA Class III competent person. Written authorization is required only for Glove Bag work as identified in OSHA Class III training provided by EHS.

The OSHA Class III competent person will conduct regular field inspections of OSHA Class III work and maintain this documentation.

OSHA Class III procedures will be maintained by the OSHA Class III competent person and will be available in each campus Facilities Management and Development Office.

Any contractor working under this procedure must provide copies of OSHA Class III work procedures and proof of training to the EHS designated OSHA Class III competent person.

Facilities Maintenance Work—Buildings Built Later than 1985

ASU maintenance workers and contractors may perform only limited work that disturbs building materials provided that:

1. the building has been built later than 1985
2. the total square footage of material to be disturbed does not exceed 160

   square feet of material or

3. in the instance of pipe insulation, the linear footage of pipe insulation to be disturbed does not exceed 260 linear feet of insulation.

The CPMG program manager is to be informed of all such activities prior to the commencement of the work. Notification must be sent to the CPMG program manager at least four hours prior to the start of work. This notification, which must include all of the following items, may be sent by email:

1. name of the building
2. location within the building where the work will occur
3. nature and reason for the work
4. time and date the work will occur
5. the building materials that will be disturbed and

6. an estimated quantity of material that will be disturbed. Any maintenance

   activity that potentially disturbs building materials in buildings within this

category that is not covered above must follow CPMG Asbestos Inspection Procedure.

CPMG Asbestos Inspection Procedure

The project manager for any construction/renovation/demolition projects where any suspected asbestos containing materials will be disturbed must follow this procedure:

1. Contact the CPMG Asbestos Management Group, or AMG, at AsbestosServices@asu.edu for asbestos services at the initial planning stage of a new project; no building material may be impacted without determining whether ACM is present.
2. Mark areas of impact on a current floor plan and submit to AMG, which arranges for an asbestos containing materials inspection and has the affected materials tested. AMG will estimate the time and expense needed to perform necessary abatement and submits this information to the project manager.
3. Conduct a site visit with the AMG for asbestos services.
4. Discuss and concur on the project scope and schedule for asbestos abatement with the CPMG program manager.

CPMG will coordinate and procure necessary asbestos consultants and asbestos abatement contractors to perform asbestos abatement.

The ASU Capital Programs Management Request for Asbestos Services online form is accessible from the University Services Asbestos Management Program Web page under "ASU Policy and Procedure." After completing the online form, select "Submit Request."

For routine asbestos abatement projects with vendor fees less than $35,000, a six-week average turnaround time is recommended. For asbestos abatement projects with individual vendor fees more than $35,000, a four-month average turnaround time is recommended to allow detailed planning and design.

Note: Although projects can often be completed in a shorter period of time, following these guidelines helps to ensure that a project is completed without complication or delay.

Permit-required renovations must undergo standard asbestos reviews as for the issuing of construction permits as described above.

Request for asbestos services

University services
Capital programs management group

To: *Greg Wnenta* *(480) 965-7505 / office* *(480) 965-7535 / fax* *(480) 229-0181 / cell phone*

Date of Request: _____ ***Requestor:*** _____

Department: _____

Phone No: _____

Request For: *(circle)*

REMOVAL REPAIR ENCAPSULATION TESTING EVALUATION

OTHER:

_____

Location of ACM

BUILDING: _____ (or) TUNNEL: _____

ROOM NO: _____ ENTRANCE: _____

SPECIFIC LOCATION: _____ STATION MARKER: _____

_____

_____

Condition of Material: *(circle)* Good Damaged Deteriorated

Type of Material

THERMAL SYSTEM INSULATION (TSI)

_____ L.F. of pipe
_____ L.F. of joint/elbow
_____ L.F. of valve
_____ L.F. of _____

SURFACING OR MISC. MATERIAL (check)

_____ Floor tile _____ Sheet flooring
_____ Wall _____ Duct tape
_____ Acoustic Ceiling _____ Ceiling tile

Qty. Surf/Misc.: _____

Line type: HW CHW STEAM COND

Painted green (circle): Yes No

Line active (circle): Yes No ……..Line pressure (circle): High Med Low

Line size: .Line Temperature:_____.....

CPMG USE ONLY

Project No.: _____ Date work scheduled/performed: _____

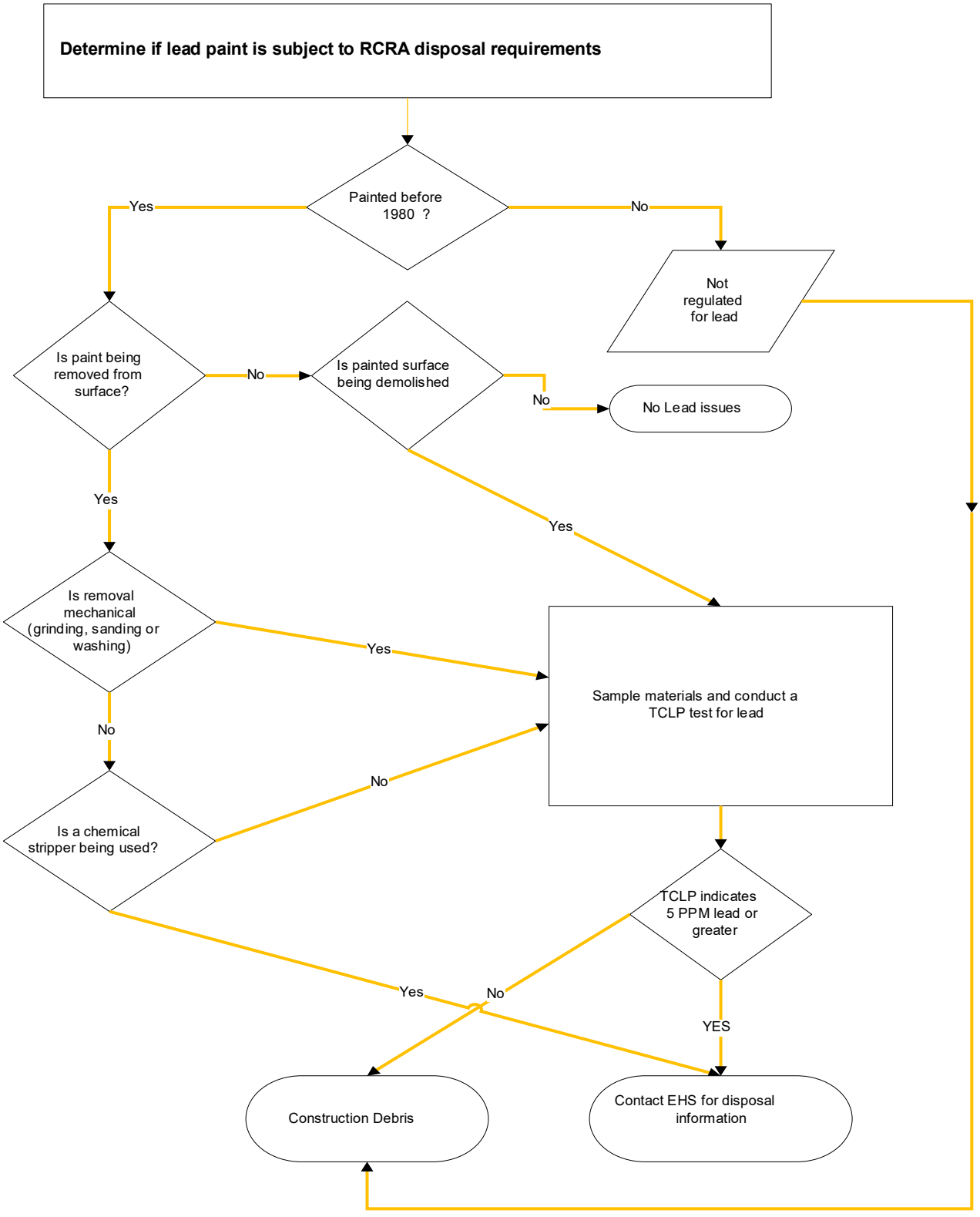
Contractor: _____ Consultant: _____

Comments: _____

Date by which work must be completed:

Appendix B Requirements

Lead Based Paint Abatement


Determine if lead paint is subject to RCRA disposal requirements
Painted before 1980 ?
Yes
No
Not regulated for lead
Is paint being removed from surface?
No
Is painted surface being demolished
No
No Lead issues
Yes
Yes
Is removal mechanical (grinding, sanding or washing)
Yes
Sample materials and conduct a TCLP test for lead
No
Is a chemical stripper being used?
No
TCLP indicates 5 PPM lead or greater
Yes
No
YES
Construction Debris
Contact EHS for disposal information

Appendix C
AED Procurement and Placement

Requirements

History of Implementation at Arizona State University

In May of 1999, Governor Hull signed HB 2475 (Chapter 217 - 441R - S Ver of HB2475), which extended immunity from civil liability to certain AED users. SB 1070 requires that the Joint Legislative Budget Committee and the Governor's Office of Strategic Planning and Budgeting should include funding for the placement of automated external defibrillators in capital budgets for new state buildings each fiscal year. The provisions in the act became effective after June 30, 2003.

Program Management, Plans Review, Installation and Placement

The Arizona State University Environmental Health and Safety Department Fire Safety Division will perform plans review of construction and renovation projects to determine AED necessity and location as well as the necessity and location for non-construction and renovation. The Fire Safety Division will coordinate the installation and placement of all AED on all ASU campus locations.

The appropriate project manager for either an initial construction project or a renovation project is responsible to coordinate the installation of the AED with the ASU Fire Marshal’s Office. Specific guidelines shall be met by Facilities to ensure a seamless transition from purchasing of the equipment to the placement of the AED.

Purchasing

Project managers are responsible for the coordination of purchasing the AED, AED soft case, AED cabinet and AED pads and mask thru the project budget. The purchasing of the AED and related items will be coordinated through the Environmental Health and Safety Department Arizona State University:

1551 S. Rural Tempe, AZ 85281
480-965-6983 AED
Program Manager Main
Office 480-965-1823.

Installation and Placement

The ASU EHS Fire Safety Division will coordinate the installation and placement of all AEDs on all ASU campus locations.

The appropriate project manager for either an initial construction project or a renovation project is responsible to coordinate the installation of the AED with the ASU Fire Marshal's Office. Specific guidelines shall be met by facilities to ensure a seamless transition from purchasing of the equipment to the placement of the AED.

Installation Requirements

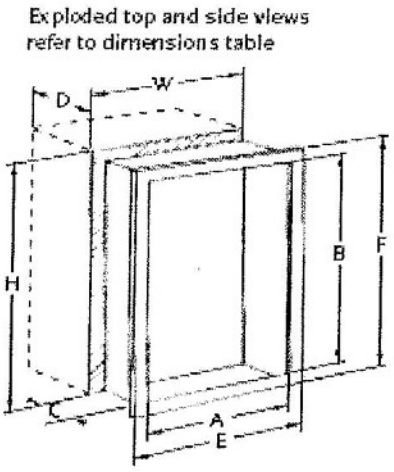
Project managers are responsible to ensure that the ASU Fire Marshal's office coordinates the proper placement of the AED cabinets to meet the requirements of all applicable building and fire safety codes. The designated Plan Review Official for the ASU Fire Marshal's office will have to approve the placement location of the AED and AED cabinets.

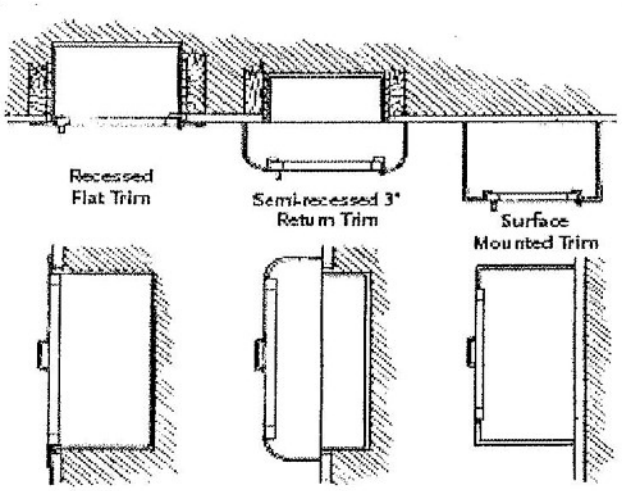
Installation

The placement of the cabinet will have to be in accordance to the manufacture's recommendations.

ADA Requirements

ADA, or Americans with Disabilities Act, guidelines specify reach ranges for buildings occupants who require access to equipment such as fire extinguishers and other fire and life safety devices. For an unobstructed approach, the maximum forward reach to this equipment (the AED) is 48 inches above the floor. The maximum side reach for such an approach is 54 inches the actual mounting heights for cabinets housing the equipment can be determined by reviewing the exact dimensions of the specific cabinet and the positioning of the fire or life safety equipment within that cabinet. Please note that these ADAAG reach requirements fall within the NFPA, or National Fire Protection Association, guidelines. The NFPA guidelines state that the distance from the floor to the top of the fire extinguisher –life safety device– to be no more than 5 feet.





Model		TUB I.D.			Frame O.D.		Wall Opening		
Steel	Trim style	A	B	C	E	F	W	H	D
3012604-00	Flat trim	14”	14”	6”	17 ¾"	17 ¾"	14 ½”	14 ½”	6”
3012604-01	3*	14”	14”	6”	17 ¾"	17 ¾"	14 ½”	14 ½”	3 ½”
3012604-02	Surf. Mtd.	17 ¾”	17 ¾"	6”	17 ¾"	17 ¾"	-	-	-

The Americans with Disabilities Act (A.D.A.) of 1990 mandates that cabinets or other accessories not extend into corridor areas more than 4". If this applies to an existing building, model 3012604-000 or 3012604-001 must be used.

Appendix D
Hazardous Wastes, Oil Storage and Air

Quality Issues

New Fuel Burning equipment
Maricopa County Air Permit, Spill Prevention Controls and Countermeasures Plan, or SPCC.

- Advise EHS of the intent to install and a description of the unit.
- Copy of Spec sheets to EHS as soon as available.
- Notify EHS when installed and expected first day of startup.
- Notify Facilities Management of new generators so they can schedule monthly preventive maintenance.
- Unit serial number, date of manufacture, and expected date of installation to EHS as soon as scheduled.

Oil Containing Equipment
Spill Prevention Controls and Countermeasures Plan, or SPCC.

- Applies to any transformer, elevator, compactor, storage tank or other stationary equipment containing any type of oil.
- Notify EHS after the installation of any oil containing equipment having a capacity of 55-gallons or greater.
- Supply EHS with a location, description of the equipment, type of oil, total oil capacity, manufacturer and unit serial number.

Light bulbs and ballast

- All ballast is treated as containing PCBs. ll bulbs are treated as containing mercury.
- Broken bulbs are considered hazardous waste and must be properly labeled and contained for pickup by EHS.
- Environmental
Protection Agency, or EPA,
EHS collect, all light bulbs
and all ballast.

EHS will:

- Deliver the containers to the job site.
- Pick up the containers when requested.
- Supply 55-gallon steel drums for light ballast.
- Supply containers for 4’ and 8’ fluorescent tubes or you can use the original bulb boxes.

Please be reasonable with your bulb and ballast drum request. Fiber drums can hold 150300 4-foot tubes; steel drums can hold 500 pounds of ballast.

Mercury containing thermostats

Environmental Protection Agency, or EPA.

All mercury thermostats are considered hazardous waste and must be properly contained and labeled for pickup by EHS.

Appendix E
Contractor Safety Programs

Service provider acknowledgement

Arizona State University is committed to protecting the health and welfare of students, faculty, staff, visitors, and to the environment. Accordingly, it is important that all members of the ASU community recognize and share this commitment and comply with the environmental, health and safety policies, rules, procedures and regulations governing ASU campus activities.

ASU is also looking to the community, including service providers, for cooperative and responsible leadership that will help the University implement a safer environment through safer practices and more sustainable solutions.

Towards this end, it is ASU's expectation that all service providers have the responsibility for environmental, health, and safety issues created or otherwise arising from or related to their work under their contract with ASU.

The service provider shall ensure that its employees are properly identified, e.g., officially issued picture ID and or badge, and have been instructed about the boundaries of their work areas. Service providers will comply with all applicable local, state, and federal rules and regulations, including those related to the Occupational Safety and Health Act of 1970.

For all service providers, ASU is providing a few general guidelines in this document concerning conducting work on ASU Job Sites.

Service provider - refers to any individual, company, or corporation who is hired by ASU or an ASU employee to provide construction, repair or maintenance related services on ASU property or facilities.

General site information
Failure on the part of the service provider to comply with the following requirements may result in termination of the contract with ASU. Prior to working in areas where site-related hazards might be present, all service providers shall consult with the Project Manager for more information:

- Permission must be obtained from the Project Manager whenever it is necessary for personnel to go to the roof of any building.
- Lunch and break areas are to be coordinated through the Project Manager.
- Pedestrians should use walkways where provided. Shortcuts shall not be taken through operating areas.
- Explosives of any type are prohibited on the site with the **exception of Powder Actuated Tools.**

- Barricading of ASU streets – contacting ASU Police at 480-965-3456 is required prior to any barricades being set.

PARKING - Park in specified areas only. The proper parking permit must be secured from ASU Parking and Transit Systems, or PTS, and displayed appropriately in vehicles. Contact the Project Manager and/or at PTS at 480-965-6124. Do not block entrance ramps, trash docks, and truck doors, etc. Web View of Service Provider Job-Site Safety Information.

Disclosure of asbestos, lead and other hazardous materials

Arizona State University is informing all service providers of the potential presence of asbestos, lead and or other hazardous materials at ASU. Depending on the location(s) of your work, there may be one or more of these materials present. It is your responsibility to discuss the full scope of your work with the CPMG Project Manager or designee so that you have the appropriate information related to asbestos, lead and/or other potentially hazardous materials. If the scope of your work changes, contact your CPMG Project Manager or designee before proceeding to determine if the change in scope may involve the potential disturbance of asbestos, lead and/or other hazardous materials.

Should there be changes to your scope of work affecting areas outside of your original contract area, or if unforeseen or unidentified suspect materials are uncovered or discovered during your work, you are required to stop all work which would impact those materials until they can be evaluated and tested by ASU. Immediately upon discovery of any unidentified or unforeseen building material, you must notify the CPMG Project Manager to arrange for ASU to evaluate and test the materials.

Prior to your work taking place, inspections for asbestos, lead and other potentially hazardous materials must be (or have been) conducted by ASU, and identified materials (containing asbestos, lead or other hazardous materials) that would be disturbed by your current scope of work will be (or have been) removed or isolated in such a manner as to prevent potential exposure. Please contact ASU CPMG Asbestos Program Manager at 480-965-7739 to determine if, based on your current scope of work, there are any remaining materials which are or may be present in adjacent location(s), but should not be disturbed.

Your signature on this document acknowledges you received this disclosure and that you had the opportunity to review your scope of work with the CPMG Project Manager or designee.

The Orientation document Service Provider Job-Site Safety Information is meant to serve as a guide for the contractor/vendor, any and all of its supervisors, and any and all of its subcontractors during their performance within the scope of work under their contract with ASU. Although the document sets forth certain guidelines and rules of operations on ASU sites, it is not intended to address every potential safety and health issue that may arise during the scope of the contracted work. **It does not cover every possible situation**. While ASU retains the right to periodically review the work of any service provider, its supervisors, or its subcontractors, ASU does not assume responsibility for any issues identified outside of contract compliance.

Tempe campus utility tunnel system

Asbestos exists in the underground utility tunnel system located on the Tempe Campus of Arizona State University. It is your responsibility to discuss the scope of your work with the

CPMG Project Manager or designee in order to provide you with any further information related to asbestos issues which may be encountered during any work in the tunnels.

The gravel or earthen flooring material throughout the tunnel system has become contaminated with asbestos containing material from historical damage and repair to pipe insulation. Walking on or other disturbance to, the flooring material may cause entrained asbestos fibers to become airborne.

In addition, asbestos is present in most thermal system insulation applied to steam, steam condensate, and hot water piping. The disturbance of insulation materials is strictly prohibited.

ASU has determined that persons working in the underground utility tunnel system may be potentially exposed to airborne asbestos fibers at or above the U.S. Occupational Safety and Health Administration, or OSHA, permissible exposure limit of 0.1 fibers per cubic centimeter (f/cc).

Vendors are advised that airborne fibers which exist in the tunnel areas may be below the minimum length of five microns capable of being detected by analysis using Phase Contrast Microscopy, or PCM, analytical techniques. Airborne fibers within the tunnels are detectable using Transmission Electron Microscopy, or TEM, methods. Each service provider is responsible for ensuring proper use of personal protective equipment including respiratory protection at all times while working in the Tempe tunnel system.

It is your responsibility to discuss the scope of work conducted within the tunnel system with your employees, or sub-contracted employees, and to provide the appropriate training, personal protective equipment and air monitoring as required by OSHA.

Accordingly, ASU expects each service provider to supplement the provisions contained in the Service Provider Job-Site Information and Guideline document with proper instructions and work practices that, based on knowledge and experience, will help decrease the likelihood of injury to service provider employees, subcontractors' employees, and to others, as well and prevent damage to property and material on ASU sites.

Service Provider Name: _____

Street Address: _____

City, Sate Zip: _____

The above service provider certifies that they, any and all of its subcontractor's, or its supervisors, prior to commencing any work on an ASU site, have reviewed and understand the contents of the Service Provider Job-Site Information and Guidelines document and have attended the Service Provider Job-Site Information and Guidelines orientation program produced by ASU Department of Environmental Health and Safety. By having their representative sign and date this document prior to commencing any work, the service provider accepts, and agrees to the provisions of these Acknowledgement Clauses. The service provider is required to provide the original of this signed document to EHS and a copy to CPMG.

[Name] _____

[Title] _____

Employer Representative Signature _____ Date: _____

Appendix F

Indoor Air Quality

Poor indoor air quality is more likely to be present during construction and renovation activities. Dust and odors migrating out of the work area and into occupied spaces can disrupt normal building operations, degrade the facility, and, under worst case scenarios, cause injury or illness to occupants. The mere presence of detectable dust or odors from a project, even at levels that are typically considered to be harmless, may trigger occupant concerns based on perceived hazards. When performing or coordinating construction or remodeling activities, be aware of what activities will impact occupant indoor air quality and follow these common-sense guidelines to minimize indoor air quality complaints.

Initial planning

When possible conduct work activities during evening time when buildings are not occupied.

Identify potential work-related airborne contaminants – i.e., dusts, fibers, odors, or hazardous volatile substances such as volatile organic compounds, or VOCs, combustion products, and biological material. These contaminants may be produced from disturbance of building materials or demolition e.g., drywall, plaster, ceiling panels, flooring, from products used in the construction process e.g., paints, adhesives, carpeting, cleaning agents, from equipment used in construction process, e.g., generators, compressors, welders, motor vehicles, heavy equipment, and when building systems are disrupted – e.g., natural gas, water, sewer, ventilation.

Identify how contaminants may spread through the building. Contaminants move from high pressure areas to low pressure areas via conduits, such as HVAC returns, HVAC system intakes, open doors, utility chases, wall penetrations, elevator shafts, etc.

Identify how building occupants may be affected by the spread of contaminants.

Identify available control options, such as containing the work area with sheets of polyethylene plastic, modifying HVAC operation, reducing emissions, intensifying housekeeping, rescheduling work hours, moving occupants, defining re-occupancy criteria, etc.

Design specific control measures into the project to keep dusts, odors and hazardous volatile substances out of occupied areas, consult SMACNA guidelines for details.

Isolate major construction areas

Construction areas in occupied buildings must be isolated from adjacent no construction areas using temporary walls, plastic sheeting, or other vapor retarding barriers.

Construction areas must be maintained at a negative air pressure to surrounding non-construction areas.

Recirculating air ducts must be temporarily capped and sealed – appropriate filters may be used if nuisance particulates are the only contaminant of concern.

Protect the ventilation system from dust and moisture

Do not operate supply air systems without filters in place.

Building materials subject to degradation from ambient environmental exposure must be protected or replaced if damaged.

Duct-work and air handling equipment must be stored in a clean, dry location prior to installation and openings must be securely covered to prevent entry of dust, moisture, general construction debris/dirt and vermin.

Utilize the air handling units, or AHUs, to “flush” the building to reduce off-gassing of interior furnishings and finishes at least 48 hours prior to occupancy. Fully open outside air intakes and fit AHUs with temporary filters during this period. Replace filters after system flushing.

Notify occupants

Prior to the commencement of work, notify potentially affected building occupants (through the construction project manager and building monitor) with a brief description of the planned work, expected dates and times, and precautions taken to protect air quality. Advanced notice of construction or renovation should be given so employees may take necessary actions in anticipation of the work.

Ongoing management

After work has begun, monitor and enforce plan specifications for keeping dusts, odors, and hazardous volatile substances out of occupied areas.

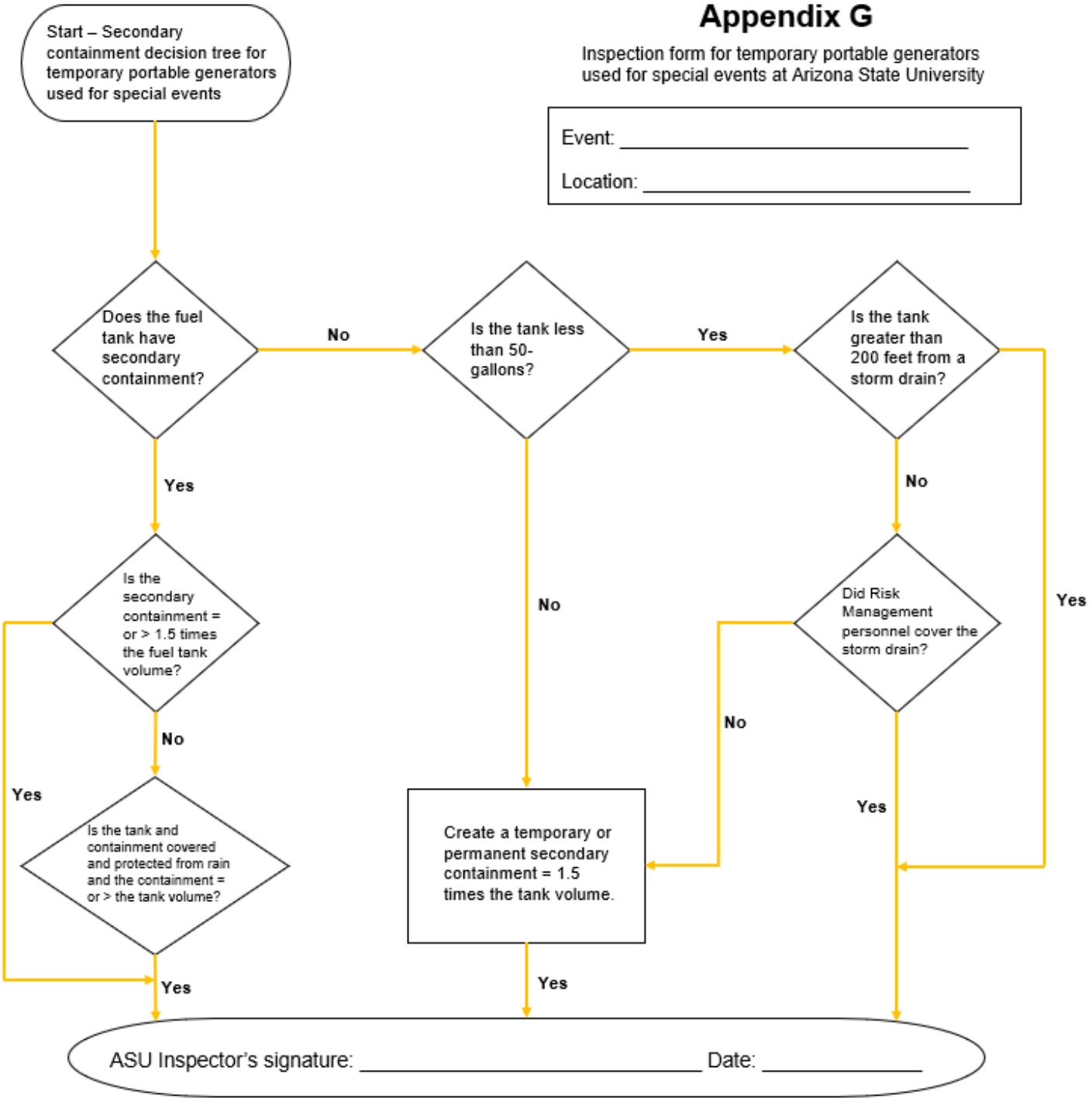
Provide periodic progressive updates to building occupants through the construction project manager and building monitor.

Appendix G

Inspection form for temporary portable generators used for special events at Arizona State University

Event: _____

Location: _____



Note: A map of the area showing the general location of storm water flow and the storm drains is available at Facilities Management's Planning Department at 480-965-1819

References

SMACNA IAQ:

Guidelines for Occupied Buildings under Construction, Sheet Metal and Air Conditioning Contractors' National Association, Inc., 1995.

ANSI/ASHRAE Standard 62-1989/62-1999, Ventilation for Acceptable Indoor Air Quality, The American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc.

Questions? Contact ASU Environmental Health and Safety at 480-965-1823 or email asuehs@asu.edu.

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