WNC Policies and Procedures Manual

Procedure: **ASBESTOS MANAGEMENT PROGRAM**
Policy No.: 11-17-1
Department: Environmental Health and Safety (EH&S)
Contact: EH&S Coordinator

Policy: The purpose of this policy is to minimize and control potential exposures to asbestos fibers liberated from building materials for all and to assure compliance with all applicable regulations.

AHERA Asbestos Survey
Asbestos Containing Material (ACM)
Final Acceptance
Nevada Administrative Code (618)
Potential Asbestos Containing Material (PACM)
Respiratory Protection
Waste Disposal

Section 1. Scope

1. The EH&S Department is responsible for timely completion of Asbestos Containing Material (ACM) AHERA compliant surveys to be used to structure facilities abatement subcontracts and related remodeling work. In addition EH&S shall provide sample analysis, final acceptance testing and monitoring activities to compliment these activities. EH&S will utilize a licensed asbestos consultant for all abatement work. EH&S will provide awareness training for personnel that in work areas that contain Asbestos Containing Materials
2. Facilities/Planning will write and manage the asbestos abatement subcontract, work scope or provide coordination with the Department of Public Works. Facilities/Planning will both abate and maintain asbestos; they will see that all work complies with the contract as well as State, Local, and Federal health and safety requirements. No remodeling shall be under taken with out the completion of an AHERA compliant survey.
3. Both EH&S and Facilities/Planning shall maintain an AHERA trained person on staff. Both groups will confirm that regulatory requirements are met.
4. EH&S will verify with the risk management office that the contractor has the appropriate liability insurance in place prior to abating or remediating asbestos.
5. Facilities/Planning must maintain and monitor construction to assure that ACM are not used in renovations or new constructions.

NOTE: *Per Nevada administrative code 618.961 surfacing material, flooring material or thermal system insulation in a building shall be deemed material presumed to contain asbestos unless the presumption is rebutted by a licensed inspector in accordance with the provisions of 29 CFR 1910.1001 (j) (8) or 29 CFR 14261101 (k) (5).*

Section 2. Glossary

A. Asbestos: includes chrysotile, amosite, crocidolite and tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these materials that have been chemically treated and/or altered.
B. Asbestos Containing Materials (ACM): all materials containing greater than 1% asbestos by weight.
C. Presumed Asbestos Containing Materials (PACM): any material that is likely to contain asbestos, which has not been positively identified through analysis by a National Institute for Standards and Technology (NIST) or EPA, accredited laboratory.
D. Regulated Asbestos Containing Material (RACM): those friable materials containing greater than 1% asbestos by weight; Category 1 non-friable material that has become friable; Category 1 non-friable material that will be subject to grinding, cutting, sanding or abrading; and Category 2 non-friable material that will have a high probability of being crumbled, pulverized, or reduced to a powder by the demolition/renovation activity.
E. Friable: those asbestos containing materials that will crumble, flake or otherwise release asbestos dust under hand pressure or which can release fibers when distributed by mechanical means (drilling, sawing, sanding, etc.). Often these materials have degraded since their original installation, thus evolving from being non-friable to being friable. They can include spray-on acoustic materials, flaking plaster and damaged pipe insulation materials.
F. Non-friable: solid asbestos containing construction materials which are in good condition and will not release asbestos fibers, including intact floor tiles, laboratory bench counter tops, transite panels, cement products, and encased pipe insulation. When undertaken and performed by properly qualified personnel, friable ACM can be rendered non-friable by appropriate encapsulation and enclosure methods. Non-friable materials can be made friable by mechanical means.
G. Category 1) non-friable materials: asbestos containing packing, gaskets, resilient floor coverings, and asphalt roofing products.
H. Category 2) non-friable materials: non-friable asbestos containing products that are not Category 1) materials, such as various transite cement products.
I. National Emission Standard for Hazardous Air Pollutants (NESHAP): a set of regulations set forth by the Federal Environmental Protection Agency (EPA) to control asbestos emissions from renovation and demolition activities in all commercial building.
J. Asbestos Hazardous Emergency Response Act (AHERA): a set of regulations governing all activities involved in the identification and abatement of asbestos containing materials. The regulations establish minimum personnel training requirements and accepted procedures to be used to control asbestos hazards.

K. Class I) asbestos work: the removal of Thermal System Insulation (TSI) and sprayed-on or troweled-on (surfacing) ACM or PACM exceeding three square feet or three lineal feet in area.
L. Class II) asbestos work: the removal of ACM or PACM that is not TSI or surfacing ACM or PACM exceeding three square feet or three linear feet in area.
M. Class III) asbestos work: repair and maintenance operations that are likely to disturb ACM or PACM which removes less than one glove bag of material (measuring 60 by 60 inches or less). State of Nevada regulations further limits the area of disturbance for all Class III) work to three linear feet or three square feet.
N. Class IV operations: custodial and housekeeping operations where minimal contact with ACM or PACM may occur.
O. Permissible Exposure Limit (PEL): defined as 0.1 fibers/cubic centimeter (f/cc) of air. This translates into the permissible inhalation of a total of 1,000,000 fibers/day (100,000 f/M3 x 10 M3 of air inhaled/day).
P. Fibers: a structure that is at least five microns in length, with a length to width aspect ration of 3:1.
Q. Bulk Material Samples: samples of ACM or PACM construction materials collected from areas of proposed construction or remodeling related activities. Normal sample process involves the extraction of a core sample of the material in question.
R. Core Samples: a bulk material sample that penetrates to the full depth of the construction material being sampled.
S. Thermal System Insulation (TSI): any pipe or boiler insulation system, which may or may not contain ACM or PACM.
T. Survey: a written determination of construction material composition by a properly licensed inspector. A survey may include either the collection of an appropriate number of bulk samples or a review of existing building survey records and/or a physical inspection of the proposed work site.

Section 3. Procedure

1. The Facilities/Planning will identify the scope of the renovation effort.
2. Environmental Health and Safety (EH&S) will develop an asbestos survey that identifies the scope of the ACM in that area and forward this information to facilities and planning. EH&S will also forward an appropriate air sampling and final acceptance program to Facilities/Planning for incorporation in the Facilities and Planning or Public Works subcontract.
3. Facilities and Planning based on this information will develop a work plan with EH&S. This work plan will address all compliance issues including but not limited to the following:
    - Respiratory Protection Plan
    - Air Monitoring Plan
    - List of Contractor Submittals
    - Third Party Background and Perimeter Sampling

- Suggested Decontamination Plan
- Waste Disposal Requirements
- Final Close Out Criteria
- Record Keeping Requirements
- Required Hold Points
- Hazard Analysis
- Medical Testing Requirements
- Training Requirements

4. The potential worker/contractors shall meet three times prior to the start of the work with Facilities/Planning and EH&S:
   First in a Pre-Job setting where scope and approach will be clarified to allow finalization of approach and procedures needed to prepare a bid for the work. Secondly for the final acceptance of the contractor's submittals including: Procedures, Work Plans, Medical, and Training Records. At this point if the acceptance is received authorization will be given from facilities to start preparation work. Asbestos containing material however will not be touched until the required respiratory plan and testing and ACM enclosures are in place. When the respiratory plan baseline testing and the ACM enclosures are complete and successfully tested a third meeting will be held and certain asbestos work may be allowed to start.
5. Weekly or daily meetings will commence after the start of work until final acceptance is reached.
6. Final Acceptance: Both Facilities/Planning and EH&S will agree when the work has reached final acceptance. The intent is to control work practices to maintain building asbestos levels compliant with OSHA's negative air monitoring. Facilities/planning will assemble a final document package for EH&S. This package will serve to document the completed remediation and the required Maintenance of ACM. All regulator compliance documentation will be included in this package.
7. Disposal shall be completed in accordance with all appropriate laws. Completed manifests and other regulatory documentation must be included in the final documentation package.
8. Both EH&S and Facilities/Planning shall agree that the final asbestos documentation package is complete prior to the final payment to the contractor.
9. Operations & maintenance (class III & IV asbestos) workers – Facilities/Planning.

   O&M workers have the responsibility to:

   - Read and comply with procedures and guidelines provided by their supervisors and the EH&S Department.
   - Perform their job duties in a manner that conforms to procedures outlined in this document, such as the "Wet Method" Procedure contained in Appendix "A".
   - Ensure that their asbestos worker (Class III & IV) training is up to date prior to undertaking any duties related to that training.

- Ensure that any Negative Exposure Assessment to be used is current.
- Inform EH&S at least a week before the start of work to prepare necessary survey and or contract.

10. All college personnel shall report any labeled, loose, or damaged ACM or PACM to Facilities/Planning.

Section 4. Asbestos-Free Renovation and Construction

1. Facilities/Planning must ensure that all campus contract and purchase specifications require stipulations for the documented use and certification of asbestos-free materials.
2. To meet the State requirements Facilities/Planning, their Representatives, and Contractors must first ensure that all contractor submittals stipulate that products and materials are asbestos-free. This can be accomplished through the submittal of a Material Safety Data Sheet (MSDS) that accounts for greater than 99% of the products composition or analysis of the product composition performed by an accredited laboratory.
3. In addition they must document at least weekly and at the start and completion of all activities that through out the renovation or construction process that the materials use in the construction conform to the contractor submittals. This shall be accomplished by detailed inspection of all materials on-site and material as it is installed. Facilities/Planning must similarly verify the use of asbestos free materials in construction that they undertake. They must document as required in this section.
4. Facilities/Planning shall put together a package of approved submittals and periodic inspection reports that will be submitted to EH&S at the conclusion of a project to document the asbestos-free construction. This report (if completed) will eliminate the need for an asbestos survey and its associated cost. This report will become a part of the EH&S asbestos survey permanent documentation.

Section 5. Air Monitoring

1. NEGATIVE EXPOSURE ASSESSMENTS (NEA) is required for all O&M procedures. NEAs normally consist of a series of air samples collected during the performance of a specific O&M task, the results of which are used to statistically establish that occupational exposures will consistently remain below the PEL (0.1 f/cc) for the O&M process/procedure monitored. Once a NEA has been established, air sampling must be conducted on at least an annual basis to confirm that the O&M procedure is maintaining an acceptable air concentration. Properly trained and qualified personnel (industrial hygienists, licensed monitors or specially trained personnel) must conduct NEAs).
2. FINAL CLEARANCE AIR SAMPLES are required for all asbestos abatement projects prior to dismantling area containment. A properly licensed independent third-party consultant is required for all clearance air sampling. Clearance samples must establish a final airborne considered acceptable.

Section 6. Asbestos Waste Disposal

A. Disposal of asbestos waste resulting from in-house Class III or IV work activities shall be arranged for by the EH&S Department according to the following criteria:

- Friable asbestos waste shall be wetted and double bagged in six mil (6 mil) polyethylene disposal bags. Bagged asbestos waste materials must be labeled with proper EPA and OSHA warning labels.
- Non-friable asbestos waste must be maintained in a manner that will minimize damage.
- All asbestos waste materials will be placed in storage at EH&S facilities designated for such storage purposes.
- All asbestos waste must be taken to disposal facilities permitted to handle such materials.
- Disposal records will be maintained in the EH&S offices.

NOTE: *The EH&S Department will not be responsible for the disposal of any contractor generated asbestos waste materials.*

Section 7. Employee Training

A. All WNC employees who perform Class III asbestos work are required to complete a 16 hour EPA AHERA Operations and Maintenance training course, as per 29 CFR 1926.1101 (k) (8) (iv), prior to being permitted to perform such work.

B. All WNC employees who perform Class IV asbestos work are required to complete an EPA AHERA asbestos awareness training course of at least two hours in duration, as per 29 CFR 1926.1101 (k) (8) (v), prior to being permitted to perform such work.

C. All AHERA trained and/or certified employees will also be required to attend the appropriate AHERA annual refresher courses prior to the expiration date of their current training credentials.

D. All WNC employees who work with asbestos materials are also required to receive the following training and/or certification(s);

- Annual asbestos and respirator medical examinations.
- Respiratory Protection Training.
- Annual respirator fit testing (at UNR).
- Annual asbestos management plan review.

Section 8. Accidental/Unplanned Asbestos Release

A. PERSON CREATING OR DISCOVERING THE ACCIDENTAL RELEASE

In the event of accidental damage to Asbestos Containing Materials (ACM) pipe insulation, ACM ceiling acoustical materials, etc.) which results in the liberation of the asbestos, the person or persons either responsible for or who discover the damage shall initiate the following actions:

- ISOLATE THE AREA OF DAMAGE through the use of barricades in order to contain the release and to prevent ACM materials from being spread to a larger area. Avoid all contact with the ACM debris.
- NOTIFY AREA PERSONNEL of the release. All personnel should leave the room in question until full containment or clean up is completed.
- NOTIFY THEIR SUPERVISOR of the release.

B. SUPERVISOR OF THE PERSON REPORTING THE RELEASE

The supervisor who receives notification of an accidental asbestos release will contact appropriate facilities maintenance or buildings and grounds personnel to make arrangements for clean up of the debris by properly qualified personnel.

Section 9. Record Keeping, Labeling, and Warning Signs

A. The original copy of all employee asbestos related training records will be maintained in the EH&S offices. Copies will be forwarded to the employee's department and the employee.

B. Copies of all building survey and asbestos abatement documents, drawings, records and reports will be maintained at the EH&S offices. Asbestos free revaluation and construction documentation shall also be filed with EH&S.

C. EH&S Department personnel will identify those campus locations which require warning signs as per OSHA 29 CFR 1910.1001 (k) (7).

Section 10. References

- The Asbestos Hazard Emergency Response Act (AHERA).
- National Emission Standards for Hazardous Air Pollutants (NESHAP).
- Nevada Administrative Code NAC 618.850
- Nevada revised statute NRS 624.
- SECTION 1529 TITLE 8 California code of regulations SUBSECTION "A" through "B".
- State of Nevada Division of Industrial Relations occupational Safety and Health enforcement section memorandum of April 14, 2000 from David Going.
- Occupational Safety and Health Administration 29 CFR PART 1910.1001

APPENDIX "A"

STANDARD WET METHOD FOR WALL PENETRATIONS

As a result of construction material asbestos survey results indicating that some buildings on campus have asbestos containing sheetrock joint compound and skim coats, a standardized wet method needs to be developed to control potential occupational asbestos exposures which may result from maintenance activities involving minor penetrations of walls. Possible exposures may result from employees making penetrations through asbestos contaminated wall surfaces for the purposes of installing screws and/or wall anchors.

Construction materials sampling of all wall surfaces prior to release of work is ill advised due to the nature and extent of damage to wall surfaces due to the sampling protocol. Damage due to sampling damage will exceed the potential damage of the screw and/or anchor installation itself.

Therefore, a safe method of achieving necessary wall penetrations without causing unwanted employee exposures to asbestos needs to be established. The method should incorporate work procedures that control fiber releases.

One example would be to use a damp sponge or wet paper towel when making the wall penetrate. The damp sponge or wet paper towel should be placed directly on the wall surface at the point of penetration, and the penetration made through both the sponge or paper towel and the wall. The penetration tool (drill bit, screw driver, knife, etc.) should then be withdrawn through the sponge or paper towel while hand pressure is applied to the tool through the sponge or paper towel, thus wiping off possible asbestos contamination following the penetration. Following extraction of the penetration tool the sponge or paper towel should be used to wipe the wall surface of any remaining debris. The sponge or paper towel should then be placed into a small plastic bag and sealed.

The sealed bag and its contents should be delivered to the Environmental Health & Safety Office at the earliest convenient occasion for disposal.

In the event the above procedure cannot be accomplished, or there are any questions regarding this procedure, please contact the **EH&S** office.

APPENDIX "B"

NEA FOR A STANDARD METHOD FOR SPRAYED ACOUSTIC CEILING ANCHOR SCREW INSTALLATION

A Negative Exposure Assessment (NEA) has been completed for the identified procedure. In order for the NEA to apply, the approved procedure must be precisely followed. This approved method was established and tested on asbestos containing spayed acoustic ceiling. The procedure involved the installation of ceiling mounted smoke alarms. A total of three air samples were collected, one during the installation of each of three smoke alarms. Each alarm installation involved drilling holes for and installing three anchor screws to mount the smoke alarm base plate.

Equipment used:

- Platform mounted portable containment structure with adjustable height feature
- HEPA vacuum
- Personal Protective Equipment (PPE)
  - Respirator
  - Tyvek suit
- Wet paper toweling
- Step ladder
- Powered and hand tools
  - Drill & bit
  - Screw driver
  - Hammer
  - Electrical extension cord(s)
- Selection of anchor screws with plastic sleeves
- Plastic trash bags

Procedure:

1. Set up portable containment structure tight to the work surface and centered on the area to be drilled. Shims may be needed under the wheels to seal the structure to the ceiling surface. Lock wheels in place to avoid any movement of the structure while work is in progress.
2. Place the stepladder, tools and wet paper towels inside the containment structure.
3. Attach the HEPA vacuum to the provided opening in the containment structure. Turn on the HEPA vacuum and leave it running for the duration of the work.
4. Don PPE
5. Enter containment structure and seal the zippered opening.
6. Using the palm and fingers of one hand, puncture a sheet of wet paper toweling with a drill bit that is properly sized for the anchor screw plastic sleeve.
7. Place the tip of the exposed drill bit against the point to be drilled.
8. Using one hand, push the wet paper towel against the ceiling materials and form a seal around the drill bit.
9. Drill a hole through the ceiling surface while continuing to hold the wet paper towel against the ceiling surface.

10. When the hole is completely drilled, carefully lower the drill and paper toweling and fold towel into itself, sealing the acoustic debris into the towel.
11. Place the used paper towel into a plastic trash bag and close the bag.
12. Repeat the process until the desired number of holes is drilled at this location.
13. Use a hammer to tap the anchor screw plastic sleeves into position in the drilled holes.
14. Mount object by screwing anchor screws into the installed plastic sleeves.
15. When complete, use additional wet paper towels to wipe all interior surfaces clean of loose ceiling debris. Place used towels into the trash bag and close it.
16. Open containment access and exit containment.
17. If necessary, relocate containment structure to the next location and repeat the procedure for all remaining anchor screw installation locations.
18. When complete, properly seal and tie plastic bag containing the debris and used towels.
19. Place sealed bag into second plastic bag, seal, tie and properly label the bag as asbestos containing debris for disposal.
20. Contact EH&S to dispose of the ACM debris.

Results:

A total of three samples were collected, one each at three different locations in the same hallway area. The resulting airborne concentrations are listed below:

Sample #	**Location**	**Fiber Concentration**
NEA-1	SFB SE Hall	0.058 f/cc
NEA-3	SFB E Exit	0.040 f/cc
NEA-4	SFB NE Hall	0.057 f/cc
Average Concentration =		0.052 f/cc
Standard Deviation =		0.008 f/cc
99% Confidence Interval =		0.028-0.076 f/cc

Discussion:

The NEA results indicate that installing anchor screws in sprayed acoustic ACM ceilings can be done safely when using proper techniques. Occupational exposure to asbestos was well with in permissible exposure limits for this procedure. It is advised that personnel installing anchor screws using this procedure continue to wear all PPE listed in the procedure. This practice will serve to maintain any resulting asbestos exposures at the lowest possible level.