



ASBESTOS MANAGEMENT PROGRAM

RISK MANAGEMENT AND SAFETY
2020

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1.0 INTRODUCTION

1.1 Policy

It is the policy of the University of Nevada Las Vegas (UNLV) to provide a safe, healthy learning, living, research and working environment. The requirements in this program are to provide individuals and contractors with pertinent information regarding asbestos safety. It is also the intent of UNLV to meet all Federal, State and Local regulations and to employ best management practices with regard to asbestos containing materials (ACM) to minimize unintentional disturbance.

1.2 Purpose

It is the purpose of this program to minimize the unintentional disturbance of asbestos containing materials at UNLV campuses and leased facilities to reduce exposure to students, staff, contractors, and members of the public.

1.3 Scope and Application

This program applies to all UNLV faculty, staff and contractors, especially personnel who are responsible for the demolition, maintenance, renovation and repair of existing buildings and materials. This will be accomplished by implementing this Asbestos Management Program (AMP) which includes proper work practices in order to maintain ACM in good condition, to ensure proper clean-up of asbestos spills, prevent further release of asbestos fibers and assess the condition of ACM. Intact and undisturbed ACM does not pose a health risk.

Personnel responsible for renovation and maintenance projects which disturb or remove building materials must review the Asbestos Management Program prior to performing these activities. All materials except, glass, metal, plastic or wood are assumed to contain asbestos.

All asbestos maintenance and abatement work must be performed by contractors and/or employees who maintain current State of Nevada Department of Business and Industry Industrial Relations Occupational Safety and Health Administration Asbestos Control Program licensing.

2.0 EMERGENCY CONTACT INFORMATION

For questions or concerns or to report an asbestos disturbance that may lead to an asbestos spill or unintentional disturbances contact the following:

During Normal Business Hours (8:00 a.m. – 5:00p.m.)

Risk Management and Safety (702) 895-4226

After Hours

Facilities Management Services (702) 895-4357

Police Services Dispatch (702) 895-3668

2.1 Asbestos Emergencies

Asbestos related emergencies develop due to incidental and accidental contact with ACM. This causes a disruption in the matrix of asbestos containing building materials. Minor and major releases of asbestos fibers can also occur from water damage, building or equipment vibration and air erosion.

A release of asbestos fibers is defined as the dislodging of materials containing asbestos.

Immediate actions that must be employed to reduce exposure to asbestos are as follows:

1. Stop work immediately and leave the area.
2. Secure access to the area and post signage at the entry to the affected areas.
3. Notify an immediate supervisor.
4. Contact the Risk Management and Safety Department (during normal business hours) ext. 54266, Facilities Management Services (after hours) ext. 54357 or Public Safety ext. 53668.

Only asbestos qualified personnel will use the proper methods and equipment to clean up an asbestos spill, refer to section 7.0 Asbestos Abatement.

Areas affected by minor and major fiber release episodes are not safe to re-enter until area air sampling results have determined the air within the affected area is below the occupational exposure limit of 0.01 f/cc as determined by Polarized Light Microscopy (PLM) laboratory analysis and authorization is given by the Risk Management and Safety Department.

3.0 REFERENCES AND REGULATIONS

3.1 References

American National Standards Institute (ANSI)

ANSI Z88.2 (1992) Respiratory Protection

ANSI Z9.2 (2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM International (ASTM)

ASTM D 1331 (1989; R 2001) Surface and Interfacial Tension of Solutions of Surface-Active Agents

National Institute for Occupational Safety and Health (NIOSH)

NIOSH No. 2005-149 (2007) Pocket Guide to Chemical Hazards Publication

Underwriters Laboratories (UL)

UL 586 (1996: Rev 2004) High-Efficiency, Particulate, Air Filter Units

3.2 Regulations

Nevada Administrative Code (NAC)
NAC 618 Abatement of Asbestos
NAC 444 Disposal of Asbestos

Nevada Revised Statutes (NRS)
NRS 618 Control of Asbestos

Occupational Safety and Health Administration (OSHA)
29 CFR 1910.134 Respiratory Protection
29 CFR 1910.1001 General Industry
29 CFR 1926.59 Hazard Communication
29 CFR 1926.200 Accident Prevention Signs and Tags

Environmental Protection Agency (EPA)
40 CFR 61 SUBPART A - General Provisions
40 CFR 61 SUBPART M - National Emission Standard for Hazardous Air
Pollutants (NESHAP)
40 CFR 763 Asbestos

4.0 DEFINITIONS

Abatement - means any act which is intended to reduce, eliminate or encapsulate asbestos or materials containing asbestos.

Abatement Worker - means any person who is licensed by the Enforcement Section in a nonsupervisory capacity, to clean, handle, repair, remove, encapsulate, enclose, haul, dispose of or otherwise work with materials containing asbestos.

Abatement Supervisor - means any abatement worker who is licensed by the Enforcement Section to be a contractor's competent person.

Asbestos - The term asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered.

Asbestos Containing Material (ACM) - Materials are considered to contain asbestos if the asbestos content of the material is determined to be more than one percent.

Asbestos Permissible Exposure Limit - 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.110

Building/facility owner - is the legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.

Category I Non-Friable ACM - asbestos containing packing, gaskets, resilient floor coverings and asphalt roofing products.

Category II Non-Friable ACM - non-friable asbestos containing products that are not Category I materials, such as asbestos cement products.

Certified Industrial Hygienist (CIH) - means one certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Class I - asbestos work activities involving the removal of TSI, surfacing ACM and PACM.

Class II - asbestos work activities involving removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III - asbestos work activities involving repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.

Class IV - asbestos maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Contractor - The Contractor is that individual, or entity under contract to UNLV to perform listed work.

Competent Person - A person meeting the requirements for competent person as specified in 29 CFR 1926.1101. The competent person shall be a supervisor licensed by the Enforcement Section in accordance with NAC 618.

Demolition - the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Disturbance - means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Emergency Asbestos Project - any activity for the abatement of asbestos requiring immediate action for safety or the protection of the public health, which is not planned

but results from a sudden, unexpected event. The term includes projects required because of non-routine failures of equipment.

Employee Exposure - exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Encapsulation - The abatement of an asbestos hazard through the appropriate use of chemical encapsulant.

Encapsulant - Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulant as follows which must comply with performance requirements as specified herein:

- A. Removal Encapsulant - can be used as a wetting agent
- B. Bridging Encapsulant - used to provide a tough, durable surface coating to asbestos containing material
- C. Penetrating Encapsulant - used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage
- D. Lock-Down Encapsulant - used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed

Friable Asbestos Containing Material - a substance containing asbestos which can be crumbled, pulverized or reduced to powder by hand pressure.

HEPA Filter Equipment - High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

Homogeneous Area - an area of surfacing material or thermal system insulation that is uniform in color and texture.

Intact - ACM that has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

License - an authorization issued by the Enforcement Section to engage in a project for the control of asbestos in a specific occupation.

Licensed Consultant - any person who is licensed by the Enforcement Section to be directly involved with providing consultant services regarding the control of asbestos and who is accredited as:

1. An Inspector;
2. A Management Planner;
3. A Project Designer; or
4. A Monitor;
5. Any combination thereof

Maintenance Activity - any act intended to preserve or sustain the integrity of a structure, material or apparatus (also see Class III definition).

Miscellaneous Materials - building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation

Negative Exposure Assessment - a demonstration by the employer, which complies with the criteria in 29 CFR 1926.1101 (f)(2)(iii), which states that an employee's exposure during an operation is expected to be consistently below the PELs.

Non-friable Asbestos Material - a substance containing asbestos which cannot be crumbled, pulverized or reduced to powder by hand pressure.

Owner - The University, hereinafter referred to as the Owner or UNLV, or the authorized representative of the Owner, or the consultant. *PACM* - presumed asbestos containing material

Permissible Exposure Limits (PEL):

A. Excursion Limit - an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes, as determined by the method prescribed in 1926.1101 Appendix A, or by an equivalent method.

B. Time-Weighted Average (TWA) - an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA), as determined by the method prescribed in 1926.1101 Appendix A, or by an equivalent method.

Regulated Asbestos-Containing Material (RACM) – means:

- A. Friable asbestos material (e.g. fireproofing, thermal system insulation on steam/hot water pipes, acoustical insulation such as popcorn ceiling texture)
- B. Category I nonfriable ACM that has become friable (e.g. asphalt roofing products such as shingles, packings, gaskets, linoleum, vinyl asbestos tile)
- C. Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading (e.g. roofing materials, packings, vinyl asbestos tile, linoleum)
- D. Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or the regulated renovation operations (cement siding, transite shingles/pipes)

Regulated area - an area established by the employer to demarcate where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limits.

Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load supporting structural members are wrecked or taken out are demolitions.

Surfacing Material - material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Suspect Material - any building materials which, are not listed in Section 1.3 and has not been proven to contain asbestos through laboratory analysis.

Thermal System Insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain or water condensation.

5.0 RESPONSIBILITY

5.1 Risk Management and Safety

- 5.1.1 The Director of Risk Management and Safety shall designate, in writing, a Competent Person qualified to perform the functions associated with the Asbestos Program Manager.
- 5.1.2 Maintain, review, and revise the Asbestos Management Plan, as necessary, to ensure compliance with all federal, state, and local regulations.
- 5.1.3 Notify appropriate regulatory agencies (State of Nevada Department of Business and Industry Industrial Relations Division Enforcement Section, Clark County Air Quality Environmental Management District) prior to abatement activities, when required.
- 5.1.4 Maintain records of all friable building material assessments, asbestos building inspections and surveys, negative exposure assessments, air monitoring, training, and abatement activities.
- 5.1.5 Provide technical information for maintenance, renovation, and demolition project implementation.
- 5.1.6 Notify building occupants, through written communication, of asbestos abatement activities.
- 5.1.7 Conduct initial exposure assessments prior to the removal of ACM where a negative exposure assessment has not been conducted.
- 5.1.8 Conduct an annual negative exposure assessment during Class I, Class II, Class III and Class IV asbestos removal and maintenance projects.
- 5.1.9 Identify and label, where applicable, ACM with appropriate asbestos danger signage as required by the Occupational Safety Health Administration (OSHA).
- 5.1.10 Conduct an annual assessment of all accessible, friable asbestos containing materials.
- 5.1.11 Maintain copies of all personnel certifications, licensing, medical evaluations, respirator fit test records, and annual NESHAP and OSHA notifications.
- 5.1.12 Maintain the asbestos centralized data management system.
- 5.1.13 Investigate asbestos related concerns of campus community members, contractors, and visitors.

Note: *All Materials are considered to be asbestos containing except those listed in section 1.3.*

5.2 Facilities Management Services, Thomas and Mack/Sam Boyd Stadium, Student Affairs

- 5.2.1 Implement the Asbestos Management Plan within each sub-department.
- 5.2.2 Ensure all personnel receive the appropriate asbestos training prior to conducting activities within facilities known to contain asbestos.
- 5.2.3 Maintain current asbestos certifications/licensing to perform any and all asbestos related work activities, when applicable.

- 5.2.4 Submit an Asbestos Abatement Notification to RMS and obtain an Asbestos Work Authorization prior to UNLV personnel commencing any maintenance, repair, or renovation activities.
- 5.2.5 Submit an online Asbestos Service Request Form <https://chimeracloud.org/chimera/modules/asbestos/s/pub/index.php?c=unlv> to RMS and obtain an asbestos survey report prior to commencing any maintenance, repair, renovation, or demolition activities.
- 5.2.6 Respond to accidental disturbances of asbestos containing materials and report all pertinent information to RMS.
- 5.2.7 Ensure that only qualified asbestos abatement contractors perform asbestos abatement activities.
- 5.2.8 Ensure that all third party contracted work has an asbestos survey completed by RMS or a licensed asbestos consultant prior to starting any work.
- 5.2.9 Notify all contractors, working within a facility, of all known locations of asbestos whether or not they are required to work with the asbestos and have signed the Contractor Acknowledgement Form (**Appendix A**).
- 5.2.10 Contract with a third party consulting firm to ensure final air clearance sampling is conducted after asbestos removal activities.
- 5.2.11 Ensure ACM waste is transported by a licensed transporter and transported to a proper disposal facility within the State of Nevada.

5.3 Planning and Construction Services

- 5.3.1 Implement the Asbestos Management Plan within each subdepartment.
- 5.3.2 Coordinate with RMS when renovations and demolitions are planned to obtain existing asbestos surveys.
- 5.3.3 Notify RMS of any asbestos related incidents during projects.
- 5.3.4 Submit an online Asbestos Service Request Form <https://chimeracloud.org/chimera/modules/asbestos/s/pub/index.php?c=unlv> to RMS and obtain an asbestos survey report prior to commencing any maintenance, repair, renovation, or demolition activities.
- 5.3.5 Ensure that all third party contracted work has an asbestos survey completed by RMS or a licensed asbestos consultant prior to starting any work.
- 5.3.6 Ensure that only qualified asbestos abatement contractors perform asbestos abatement activities.
- 5.3.7 Notify all contractors, working within a facility, of all known locations of asbestos whether or not they are required to work with the asbestos and have signed the Contractor Acknowledgement Form (**Appendix A**).
- 5.3.8 Contract with a third party consulting firm to ensure final air clearance sampling is conducted after asbestos removal activities.
- 5.3.9 Ensure ACM waste is transported by a licensed transporter and transported to a proper disposal facility within the State of Nevada.

5.4 Employees

- 5.4.1 Attend the appropriate initial and refresher trainings as directed by your supervisor and the AMP.
- 5.4.2 Use non-penetrating methods (adhesive strips, double-sided tape, etc.) for hanging items on asbestos containing walls.
- 5.4.3 Promptly report any potential asbestos debris or damaged materials (e.g., damaged floor tiles and ceiling and wall materials).
- 5.4.4 Contract all renovation work through Facilities or Planning and Construction.
- 5.4.5 Contact your supervisor or Risk Management and Safety if you see improper cleaning (not using wetted rags or paper towels, HEPA filtered vacuums) or maintenance activities involving materials that may contain asbestos.
- 5.4.6 Do not damage, disturb, or remove asbestos containing materials. Drilling, hammering, cutting, sawing, screwing, or breaking any materials that may contain asbestos is not permitted, including wall and joint compound, ceiling tiles, floor tiles, or insulation. Please avoid generating any dust or debris with asbestos containing materials.
- 5.4.7 Do not vacuum, dry sweep, or try to remove debris that may contain asbestos.

6.1 Inspectors

- 6.1.1 All inspectors engaged in the sampling of ACM shall obtain certifications and licensing inclusive to any and all State of Nevada requirements during inspection and sampling of ACM.
- 6.1.2 Inspectors shall meet the requirements relating to the collection of bulk samples in accordance with 29 CFR 1926.1101 Class I and Class III asbestos work.
- 6.1.3 Inspectors must review previous survey and sampling data prior to conducting a site visit of the project area.
- 6.1.4 Inspectors must determine the presence location and quantity of ACM within the project area.
- 6.1.5 Inspectors must collect the appropriate number of bulk samples, in a random manner, from a homogeneous material according to 40 CFR 763 Subpart E, regardless of the installation date of a building material.
- 6.1.6 Bulk samples of materials, when analyzed via Polarized Light Microscopy (PLM), have an asbestos content of 5% or less are to be point-counted using the EPA 400 point 600/R-93-116 method or are to be assumed to contain asbestos.
- 6.1.7 An annual NEA must be conducted while sampling asbestos containing materials.

6.2 Survey Reports

- 6.2.1 Surveys must contain a summary identifying the project area, the date of the inspection, the materials sampled (eg... surfacing, TSI or miscellaneous) within the project area, the results of the sample analysis.

6.2.2 Survey reports must also include a copy of the State of Nevada Department of Business and Industry Industrial Relations Occupational Safety and Health Administration Asbestos Control Program license of the inspector, the online service request, building drawings identifying the location of the sample with the sample number, chain-of-custody, and laboratory analysis report.

Note: *Inspection reports are invalid after a renovation has taken place. A new survey of the newly installed building materials must be conducted prior to the next renovation.*

Note: *All Materials are considered to be asbestos containing except those listed in section 1.3.*

7.0 Training

7.0.1 Employee Information and Training - UNLV shall train each employee who is likely to be exposed in excess of a PEL, and each employee who performs Class I through IV asbestos operations, in accordance with the requirements of 1926.1101(k)(9). Such training shall be conducted at no cost to the employee. The employer shall institute a training program and ensure employee participation in the program.

7.1 Asbestos Awareness Training

7.1.2 All UNLV maintenance and custodial staff involved in cleaning and minor maintenance tasks where ACM may be accidentally disturbed shall receive awareness training of at least 2 hours.

7.2 16 Hour Maintenance Worker Training

7.2.1 All UNLV maintenance and custodial personnel who are involved in general maintenance and asbestos-containing material repair tasks that will result in the disturbance of ACM shall receive 2-hour awareness training and 14-hours of additional training.

7.3 Asbestos Abatement Worker

7.3.1 Shall complete at least a 4-day training course as outlined in 40 CFR 763 Subpart E Appendix C. The 4-day worker training course shall include lectures, demonstrations, at least 14 hours of hands-on training, individual respirator fit testing, course review, and an examination. Hands-on training must permit workers to have actual experience performing tasks associated with asbestos abatement.

7.3.2 A licensed abatement worker shall keep his or her current license at the location at which the licensed abatement worker is performing activities for the abatement of asbestos.

7.4 Asbestos Abatement Supervisor

7.4.1 All persons seeking accreditation as asbestos abatement contractor/supervisors shall complete an additional 5-day training course, separate from the 4-day abatement worker training, as outlined in 40 CFR 763 Subpart E Appendix C. The training course must include lectures, demonstrations, at least 14 hours of hands-on training, individual respirator fit testing, course review, and a written examination. Hands-on training must permit supervisors to have actual experience performing tasks associated with asbestos abatement.

7.4.2 A licensed abatement supervisor shall keep his or her current license at the location at which the licensed abatement worker is performing activities for the abatement of asbestos.

8.0 RESPIRATORY PROTECTION

All university employees must be provided with respirators when assigned to work in Class I-III asbestos work or Class IV work that takes place in a regulated area. Personnel engaged in asbestos abatement activities are required to follow the UNLV written respiratory program.

9.0 ASBESTOS ABATEMENT

9.1 Pre-Abatement Requirements

9.1.1 Prior to the project for the removal of asbestos containing material an asbestos survey identifying the asbestos containing materials must be obtained from RMS or a third party consultant, otherwise all materials within the project area are assumed to contain asbestos.

9.1.2 A walk-through of the project must be conducted at the project site prior to the start of project with the Project Manager, Risk Management and Safety representative, the abatement contractor, and the third party consultant, if applicable.

9.1.3 Provide RMS with the project start time, start date, and end date five working days in advance.

9.1.4 RMS to notify, through written communication, the campus community of the upcoming abatement project. RMS will post signage at all building entrances one working day prior to the start of the abatement project.

9.1.5 Area baseline air sampling must be conducted prior to asbestos abatement activities where there is a high potential for fiber release.

9.1.6 Contractor to provide submittal documents (eg. licensing, certifications, respirator fit testing records, notifications).

9.2 Handling Materials Containing Less than One Percent Asbestos

The handling of this material (for example - composite sheetrock, tape, and mud wall system, vinyl floor tile) type is considered “unclassified” work according to OSHA. This means that only certain work practices and engineering controls outlined in the OSHA standards (29 CFR 1926.1101) apply. Which general work practices and engineering controls are applicable depends on whether the employees’ levels of exposure to airborne asbestos exceed either of the asbestos Permissible Exposure Limits (PELs). In the event the employee’s airborne exposures are below the PEL, then only two of the standard's general work practice control procedures and three of the standard's general prohibitions pertain to the sheetrock removal operations; and none of the standard's engineering control methods pertain to the sheetrock removal operation. The general work practices the abatement contractor must observe under such conditions follow:

Using wet methods per 29 CFR 1926.1101(g)(1)(ii).

Prompt clean-up and disposal of wastes and debris contaminated with asbestos in leak tight containers per 29 CFR 1926.1101(g)(1)(iii). *OSHA* does not require the containers be labeled, only leak-tight. Prohibitions include the following:

1. Use of high high-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air (29 CFR 1926.1101(g)(3)(i)).
2. Use of compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air (29 CFR 1926.1101(g)(3)(ii)).
3. Using employee rotation as a means of reducing employee exposure to asbestos (29 CFR 1926.1101(g)(3)(iv)).

9.3 Abatement Requirements

9.3.1 All contractors engaging in the removal of asbestos containing building materials must receive a copy of the UNLV Section 02080 Asbestos Abatement Specifications.

9.4 Maintenance Activities

9.4.1 Only Class III, small scale short duration operation and maintenance type activities and Class IV asbestos work may be performed by predetermined and qualified UNLV personnel who have received the appropriate training as it relates to the activities being conducted. Work practices, as a minimum, must conform to the guidelines set forth in the O&M Work Practices Manual.

9.5 Air Sampling

9.5.1 Initial Exposure Assessment

9.5.1.1 A "competent person" must conduct an exposure assessment immediately before or at the initiation of an asbestos operation to ascertain expected exposures during that operation or workplace. The assessment must be completed in time to comply with requirements which are triggered by exposure data or the lack of a "negative exposure assessment," and to provide information necessary to assure that all control systems planned are appropriate for that operation and will work properly. UNLV shall presume that employees are exposed in excess of the TWA and excursion limit until the UNLV conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PELs.

9.5.2 Negative Exposure Assessment

9.5.2.1 A Negative Exposure Assessment (NEA) shall be conducted on all maintenance and abatement activities at intervals sufficient to document the validity of the exposure during removal operations annually. There are three potential approaches provided under 29 CFR 1926.1101(f)(2) for producing a negative exposure assessment. These are the use of objective data and previous air monitoring results which have been collected within the past year. If UNLV cannot produce a negative exposure assessment with objective data or previous air monitoring results, then exposure monitoring is required. Until a negative exposure assessment is produced, UNLV shall comply with the elements of the standard that are applicable and assume the PEL will be exceeded. Personal protective equipment (eg. respirator, full body covering) is required for employees who are conducting abatement or maintenance activities while a negative exposure assessment is being established.

Note: *Prior to conducting an NEA, an Initial Exposure Assessment shall be conducted. See Appendix B.*

9.5.3 Final Clearance Air Sampling

9.5.3.1 After final cleanup and the asbestos control area is dry, but prior to clearance sampling, the Contractor and a third party representative shall perform a visual inspection in accordance with ASTM E 1368 to ensure that the asbestos control and work area is free of any accumulations of dirt, dust, or debris.

9.6.2 A third party representative shall collect area samples using aggressive air sampling techniques as defined in the EPA 560/5-85-024 to establish an asbestos fiber concentration of less than 70 structures per square millimeter by use of transmission electron microscopy (TEM). Sample results shall be returned by the laboratory within 24 hours of the final air clearance sampling.

9.6 Waste Disposal

All asbestos that is intended for transport must be wetted with a water and surfactant mixture and stored in:

- a) A plastic bag which is not less than 6 mils thick and sealed so it will not leak;
- b) A combination of plastic bags which equal at least 6 mils in thickness; or
- c) A container made of cardboard or metal which is lined with plastic.
- d) Stored in the Universal Waste area.

9.7 Final Report Documentation

All completed forms and final report documentation shall be submitted to the Risk Management and Safety department.