CHAPTER 11.9 REGULATED AREAS, SITE PREPARATION, AND NEGATIVE PRESSURE ENCLOSURES

11.9.1. What this chapter covers

This chapter outlines the asbestos work requirements for Regulated Areas, site preparation, and negative pressure enclosures. Organizations and contractors performing these tasks for asbestos work shall follow industry accepted practices and procedures, and comply with applicable OSHA and EPA regulations.

11.9.2. Regulated areas

11.9.2.1 Asbestos workers shall conduct all Class I, Class II, Class III, and Class IV emergency response asbestos-related work at JSC within a Regulated Area. The methods and systems for establishing a Regulated Area are described in paragraph 11.9.3 below.

11.9.2.2 The OSHA definition (29 CFR 1926.1101) of a Regulated Area is:

An area established to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.

11.9.2.3 Asbestos workers shall follow these requirements:

a. Demarcation. Mark the Regulated Area in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, demarcate the Regulated Area with the barriers or enclosures. Provide signs and display as required by Chapter 11.10.
b. Access. Limit access to Regulated Areas to people who are authorized and trained to perform asbestos work and who are wearing protective clothing, respiratory protection, and other PPE. Establish a list of authorized personnel before starting a job and post that list in the unrestricted clean area of the job site. The job site superintendent or on-site Competent Person has control of site access.
c. Respirators. Supply appropriate respiratory protection to all persons entering an asbestos Regulated Area where employees are required to wear respirators as required in chapter 11.5, paragraph 11.5.4.
d. Prohibited activities. People inside an asbestos Regulated Area shall never eat, drink, smoke, chew tobacco or gum, or apply cosmetics.

11.9.3. Methods and systems used to establish a regulated area

11.9.3.1 Asbestos workers shall use at least one of the methods or systems described below to prevent visible emissions from the worksite and to prevent the escape of airborne asbestos fibers into the general environment from any Regulated Area used for asbestos-related activities specified in Part 11. Any method used shall meet the engineering control requirements of 29 CFR 1926.1101(g). Submit a work plan for any task requiring a large-scale enclosure to the Environmental Management Office and Occupational Health per the notification requirements of

Part 11. The methods and systems for Part 11 and the job performance requirements are as follows:

a. Barrier with floor covering. Use barriers with no enclosure if there is little risk of spreading asbestos into the general area or if there is minimal risk to individuals who may pass into the work area unknowingly. Barriers are used when the primary concern is to keep building occupants or other employees from inadvertently getting into the work area where there might be a localized risk of asbestos exposure. The Regulated Area shall be visibly identified using any marker (i.e., signs and tapes or barricades) that warns employees or visitors to stay out of the work area. These barrier systems are used with polyethylene floor coverings to prevent localized contamination.
b. Glovebag. Use glovebags when the work is small enough to be completed in the bag. These are usually restricted for use on pipes, joints, and valves, but may be used for spot abatement of small amounts of spray-applied asbestos insulation. *NEVER PERFORM GLOVEBAG REMOVAL ON HOT PIPES!* This may cause the bag or gloves to melt over the workers' hands and arms. Devise special procedures if glovebags are used on hot pipes.
c. Small enclosure, mini-enclosure, or "pop-up" enclosure (e.g., "Klean Kube®"). Use small enclosures when the work area is larger than can be accommodated by a glovebag or is needed to provide more protection than a barrier system. The small enclosure is generally limited in size and used for small-scale, short-duration activities. A small enclosure may not involve the use of negative pressure systems, but will have an entrance chamber or multiple entry flaps. Small enclosures rely on HEPA-filtered vacuums and wet methods to control fiber concentrations. You may use small enclosures for any repair or maintenance activity that may disturb ACM and release airborne asbestos fibers.
d. Large enclosure. Use large enclosures for asbestos-related projects that a small enclosure cannot accommodate. Large enclosures will usually include the use of a negative-pressure air filtration system to isolate the work area from the general building area that is not involved in the asbestos-related activity. The large enclosure may involve the use of ancillary contamination controls (e.g., showers, change or clean rooms, waste load out chambers, decontamination rooms, contaminated equipment rooms, etc.). Large enclosures for Class I and Class II asbestos work shall pass inspection by Occupational Health before the asbestos-related activities start.
e. Critical barrier per 29 CFR 1926.1101. A critical barrier consists of "one or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area." Critical barriers are most often used on doorways, windows, and ventilation system openings. They are required for Class I and II asbestos work, but may also be used on Class III work.
f. Table 11.9-1 below indicates the Regulated Area methods and systems that are appropriate for each class of asbestos work. Please note that containment for an emergency response could involve any of the four methods and depends upon the judgment of the responders. Essentially, an emergency response to a major fiber release episode could involve procedures meeting the requirement of Class I or Class II asbestos abatement or removal.

Table 11.9-1. Regulated Area Methods or Systems Used with Asbestos Work Classes

	Asbestos Class			
Methods or Systems	I	II	III	IV*
Barrier and floor covering			X	X
Glovebag			X	X
Small enclosure	X	X	X	X
Large enclosure	X	X	X	X
Critical barriers	X	X		X**

*

* Only required for asbestos Class IV emergency response.

** Only used for a major fiber release

11.9.4. Site preparation

11.9.4.1 Before any asbestos-related activity, prepare the worksite for follow-on actions. Asbestos workers shall take the following steps to define the Regulated Area and limit contamination of furniture and equipment.

a. Post warning signs and barriers. Place warning signs and temporary barriers, if an enclosure is not required, at all entrances and approaches to the Regulated Area. Warning signs shall meet the requirements specified in Chapter 11.10.
b. Clean and remove furnishings and equipment. Remove all non-stationary items that can feasibly be taken from the work area to prevent damage or contamination of the items.
   (1) Before storing these items outside the work area, clean them of visible debris with a HEPA-filtered vacuum or wet wipe to remove any asbestos-containing dust.
   (2) Thoroughly pre-clean the designated work area before beginning containment construction. If carpets in the work area remain, vacuum them with a HEPA-filtered vacuum and cover them with 6-mil polyethylene sheeting. You may use plywood between the layers of polyethylene to help protect the carpets from damage and maintain the containment integrity.
c. Seal stationary items as follows:
   (1) Completely cover the items with a minimum of one layer of 6-mil polyethylene if it is not feasible to remove them from the work area. For Class I and Class II activities, seal these covers and secure them with duct tape.
   (2) Make special provisions to prevent creating a fire hazard for stationary equipment, such as electrical transformers, refrigeration equipment, or other electrical heat-generating equipment that must continue to operate during the asbestos-related activity. Such items need a constant ambient airflow or they may overheat. In these situations, you shall provide a separate framework to support the polyethylene sheeting, with provision for separate air intake and exhaust outside the defined work area.

11.9.5. Negative Pressure Enclosures

11.9.5.1 Asbestos workers shall follow these requirements for any negative pressure enclosure (NPE) used with OSHA Class I and Class II asbestos abatements projects:

a. Use machine(s) that provide at least 4 air changes per hour and maintain a pressure differential of at least -0.02 column inches of water inside the NPE relative to outside pressure. (Ref OSHA 29 CFR 1926.1101(g)(5)(i)(A))
b. Keep the NPE under negative pressure throughout its period of use. (Ref OSHA 29 CFR 1926.1101(g)(5)(i)(A))
c. Record pressure measurements for the NPE throughout its entire period of use. You may record the pressures by either a strip-chart recorder on the manometer or by an employee writing down the pressure readings on a log sheet at hourly intervals.
d. Have an employee immediately available for the entire period of use to take action to restore negative pressure in case the machine maintaining the NPE fails.
e. Run the machine maintaining the NPE continuously until passing a clearance inspection and, as applicable, passing clearance air sampling.