Northern Arizona University
Asbestos O&M Program

Second Revision: Implemented Feb 23, 2017

Introduction

This is the Northern Arizona University Asbestos Operations and Maintenance guide.
This document has been developed for use by University employees and contractors as a guide for completing service, cleaning and maintenance tasks which involve contact with or disturbance of asbestos containing building materials (ACBM). This document does not serve as a substitute for training required by local, state, or federal laws for asbestos workers or persons who work in buildings with asbestos. This document is designed for use as a supplement to the reader's current asbestos training, and to local, state, and federal standards for the maintenance, repair, and removal of asbestos from buildings.

Due to the presence of asbestos in various buildings located on the University campus, NAU's asbestos program includes a number of elements which are designed to protect University employees, students, tenants, contractors, and other building occupants from exposure to asbestos in the course of day to day activities. The main purpose of this plan is to provide specific protocol for maintaining ACBM in university buildings in good condition and prevent disturbance. When small scale disturbance is necessary, or has occurred unintentionally, this guide will provide specific protocol for performing the cleanup or removal of ACBM in a way that will reduce or eliminate the risk of release of airborne asbestos fibers into the building and surrounding area. This guide does not address large scale abatement of asbestos, but deals specifically with day to day operations only.

The key elements which are included in this document are:

1) Definitions

2) Notification program to inform workers, tenants, and building occupants where ACBM is located, and how and why to avoid disturbance.

3) Surveillance program to assess and document the condition of ACBM in buildings, and to trigger response actions when necessary.

4) Work permit/control system to prevent unauthorized disturbance of asbestos during scheduled maintenance and remodeling activities.

5) Specific work practices to be followed when working with ACBM which will reduce/eliminate the risk of disturbing asbestos, or which will control the release of fibers during intentional small scale disturbance activities.

6) Record keeping system to document the presence of asbestos, ongoing O&M activities, and abatement activities in buildings on the University campus.

7) Worker protection plan which includes medical surveillance and a respiratory protection plan when required.

8) Training program to ensure that university employees and contractors are properly trained and informed in the hazards of asbestos, local laws, and University policy on the disturbance, handling, and removal of asbestos.

9) University protocols and procedures for requesting asbestos surveys, work authorizations, and asbestos abatement.

10) Consequences of failing to comply with this Asbestos O&M plan and the University Safety Policy.

11) Important Contacts

12) Links

11) Attachments

Definitions

Abatement – The removal of asbestos containing building materials (ACBM) from a building using a specific set of work practices designed to protect workers and building occupants from exposure to asbestos fibers. Special training, materials, tools, protective measures, and engineering controls may be necessary.

AHERA – Acronym for the *Asbestos Hazard Emergency Response Act* – 40 CFR 763, Subpart E. This regulation governs the identification and management of Asbestos in K-12 schools. The AHERA requirements are currently the most stringent asbestos regulations in place, and are generally viewed as the state of the art and often adopted for non-AHERA facilities.

Asbestos – A group of naturally occurring magnesium silicate minerals which have a fibrous nature. Due to desirable physical properties, this mineral was used in a number of commercial and industrial applications including architectural finishes and insulation products. Asbestos fibers have known adverse health effects when inhaled.

Asbestos containing material (ACM) – A material or product which contains greater than 1% asbestos.

Asbestos containing building material (ACBM) - Asbestos containing material, including surfacing, thermal system insulation, and miscellaneous materials which are installed on the interior of a building.

APM (Asbestos Program Manager) - The person responsible for administering the University Operations & Maintenance plan.

Disturbance – Any activity which crumbles, pulverizes, or otherwise disrupts the matrix of ACM or Presumed ACM (PACM); or which generates visible debris or dust from the material; or which renders that material friable. Disturbance includes activities which impact only a small quantity of ACM or PACM.

Fiber – A particulate form of Asbestos which is 5 micrometers or longer, with a length- to-width ratio of at 3 to 1 or greater.

Friable – A condition referring to the ability of a material to be crumbled, pulverized, or reduced to powder by hand pressure; or a material which has previously been crumbled, pulverized, or reduced to a powder by any means.

Intact – ACM which has not deteriorated or been damaged. The matrix of an intact material remains undisrupted and the fibers remain bound within the matrix.

Miscellaneous ACM – Any ACM with the exception of surfacing materials, and Thermal System Insulation. Examples include mastics, floor coverings, and roofing materials.

Operations and Maintenance (O&M) – 1) Program or Plan; A program of work practices used to maintain ACBM in good condition, ensure cleanup of asbestos debris, and prevent ongoing release by controlling the disturbance of ACBM. 2) Work; Small scale, short duration asbestos removal which is performed in the course of day-to-day operations. The scale of O&M work is limited to the amount of debris which can be contained by a single 60"x60" trash bag or glove bag.

OSHA Class I asbestos work is work involving the removal of ACM or PACM Surfacing materials and TSI.

OSHA Class II asbestos work is work involving the removal of ACM which is not Surfacing or TSI.

OSHA Class III asbestos work is work involving the repair and maintenance of building systems which may involve the disturbance of ACM or PACM.

OSHA Class IV asbestos work is work which may put employees in contact with ACM or PACM materials, but where no disturbance occurs.

Presumed ACM (PACM) – Thermal system insulation or surfacing material installed in buildings constructed before 1981. This material is considered to contain asbestos until the designation has been rebutted by analytical methods described in 29 CFR 1926.1101 (k)(5).

Removal – Any operation where ACM or PACM is taken out or stripped from structures or substrates.

Surfacing ACM – Any ACM which is applied as a surface treatment. Examples include spray-applied fireproofing and acoustical ceiling textures.

Thermal System Insulation (TSI) ACM – Any ACM which is applied to pipes, boilers, boiler tanks, ducts, or other systems to prevent heat loss or gain. Examples include pipe insulation, duct wrap, and boiler tank insulation.

Notification

Building Occupants:
In boiler rooms, mechanical spaces, plenums, and other areas which contain ACBM and which are not areas of public access, warning signs alerting occupants to the presence of asbestos will be located at the entry to that space. In addition, warning labels will be placed directly on friable ACBM materials including TSI Pipe insulation, boiler tank insulation, and duct seam tape. Materials which have a coarse texture that prevents the adhesion of labels will have labels affixed directly adjacent to the material at access points or in areas where disturbance is most likely. In this case the signage will include a description of the material which the signage refers to.

In-house workers and maintenance staff:

Cleaning and maintenance staff shall be briefed on the presence of asbestos in their area of responsibility. Notification may be accomplished through physical labeling of the ACBM where appropriate, verbal notification by the Asbestos Program Manager (APM) on a case by case basis, or through the university asbestos awareness training program.

Contractors and Vendors:

Prior to the start of any work, contractors arriving on campus will be alerted in writing, verbally or by a chaperoned site walk, of the presence of any ACBM in the work area. Written notification will consist of NAU hazard communication form #FS-13. (Appendix A) which shall be included in the pre-bid documents for all construction projects, or independently issued to the contractor prior to the start of work. Contractors will be required to read, sign, and return form FS-13 prior to the start of the project. Copies of the FS-13 form will be retained with the project documents maintained by the project manager or NAU Contracts and Purchasing department.

Small projects and repairs for which bids are not submitted are not exempt from these notification requirements.

The office of the APM can issue a site specific FS-13 form along with the material inspection summary form for a specific project if it is requested. Information regarding the history, use, location, and management of asbestos on the University campus, or a site specific FS-13 form may be accessed by contacting the office of the APM by telephone or email. Contact information for the APM is contained in the contacts section of this O&M plan.

Surveillance

Thorough asbestos inspections of University buildings were performed and completed in June of 2000. The University maintains this database of materials contained in each building on the University campus. This database indicates the location, quantity, and a physical description of known ACBM in each building. In order to keep this database up to date, a physical inspections of building spaces which are scheduled for disturbance are made prior to the commencement of work or issuance of any material inspection forms which are requested for that site.

Inspections may only be performed by individuals who hold a current certification as an AHERA building inspector. The inspections for a building should be performed by individuals who are familiar with that building. Ideally, the same person should perform each inspection in order to increase the likelihood of noticing any changes in the condition of ACBM over time.

In addition to physical inspections by the APM or other certified inspector, University employees are encouraged to notify the office of the APM whenever they suspect a change in condition of a known, assumed, or suspected ACBM. University employees such as maintenance and custodial personnel

are intimately familiar with the buildings in which they work, and they form the first line of defense against accidental damage and unauthorized disturbance of ACBM in the building. The active participation of the University and maintenance personnel is the most important factor in successfully executing the University O&M plan.

Any changes in the status of ACM at a building are recorded as addendums to the original inspection report for a building. Changes in condition may be caused by authorized abatement activities, deterioration due to age or damage, or ongoing testing of building materials at the building.

NAU technical construction standards require that new construction on the University campus be free of asbestos. Because asbestos has not been banned, and construction materials are still occasionally found to contain asbestos, new construction and major renovations must be accompanied by inspection and sample analysis of new building materials in order to confirm that no asbestos is installed. The APM may assist project managers with determination of when inspections are necessary and with procurement of these services when required.

Work Controls

The University maintains a hazard inspection and communication system system for the purpose of preventing accidental exposure to asbestos (or other hazards) on the University Campus. A hazard inspection request **must** be submitted and completed prior to the start of any work on the university campus which involves the physical disturbance of more than ½ SF of any building materials.

Examples of work which involves disturbance of building materials include:

1) Removing and replacing floor coverings.

2) Patching or cutting holes in drywall.

3) Removing Acoustic ceiling panels (T-Grid) or glued/nailed ceiling tiles.

4) Any activities that involve drilling, cutting, sanding, scraping, crushing or pulverizing any existing building components as part of the work.

Examples of work which do not involve disturbance of building materials include:

1) Replacing light bulbs

2) Painting walls which do not involve sanding or scraping as part of the prep work.

3) Moving furniture which is not built-in.

4) Any activities which do not involve drilling, cutting, sanding, scraping, crushing, pulverizing, or removing any existing building components as part of the work.

Work which does not involve the disturbance of building materials may proceed without the submittal and completion of the Hazardous Material Survey Request. In cases where there is a question whether the work activity will result in disturbance of building materials, the worker, supervisor, dispatcher, or requesting party shall contact the APM for clarification and guidance.

The Asbestos Survey Request form may be accessed on the internet from the Facility Services - Engineering and Inspections web page, or from the EH&S web page at the following address:

http://nau.edu/Facility-Services/Planning/Asbestos,-Lead,-and-PCBs/

http://nau.edu/facility-services/planning/asbestos,-lead,-and-pcbs/

If computer access is not possible, an Asbestos Survey Request may be made verbally by calling the office of the APM at (928)-523-6435.

Once Hazardous Material Survey Request is submitted, the APM will perform a site visit, check existing records for the building, and (if necessary) collect samples for additional analysis. Based on the results of these activities, an Inspection Summary (form FS-13A) will be issued which details any special precautions or controls which may be needed prevent disturbance of ACBM, and provide worker and building occupant protection during the course of the work activities. Once the inspection results are issued, the work may commence as usual unless special protective measures or asbestos abatement activities are required.

If special work practices are required, the APM can (at the client's request) solicit estimates and schedule an independent contractor to perform the asbestos removal, or can help arrange for O&M trained University employees to perform the work as necessary.

Because the process of collecting estimates, selecting, and scheduling an additional contractor takes time, and because asbestos removal often requires analytical clearance of the work area upon completion, extra time should be budgeted for jobs in which asbestos removal is anticipated.

Work Practices

Initiation of asbestos related work on the University campus shall begin with the completion of the Hazardous Material Survey Request (as described in the Work Controls section of this plan) by the party or department initiating or requesting the work. Following completion of the inspection, and issuance of the inspection summary which requires special work practices for asbestos disturbance, the requesting party should be prepared to work with the APM to schedule trained personnel to perform the work. Oversight services will typically be provided by the APM for O&M (small scale, short duration work performed by in-house employees) tasks. Proceeding with any disturbance of

ACBM without informing the APM of the schedule is strictly prohibited. The APM has the authority and responsibility for managing asbestos waste generated during the course of work, ensuring that safe work practices are employed, and maintaining up-to-date records of O&M activities which disturb asbestos.

Special work practices for O&M work are compiled on a material by material basis in the National Institute of Building Sciences (NIBS) Guidance Manual for Asbestos Operations & Maintenance Work Practices, or designed in-house on a job by job basis. All O&M work performed on the University campus must follow these accepted guidelines. A copy of the NIBS manual is housed in the office of the APM and may be reviewed upon request. All new asbestos work procedures (NIBS and in-house) must be reviewed and approved by the APM, and must be validated by analytical air sampling upon initial use and once per year after that. Air sampling is a legal requirement and will be performed by the APM. In order to facilitate air sampling, all work disturbing asbestos must be preceded by a notification to the APM.

If the quantity of friable ACBM to be disturbed exceeds 160 square feet, or 260 linear feet (for Thermal System Insulation), or exceeds the amount of waste that can be contained in a single waste bag, the project exceeds the scope of O&M work and abatement of the materials must be performed by a qualified asbestos abatement contractor. The APM can collect estimates from qualified contractors upon request. Copies of the estimates will be turned over to the requesting party for review and selection. This service is a courtesy in order to assist requestors in maintaining legal compliance and employee/student safety. **The Material Safety office is not responsible for project management, scheduling, funding, or coordination of multiple vendors.**

Bids/estimates for abatement contractors will be solicited and processed in accordance with Division 0 of the Northern Arizona University Technical Standards.
All abatement work performed on the University campus shall be in accordance with Division 1, Section 01120 (Appendix B), and Division 2, Section 02080 (Appendix C) of the Northern Arizona University Technical Standards. Prior to performing any work on the University Campus, contractors must meet University Insurance and Indemnification Guidelines (Sec II. D-1 and II. D-3), located in Appendix G of this plan. Asbestos abatement contractors will be required to submit the following documents.

a) An initial exposure assessment, or negative exposure assessment for the work to be performed, including analytical test results for air samples showing effectiveness of the work practices employed on prior jobs with similar scope of work. Initial exposure assessments shall be validated through personnel sampling at the time of the abatement project, and the results of the sampling shall be submitted with the project close-out documents.
b) Proof of notification of work to the State of Arizona Dept. of Environmental Quality, as specified in 40 CFR 61.145.
c) MSDS forms for any hazardous chemicals which the contractor will use on campus.
d) Appropriate training documentation for any asbestos workers and supervisors.

e) Close out documents including record of the work performed; date of work, waste manifests, and records of shipment and receipt of waste at the disposal site.

Once the project manager/initiator has selected a contractor and notified the APM of the choice, it will be the responsibility of the project manager to arrange for the Purchase Order or other payment, and determine the appropriate schedule for the work. The APM will act as liaison between the requesting party and the contractor unless otherwise requested.

Asbestos abatement contractors may also be used for small scale O&M work in cases where trained university employees are not available, or where other factors such as convenience or disposal issues make the use of a contractor more expedient or cost effective than use of University personnel. In these cases, the protocol outlined above for asbestos abatement should be followed.

OSHA Categories of Work for Asbestos

OSHA has defined specific categories for various types of asbestos work. These categories are used in part to determine the level of training, personal protective equipment, and engineering controls necessary to safely and successfully perform asbestos related work.

Class I asbestos work is work involving the removal of ACM or PACM Surfacing materials and TSI. Class I asbestos work may only be performed by certified asbestos workers using strict engineering controls. The University does not maintain a team of workers trained to the level required to perform Class I asbestos work, and this work is always performed by a private contractor.

Class II asbestos work is work involving the removal of ACM which is not Surfacing or TSI. Examples of Class II asbestos work include the removal of flooring materials, roofing and siding materials, wall systems, and other asbestos materials which are not classified as Surfacing or TSI. Class II asbestos work may only be performed by certified asbestos workers using accepted protocol and engineering controls. University employees are not trained to the level required to perform Class II asbestos work and this work is always performed by a private contractor.

Class III asbestos work is work involving the repair and maintenance of building systems which may involve the disturbance of ACM or PACM. Class III asbestos work includes the repair or disturbance of TSI, Surfacing, and all other ACM materials which may be included in a building, but is limited in scope to the amount of material which can be disposed of in a single 60”x60” waste bag. Class III asbestos work may be performed by workers who are certified as asbestos O&M workers and who are enrolled in the University respiratory protection program. The University maintains a number of workers with adequate training required to perform O&M tasks when required.

Class IV asbestos work is work which may put employees in contact with ACM or PACM materials, but where no disturbance occurs. Class IV asbestos work may include custodial and maintenance tasks. Class IV asbestos work may be performed by workers who have received two hours of asbestos awareness training. The University training program designed for maintenance and custodial staff, and for any workers whose duties may place them in contact with asbestos.

Recordkeeping

The majority of buildings on the University Campus have been surveyed for asbestos. Copies of the asbestos surveys are housed in the office of the APM. These documents contain the location, quantity, and a physical description of all known and assumed ACBM in the buildings. Any additional sampling conducted in the course of ongoing asbestos inspections is located with the initial survey for each building.

New buildings, or buildings which have been remodeled since the completion of the campus wide survey are either certified to be free of asbestos by the Architect and/or General Contractor, or are operated under the assumption that ALL building materials contain asbestos. Documentation of the status of new buildings and the results of any ongoing asbestos testing in these buildings are housed in the office of the APM.

Written or computer records of all Asbestos Survey Requests, and resulting survey summaries and hazard communication forms, are housed in the office of the APM. Records of asbestos abatement are housed in the office of the APM. Records of abatement and waste transport and disposal are also housed in the office of the APM (copies may also be maintained by the project manager for specific projects).

Records of respirator fit tests and medical surveillance are housed in the office of the N.A.U. Industrial Hygienist, or the Facility Services Safety Training office, who are responsible for administering the University respiratory protection program.

Records of personal air monitoring and negative exposure assessments are housed in the office of the N.A.U. Industrial Hygienist, or the APM who are responsible for performing the personal air sampling activities to comply with OSHA Standards. Copies of air monitoring results which are used to complete/validate initial or negative exposure assessments for O&M asbestos work are housed in the office of the APM.

Worker Protection

Respiratory Protection:
The University respiratory protection program is administered by the N.A.U. Industrial Hygienist, or NAU Facility Safety and Training Office. Employees who perform asbestos O&M work that require the use of a respirator must be enrolled in this program. A copy of the respiratory protection program may be viewed in Attachment D of this O&M plan. Respirator fit test records, training certificates, and employee sign off forms are permanently housed with these two offices. In addition, each trade, department, or organization which performs O&M work shall keep a copy of the respiratory protection
records for each employee who is enrolled.

Employees who wear negative pressure respirators in the course of work, and who are enrolled in the

University respiratory protection plan are required to undergo annual medical evaluations to determine if they are physically able to perform work wearing a respirator.

Medical Surveillance:
Medical surveillance is required for O&M workers who perform asbestos work for a minimum of 30 days per calendar year, or who are exposed at or above the OSHA permissible exposure limit (PEL). Days when asbestos work is conducted for less than sixty minutes are not counted towards the 30-day accrual time. It is NAU's goal to ensure that most or all workers do not exceed this threshold, but if workers are likely to surpass 30 days of asbestos work, early completion of the medical surveillance is encouraged.

Medical surveillance includes a medical and work history, pulmonary function test, chest x-ray, and other exam components deemed necessary to be performed at the discretion of a licensed health care professional to render a proper diagnosis. The examining physician will provide a written statement indicating the fitness of the employee to perform asbestos work, any medical conditions which result in limitations in the ability of the employee to wear a respirator or other personal protective equipment (PPE), and any medical conditions which would result in increased risk of health impairment from exposure to asbestos. The written opinion shall not reveal specific findings or diagnoses which do not directly pertain to the fitness of the employee to work with asbestos or wear PPE.

Medical surveillance for respiratory protection and/or asbestos workers can be arranged through the NAU Facility Services Safety and Training department, or through the NAU Industrial Hygiene office. The Asbestos specific medical questionnaire is attached to this document.

Training

Two Hour Awareness Training
Custodial and maintenance personnel employed directly by the University, or who work for a company which provides services under contract are required to receive a minimum of two hours of initial asbestos awareness training. This awareness training will be maintained with an annual refresher training. The training shall include information on the historical uses of asbestos, health effects, University policies, and site specific information, or how to obtain site specific information. The office of the APM provides training which meets the requirements for the two hour asbestos awareness training.

The two hour awareness training is mandatory for personnel who work in buildings with asbestos, and who may come in contact with ACBM during the normal course of activities, but who will not disturb or remove ACBM. This training does not qualify trainees to perform intentional disturbance or removal of ACBM on the University campus.

16 Hour O&M Worker Training
University employees who will perform disturbance and small scale removal of ACBM as a part of their duties shall receive a total of 16 hours of training targeted towards O&M workers. The training will be maintained with an annual 3 hour refresher course. In addition to the material

contained in the 2 hour asbestos training, the 16 hour training shall include specific information on work practices, regulatory compliance, respiratory protection, and safety issues. The office of the APM can arrange for certification training on a worker by worker basis or for groups of employees.The 16 hour training is mandatory for personnel who perform small scale, short duration disturbance of ACBM as a part of their duties. This training does not qualify trainees to perform large scale abatement of building materials or removal of asbestos for purposes other than normal Operations & Maintenance activities.

Asbestos Abatement Worker Training:
Because the University does not allow employees to perform asbestos abatement above the level of O&M work (small scale, short duration), there is no need for asbestos abatement worker training. Work of this level shall be performed exclusively by qualified asbestos abatement contractors who employ trained asbestos workers. The APM or a University representative shall confirm that the workers employed by any abatement contractor have received this level of training before abatement work on the campus begins.

Specific Protocols:

The University has developed and implemented specific policies for various activities which may impact ACBM, or for which the involvement of the Asbestos Program is required to meet statutory requirements. These policies should serve as a starting point for any activity which may disturb ACBM in University buildings. Adherence to these policies is required under the Northern Arizona NAU Personnel Policy Manual, section 5.03 (safety), and failure to adhere to the policies may be met with progressive disciplinary measures.

General Procedure for Reporting Unsafe Conditions
In accordance with the NAU Personnel Policy Manual, section 5.03 (safety), any University employee who witnesses what he/she believes to be unsafe or unauthorized disturbance of ACBM, observes asbestos or suspected asbestos debris, or is aware of damaged ACBM which creates an unsafe condition in any University building should immediately contact the office of the APM at 523-6435. The employee should provide the location and nature of the activities or unsafe conditions so that the APM can take appropriate action.

Project Managers
Specific procedures for project managers are outlined in the P&D Master Procedures manual. These procedures include instructions on how and when to request asbestos survey/work authorizations, the FS-13 Contractor Notification form for workplace hazards (See Attachment A, Forms). In general, Project Managers are responsible for notifying the office of the APM of any upcoming projects which may cause disturbance of existing building materials. Project Managers shall not attempt to independently determine the presence of asbestos, or to perform or contract asbestos abatement. Project Managers shall not assume that ACBM is not present in a work area, even if prior work performed in the same or adjacent areas did not encounter ACBM.

Building Managers

Specific procedures for building managers are contained in the Building Manager's Manual. This manual includes instructions on how and when to contact the APM to request authorization to disturb asbestos or to determine if a specific material contains asbestos.

Custodial Staff

Custodial staff members are often the first line of defense against asbestos hazards in University buildings. The participation of custodial staff in the University O&M program is the single most important factor in the success of the program. Although custodial workers are not authorized to disturb asbestos, they are intimately familiar with the building or area in which they work.

Custodial workers should make note of any changes in the condition of building materials in their work area over time and report any damage or deterioration to the department supervisor, building manager, or office of the APM. In addition, any improper or unauthorized disturbance of known or assumed ACBM which Custodial Staff members observe should be reported to the office of the APM.

Custodial workers should not attempt to clean up any debris which is suspected to contain asbestos. Any debris should be immediately reported to the office of the APM so that immediate appropriate cleaning may be performed and the potential for future debris generation may be assessed and mitigated, if warranted. If special cleaning procedures are deemed to be necessary for a specific area in order to alleviate a known asbestos exposure hazard, the APM may opt to design and implement special cleaning procedures for that area. In that case, the APM will provide proper training and equipment to the custodial staff so that the special cleaning procedures can be safely implemented.

Trades, Maintenance Staff, and Supervisors

As with custodial staff members, maintenance workers develop an intimate knowledge of buildings for which they are responsible. Maintenance workers shall make note of changes in the condition of building materials and report any deterioration, damage, unauthorized or improper disturbance of known or assumed ACBM which they witness.

Maintenance workers routinely perform work which has the potential to disturb ACBM. Prior to the start of any work which causes disturbance to any building material, maintenance workers should request a hazardous material inspection from the office of the APM. The inspection system is in place to prevent accidental disturbance of asbestos (and lead, pcb, or other hazards) and to provide up-to-date records of the location and quantity of asbestos materials, and of asbestos disturbance on the University campus.

To request an inspection, a worker, supervisor, dispatcher, project manager, or building manager may contact the office of the APM by telephone, or by accessing the online Hazardous Material Inspection Request on the Facility Services or EH&S web page. The requesting party will need to furnish the following information.

1) Name and contact information of requesting party.
2) Building name and number, and location of work.
3) Description and scope of work to be performed.

4) Description of materials which may be disturbed.
5) Anticipated start date of work to be performed.
6) Work Order number or Project reference number.

Following the submittal of the asbestos survey request, the APM will issue an inspection summary form which indicates how the work may proceed. If no ACBM will be impacted by the work, then the work may proceed as usual with no special controls and the form or forms provide documentation that workers and students are not being subjected to any hazards. If it is determined that ACBM is present and will be disturbed by the proposed work, then the work shall be conducted in accordance with the recommendations contained in the form(s).

O&M Asbestos Workers

O&M workers who perform asbestos removal or repair shall conform to the general procedures in the NIBS Asbestos O&M Work Practices Guidance Manual, Section III, Worker General Practices. This section of the NIBS manual defines general worker practices for preparing the work area, performing the work, performing cleanup of the work area, and disposing of any waste generated during the work activities. In addition, workers shall use material specific work practices described in the NIBS manual, or alternate methods which have been approved and validated by the APM.

Depending on the nature, frequency, and duration of work to be performed, the office of the APM, and/or the University Industrial Hygienist, may require personal air sampling to be conducted during the work. For this reason and those outlined in the "Work Practices" section (page 7), O&M workers shall not perform removal or repair of ACBM until the office of the APM has been notified of the project.

Special materials, tools, HEPA vacuums, and asbestos labels which are required for the removal or repair of ACBM are available through the office of the APM, who keeps a ready supply of the necessary supplies on-hand.

Dispatchers

Dispatchers are not directly involved with asbestos work on campus, but as part of the communication system between the client requesting work and the workers or department supervisors performing the work, they are an integral part of the asbestos control system. It is the responsibility of the dispatcher to ask if the requesting party has obtained an asbestos survey/work authorization permit already, and to forward this information to the workers or department responsible for performing the work. If an asbestos survey/work authorization permit has not been completed for the job, then it is the responsibility of the dispatcher to inform or remind the workers that the work may not commence until a survey/work authorization permit has been completed by the office of the APM.

Contractors and Consultants

Contractors and who work on the University campus must submit proof of asbestos training appropriate to the level of exposure/disturbance involved in the scheduled work. Copies of the appropriate training documents shall be submitted to the office of the APM for review prior to the start of work.

Any work involving contact with ACBM without disturbance requires two hour asbestos awareness training. The University can provide asbestos awareness training to contractor employees through the video training program which is currently in place.

Any work involving the collection of samples of ACBM requires EPA approved training to the level of an AHERA certified Building Inspector. Any work involving the small scale disturbance or repair of asbestos or abatement of larger quantities of ACBM, requires EPA approved training to the level of AHERA certified Asbestos Worker, and a supervisor trained to the level of an AHERA certified Contractor/Supervisor.

Contractors performing asbestos abatement, removal, or repair must furnish the following documents prior to the start of work on the University Campus.

a) An initial exposure assessment, or negative exposure assessment for the work to be performed, including analytical test results for air samples showing effectiveness of the work practices employed on prior jobs with similar scope of work. Initial exposure assessments shall be validated through personnel sampling at the time of the abatement project, and the results of the sampling shall be submitted with the project close-out documents
b) Proof of notification of work to the State of Arizona Dept. of Environmental Quality, as specified in 40 CFR 61.145.
c) MSDS forms for any hazardous chemicals which the contractor will use on campus.
d) Appropriate training documentation for any asbestos workers and supervisors.
e) Close out documents including record of the work performed; date of work, waste manifests, and re cords of shipment and receipt of waste at the disposal site.

Contractors performing asbestos abatement, removal, or repair shall conform to the requirements of the Northern Arizona University Technical Standards, Division 1, Section 01120, and Division 2, Section 02080, and all applicable OSHA and EPA requirements contained therein.

Consequences of non-compliance:

Compliance with the NAU Asbestos program is mandatory. This plan is the official mechanism for protecting employees and building occupants from potential exposure to asbestos, meeting local, state, and federal regulatory requirements for the management of asbestos in buildings, and protecting employees and the University as a whole from regulatory, financial, and civil liability which would arise from the improper handling of ACBM.

In accordance with the Northern Arizona University Personnel Policy Manual, University employees who intentionally violate the provisions of this O&M plan may be subject to the progressive disciplinary measures.

Important Contacts:

APM:	Scott Halle Building 77, Rm 123J P.O. Box 5850 Flagstaff, AZ 86011 Office phone: (928)-523-6435 Cell Phone: (928)-606-3788 Email: Scott.Halle@nau.edu
Industrial Hygienist and Alternate APM:	Jim Biddle Building 22, Rm 218 P.O. Box 5640 Flagstaff, AZ 86011 Office phone: (928)-523-6109 Email: James.Biddle@nau.edu

N.A.U. Fire and Police (Emergency): (928)-523-3000

ATTACHMENT A: FORMS

FS#13A

NORTHERN ARIZONA UNIVERSITY

NORTHERN ARIZONA UNIVERSITY: WORKPLACE HAZARD
HAZARDOUS BUILDING MATERIAL INSPECTION SUMMARY
INSPECTION REQUEST PHONE # 928-523-6435

PLEASE ALLOW UP TO TWO (2) WEEKS PROCESSING TIME FOR INSPECTIONS REQUIRING SAMPLE COLLECTION

PROJECT#:_____ REQUESTOR:_____ DATE:_____

PROJECT NAME:_____ AHERA CERTIFIED BLDG INSPECTOR:_____

INITIAL INSPECTION AND A FOLLOW-UP (IF REQUIRED) IS AT NO COST TO THE REQUESTOR.
SAMPLE ANALYSIS FEES MAY BE CHARGED, AT THE STANDARD RATE TO THE CLIENT DEPARTMENT OR PROJECT

This inspection does not waive the supervisor/contractor responsibility to provide adequate worker training/ppe

The Requestor is responsible for submitting an inspection request with adequate time prior to commencing work to arrange and complete any necessary hazard abatement activities BEFORE other work begins. Inspection request form is located on the Engineering/Inspections website. Supervisors shall make this form or the information contained within it available for review by all employees present at the work site.

	MATERIAL SUMMARY	ASBESTOS	LEAD	PCB	ABATEMENT/SPECIAL PRACTICES?
	Ceiling Materials	Y–YES N–NO A–ASSUMED P–PEND NO NA–NOT APPLICABLE			
	Wall Materials				
	Flooring Materials				
	Thermal System Insulation (TSI) Materials				
	Other Materials				
	COMMENTS/SPECIAL REQUIREMENTS				
	If any materials not listed above are scheduled for disturbance or are discovered to be in a disturbed state, contact the Material Safety Official at 928-523-6435 for guidance or a supplemental inspection before proceeding with any additional work.				

FS#13

NORTHERN ARIZONA UNIVERSITY

NORTHERN ARIZONA UNIVERSITY: WORKPLACE HAZARD
BLANKET NOTIFICATION FOR CONTRACTORS/SUBCONTRACTORS (FS-13)
INSPECTION REQUEST PHONE # 928-523-6435

PLEASE ALLOW UP TO TWO (2) WEEKS PROCESSING TIME FOR INSPECTIONS REQUIRING SAMPLE COLLECTION

PROJECT #:_____ REQUESTOR:_____ DATE:_____

PROJECT NAME:_____ AUTHORIZED PREPARER:_____

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HAZARD TYPE

Asbestos/Lead/PCB ☐ **Radiation** ☐ **Biological** ☐ **Chemical** ☐ **Other** ☐

The purpose of this form is to notify Contractors and Subcontractors and their employees working at Northern Arizona University of known or anticipated workplace hazards. NAU maintains comprehensive material/safety inspections and safety programs for campus buildings. Test results and safety programs are available for review in the NAU offices of Materials Safety or Environmental Health and Safety. The following known and assumed hazards have been identified to be present in the work area located in Building(s)_____ Room/Area. _____

NAU is responsible for informing you of the presence of hazards in your project work area on the NAU campus. If you encounter any previously unidentified hazards, stop all work immediately and contact the NAU Project Manager or Materials Safety Official (928-523-6435). By law, Employers must provide adequate training and protection for employees who will be exposed to hazards including those in this notification. The responsible party signing below agrees that it is the responsibility of the Contractor or Subcontractor to be knowledgeable of and comply with all applicable local, state, and federal safety regulations, and with university policies related to the hazards detailed in this form.

Your signature below acknowledges that you have received notice from NAU that hazardous materials or conditions are or may be present in your work area(s), and that you agree to fully assume the responsibility for ensuring the safety of yourself and your employees, which includes ensuring that you comply with all applicable local, state, and federal laws, and with university policies governing hazardous materials or conditions.

If you have any questions, please contact the NAU Material Safety Official at 928-523-6435.

COMPANY NAME:	
NAME OF RESPONSIBLE PARTY:	**TITLE:**
SIGNATURE:	**DATE:**

No work shall be authorized nor shall it commence prior to completion and return of Form FS#13 by the vendor and return of the completed form to the NAU Project Manager or the party authorizing the work.

Respiratory Protection

Respiratory Protection Program for Asbestos O&M Workers (OSHA 29 CFR 1910.134)

Purpose

This respirator program lays out standard policies and procedures concerning the use of respirators for asbestos O&M workers employed by Northern Arizona University. All asbestos O&M workers who are required to wear a respirator in the course of performing their duties are included within the scope of this program and must follow its' requirements. **Employees who are found to be in violation of University policy will face Progressive disciplinary actions defined in the NAU Personnel Policy Manual, section 5.19.**

This program is in accordance with the requirements of OSHA 29 CFR 1910.134.

Program Administration

The NAU Asbestos Program Manager (APM) is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure the success of this program. The APM will develop written detailed instructions covering each of the basic elements in this program, and is authorized to amend these instructions.

This respirator program for asbestos O&M workers will be administered and overseen by the Asbestos Program Manager, or his/her designated representative. Supervisors will also bear responsibility for enforcing the respirator program in their work areas. Any changes to this program must be approved by the Program Administrator.

The Asbestos Program Manager may designate a Program Administrator to execute the elements of this program: The Program Administrator is _____.

Respirator Selection

Respirators are designed to protect against specific air contaminants. Use of an improper respirator may reduce or eliminate the intended protection, resulting in injury or illness.

Employees will be assigned a respirator which is appropriate for use in asbestos O&M activities. Application of the National Institute of Occupational Safety and Health (NIOSH) Respirator Decision Logic Guide can be used as one resource to determine the type of respiratory protection. Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection and use. All respirators used for O&M activities at Northern Arizona University shall be NIOSH-certified respirators. Employees may not substitute other respirators.

Employees may wear their own respirator only after the Program Administrator has determined that the respirator is safe for the anticipated conditions of use and will not in itself create additional hazards. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in **Appendix A**. Voluntary respirator users must be medically able to use the respirator and ensure that the respirator is cleaned, stored, and maintained so that its' use does not present a health hazard to the user.

New or modified work processes will be evaluated as necessary for the need for respiratory protection. Should information indicate that respiratory protection is required, it will be made available immediately to all affected employees and such employees will be included within the scope of the respiratory protection program.

Fit Testing

All employees who are required to wear a respirator with a negative or positive pressure, tight-fitting face piece will be fit tested prior to actual use. Employees will be fit tested with the same make, model, style and size of respirator that they will use. Employees will be re-tested if they, their supervisor, the Program Administrator, or physician notes any changes in their physical appearance which may affect the fit of the respirator. Such changes include, but are not limited to facial scarring, dental changes, surgery, or obvious weight change. Additionally, employees who wear a tight-fitting facepiece respirator will be fit tested on an annual basis.

If, after passing a fit test, the employee notifies the supervisor, physician, or Program Administrator that the fit is unacceptable, the employee will be given a reasonable opportunity to select a different respirator and be re-tested.

Damaged respirators must be repaired or replaced by the Program Administrator or other qualified person, and only using manufacturer's parts.

Employee Training

NAU will provide all affected employees with the training necessary to safely wear and use their assigned respirator(s). Training will be provided prior to an employee being assigned to wear a respirator. NAU is committed to ensuring that the training is comprehensive and easy to understand. Training will be provided on the following subjects:

- The respiratory hazards of asbestos fibers to which the employee may be exposed;
- Why respirators are necessary and how improper fit, use or care can compromise the effectiveness;
- The limitations and capabilities of the respirators;
- How to use respirators in emergency situations;
- How to inspect, put on and remove, use and check the seal of the respirator;
- Maintenance and storage procedures;
- How to recognize medical signs and symptoms that may limit the effective use of respirators;
- The general requirements of the OSHA Respiratory Protection Standard (29 CFR 1910.134).

For those employees who wear respirators voluntarily, basic information, found in **Appendix A** of this program, will be provided as training material.

Respirator Use

Proper use of respirators is essential for the protection of employee health and safety. As previously mentioned, the improper use of a respirator may have serious, potentially fatal consequences. In order to assure employee safety, basic rules of respirator use must be followed.

Employees who wear respirators with tight-fitting facepieces must not have facial hair, wear glasses, or otherwise have any condition that interferes with the face-to-facepiece seal or valve function. Additionally, employees must perform a user seal check, per the manufacturer's instructions, each time they put on the respirator.

Employees must leave the respirator use area to check or clean their respirator if they detect vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece. Or to replace the respirator or the filter, cartridge, or canister elements.

Note: For work within atmospheres which are immediately dangerous to life and health (IDLH), special procedures may have been established and must be followed. Contact the Program Administrator before entering these spaces.

Inspection, Cleaning, Maintenance and Storage

NAU and those employees who wear respirators share responsibility in ensuring that all respirators are cleaned, disinfected, stored, inspected and repaired on a regular basis. NAU will provide respirators that are clean, sanitary and in good working condition and it is essential that they be

maintained that way.

Respirators must be cleaned and disinfected as follows:

- Respirators used exclusively by one employee shall be cleaned and disinfected after each use.
- Respirators should not be shared, or must be cleaned and disinfected before being worn by different individuals, and after each use.
- Respirators for emergency use shall be cleaned and disinfected after each use. Respirators used for fit testing shall be cleaned and disinfected after each use.
- Respirators shall be stored in a respirator storage bag or other acceptable container to prevent contamination during periods of non-use.

All respirators must be stored in the provided container/bag in order to protect them from damage or contamination. Additionally, all respirators must be inspected for damage during cleaning and before each use. Any damaged respirator must be removed from service immediately.

Work Area Surveillance

Appropriate surveillance of work area conditions and degree of employee exposure or stress must be maintained. During safety audits and at other opportunities the Safety Officer will make inspections of areas where respirators are used to ensure compliance with the respiratory protection program.

Program Evaluation

This written respiratory protection program will be evaluated as necessary by the Program Administrator, to assure that proper respiratory protection is being provided to all affected employees. Any employee who has a concern about the respiratory hazards to which they are exposed, or who has a question about the effectiveness of the respirator he/she is using is encouraged to bring it to the attention of the Program Administrator.

Physical Fitness Determination for Users

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and the workplace conditions in which the respirator is used, and the medical status of the employee. In order to ensure that the wearing of a respirator will not create a potential hazard, all employees who wear a respirator will be medically evaluated. The evaluation will take place prior to the employee being fit tested or required to wear a respirator. The medical evaluation will be provided at no cost to the employee. Employees may be re-evaluated at the request of the physician, the employer, or if there is significant change in their health status. Employees should also be re- evaluated if the employee reports medical signs or symptoms that are related to the ability to use a respirator and if information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates the need. In addition, re-evaluation is

necessary if changes occur in workplace conditions that may result in a substantial increase in physiological burden placed on an employee. Some examples that may warrant re-evaluation may include but are not limited to, physical work effort, protective clothing, and temperature.

The Occupational Safety and Health Administration (OSHA) revised its' Respiratory Protection Standard (29 CFR 1910.134) in 1998. One major revision affecting medical evaluations in this category involves the completion of a medical questionnaire. Employees should complete a questionnaire similar to the one specified in Appendix C of the OSHA Standard prior to the evaluation by the physician or other licensed health care professional. This can be referenced in **Appendix B** of this program manual.

APPENDIX A

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust will not protect you against gases, vapors, nanoparticles, fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

APPENDIX B

OSHA RESPIRATOR
MEDICAL EVALUATION QUESTIONNAIRE

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination. To the

employee:

Can you read? (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:_____

2. Your name:_____

3. Your age (to nearest year):_____

4. Sex (circle one): Male/Female

5. Your height: _____ ft. _____ in.

6. Your weight: _____ lbs.

7. Your job title:_____

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this

questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):
a. _____ N, R, or P disposable respirator (filter-mask, non- cartridge type only).

b. __Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s):_____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you **currently** smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you **ever had** any of the following conditions?

a. Seizures (fits): Yes/No
b. Diabetes (sugar disease): Yes/No
c. Allergic reactions that interfere with your breathing: Yes/No d. Claustrophobia (fear of closed-in places): Yes/No
e. Trouble smelling odors: Yes/No

3. Have you **ever had** any of the following pulmonary or lung problems?

a. Asbestosis: Yes/No b. Asthma: Yes/No
c. Chronic bronchitis: Yes/No
d. Emphysema: Yes/No e. Pneumonia:Yes/No
f. Tuberculosis: Yes/No g. Silicosis: Yes/No
h. Pneumothorax (collapsed lung): Yes/No
i. Lung cancer: Yes/No
j. Broken ribs: Yes/No
k. Any chest injuries or surgeries: Yes/No
l. Any other lung problem that you've been told about: Yes/No

4. Do you **currently** have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath: Yes/No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
d. Have to stop for breath when walking at your own pace on level ground: Yes/No
e. Shortness of breath when washing or dressing yourself: Yes/No f. Shortness of breath that interferes with your job: Yes/No
g. Coughing that produces phlegm (thick sputum): Yes/No h. Coughing that wakes you early in the morning: Yes/No
i. Coughing that occurs mostly when you are lying down: Yes/No j. Coughing up blood in the last month: Yes/No

k. Wheezing: Yes/No
l. Wheezing that interferes with your job: Yes/No m. Chest pain when you breathe deeply: Yes/No
n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you **ever had** any of the following cardiovascular or heart problems?

a. Heart attack: Yes/No b. Stroke: Yes/No
c. Angina: Yes/No
d. Heart failure: Yes/No
e. Swelling in your legs or feet (not caused by walking): Yes/No f. Heart arrhythmia (heart beating irregularly): Yes/No
g. High blood pressure: Yes/No
h. Any other heart problem that you've been told about: Yes/No

6. Have you **ever had** any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest: Yes/No
b. Pain or tightness in your chest during physical activity: Yes/No
c. Pain or tightness in your chest that interferes with your job: Yes/No
d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
e. Heartburn or indigestion that is not related to eating: Yes/ No
f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you **currently** take medication for any of the following problems?

a. Breathing or lung problems: Yes/No b. Heart trouble: Yes/No
c. Blood pressure: Yes/No d. Seizures (fits): Yes/No

8. If you've used a respirator, have you **ever had** any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

a. Eye irritation: Yes/No
b. Skin allergies or rashes: Yes/No c. Anxiety: Yes/No
d. General weakness or fatigue: Yes/No
e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you **ever lost** vision in either eye (temporarily or permanently): Yes/No

11. Do you **currently** have any of the following vision problems?

a. Wear contact lenses: Yes/No
b. Wear glasses: Yes/No
c. Color blind: Yes/No
d. Any other eye or vision problem: Yes/No

12. Have you **ever had** an injury to your ears, including a broken eardrum: Yes/No

13. Do you **currently** have any of the following hearing problems?

a. Difficulty hearing: Yes/No
b. Wear a hearing aid: Yes/No
c. Any other hearing or ear problem: Yes/No

14. Have you **ever had** a back injury: Yes/No

15. Do you **currently** have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet: Yes/No b. Back pain: Yes/No
c. Difficulty fully moving your arms and legs: Yes/No
d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
e. Difficulty fully moving your head up or down: Yes/No
f. Difficulty fully moving your head side to side: Yes/No
g. Difficulty bending at your knees: Yes/No h. Difficulty squatting to the ground: Yes/No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them:_____

_____

_____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

a. Asbestos: Yes/No
b. Silica (**e.g.**, in sandblasting): Yes/No

c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No d. Beryllium: Yes/No
e. Aluminum: Yes/No
f. Coal (for example, mining): Yes/No g. Iron: Yes/No
h. Tin: Yes/No
i. Dusty environments: Yes/No
j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures:_____

_____

_____

4. List any second jobs or side businesses you have: _____

_____

5. List your previous occupations: _____

_____

6. List your current and previous hobbies: _____

_____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them:_____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: Yes/No
b. Canisters (for example, gas masks): Yes/No c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): Yes/No
b. Emergency rescue only: Yes/No
c. Less than 5 hours **per week:** Yes/No
d. Less than 2 hours **per day:** Yes/No
e. 2 to 4 hours per day: Yes/No
f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. **Light** (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:__hrs._____mins.

Examples of a light work effort are **sitting** while writing, typing, drafting, or performing light assembly work; or **standing** while operating a drill press (1-3 lbs.) or controlling machines.

b. **Moderate** (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:__hrs._____mins.

Examples of moderate work effort are **sitting** while nailing or filing; **driving** a truck or bus in urban traffic; **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. **Heavy** (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:__hrs._____mins.

Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; **shoveling; standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment:_____

_____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

_____

_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

_____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance:_____ Estimated maximum exposure level per shift:_____

Duration of exposure per shift:_____ Name of the second toxic substance:_____ Estimated maximum exposure level per shift:_____ Duration of exposure per shift:_____ Name of the third toxic substance:_____

Estimated maximum exposure level per shift:_____ Duration of exposure per shift:_____

The name of any other toxic substances that you'll be exposed to while using your respirator:

_____

_____

_____

_____

_____

_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):