SUBJECT: **Occupational Exposure to Asbestos**

REGULATORY STANDARD:
Title 8 of the California Code of Regulations, Section 5208, Construction
Title 8 of the California Code of Regulations, Section 1529, General Industry
Title 8 of the California Code of Regulations, Section 5194, hazard Communication
Title 8 of the California Code of Regulations, Section 3380, Personal Protective devices
OSHA - 29 CFR 1910.1028, Asbestos
OSHA - 29 CFR 1910.1000, Air Contaminants
OSHA - 29 CFR 1910.1200, Hazard Communication
OSHA - 29 CFR 1910.132-138, Personal Protective Equipment (PPE)

BASIS: The purpose of this program is to establish guidelines and procedures in the operations and maintenance of asbestos containing materials at Sunbelt Controls to protect all employees, contractors, visitors and vendors from potential health hazards of asbestos related diseases. This Program applies to all buildings and structures owned by Sunbelt Controls, to all employees and sub-contractors of Sunbelt Controls, to occupants of Sunbelt Controls buildings and to external organizations that may come into contact with or disturb asbestos-containing material in Sunbelt Controls buildings. The Program applies to routine work during which an employee might encounter asbestos as well as work undertaken to repair or remove asbestos-containing material.

GENERAL: Sunbelt Controls will ensure that all potential sources of Asbestos within our facility(s) or host employers are evaluated. This standard practice instruction is intended to address comprehensively the issues of; evaluating and identifying potential sources of Asbestos, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

Sunbelt Controls does not perform repairs, maintenance or removal of asbestos containing materials. Sunbelt Controls will not work in areas designated as Class 1, 2 or 3. Only qualified employees shall be involved in any asbestos repairs, maintenance or removal operations.

All unqualified employees shall be protected from exposure to asbestos fibers by isolating and controlling access to all affected areas during asbestos work.

If outside contractors are used, the company shall ensure all contractor employees have been properly trained and have been issued proper equipment and protective gear.
Should it be determined that an area exists which exceeds 1 fiber per cubic centimeter in 30 minutes or an 8 hour time-weighted-average of .1 fibers per cubic centimeter that area shall be deemed a regulated area. A written mitigation plan will be

developed and implemented. All personnel that would need to work in or around the area will be covered by said plan.

RESPONSIBILITY: The Corporate Risk Manager for Sunbelt Controls is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure success of the program. The Safety Officer is the sole person authorized to amend these instructions and is authorized to halt any operation of the company where there is danger of serious personal injury.

1.0 Written Program – Sunbelt Controls will review and evaluate this standard practice instruction in accordance with the following:

- When changes occur to governing regulatory sources that require revision.
- When changes occur to related company procedures that require revision.
- When facility operational changes occur that require revision.
- When there is an accident or close-call that relates to this area of safety
- Anytime the procedures fail.

Effective implementation of this program requires support from all levels of management. This written program will be communicated to all personnel that are affected b it. It encompasses the total workplace, regardless of all the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives

2.0 Related Programs – The following safety programs are to be used in consonance with this program:

Title 8 of the California Code of Regulations, Section 5208, General Insdutry
Title 8 of the California Code of Regulations, Section 1529, Construction
Title 8 of the California Code of Regulations, Section 5194, hazard Communication
Title 8 of the California Code of Regulations, Section 3380, Personal Protective devices

- **OSHA-29 CFR 1910.1000 Air Contaminants**
- **OSHA-29 CFR 1910.1200 Hazard Communication**
- **OSHA-29 CFR 1910.132-138 Personal Protective Equipment**

3.0 Hazard Overview – Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. Depending on the chemical composition, fibers may range in texture from course to silky. The properties that make asbestos fibers so valuable to the industry are its high-tensile strength, flexibility, heat and chemical resistance and good frictional properties. Asbestos is a common, naturally occurring group of fibrous minerals. Asbestos fibers have been used in a variety of building materials however Sunbelt Controls takes an aggressive effort to use non-asbestos containing materials in new construction and renovation projects. Generally, most asbestos is found in pipe insulation, doors, textured paints and plasters, structural fireproofing and floor tiles. Friable asbestos (that is material that contains more than

0.1% asbestos by weight and can be crumbled by hand is a potential hazard because it can release fibers into the air if damaged.

4.0 Health Affects – Asbestos fibers enter the body through inhalation of airborne particles or by ingestion and can become embedded in the tissues of respiratory or digestive systems. Years of exposure to asbestos can cause numerous disabling or fatal diseases. Among these diseases are asbestosis, an emphysema-like condition; lung cancer; mesothelioma, a cancerous tumor that spreads rapidly in the cells of membranes covering the lungs and body organs; and gastrointestinal cancer. Routes of entry into the body are primarily by inhalation.

4.1 Long and Short Term Exposure:

Long term exposure to airborne asbestos is necessary for chronic lung disease. Asbestos-related cancers tend to result from substantial long-term exposure however mesothelioma may result from much smaller exposures to asbestos.

5.0 OSHA Overview – Since 1972 OSHA has regulated asbestos exposure in general industry thereby causing a significant decline in the use of asbestos-containing materials. The OSHA standards are designed to protect workers who may be exposed to asbestos-containing materials. In addition, OSHA standards also include provisions that apply to workers performing brake and clutch repair and to those doing housekeeping in buildings and facilities where asbestos-containing materials exist.

6.0 Management Responsibilities

- Ensure all Asbestos Containing Material is identified and labeled
- Ensure monitoring of affected work area takes place. If results obtained indicate an exposure greater than the permissible exposure limit or short term exposure limits ensure areas are suitably controlled as a regulated zone
- Ensure training is effective for authorized employees
- Conduct medical surveillance of affected employees
- Establish engineering controls for all work with asbestos containing material
- Provide adequate and proper equipment and personal protective gear
- Ensure proper disposal of all asbestos containing material

7.0 Supervisor Responsibilities

- Qualified supervisors shall provide effective on-site management during work with asbestos containing material
- Supervisors will notify the Safety Department immediately upon discovering damaged asbestos material

8.0 Qualified Employees

- Qualified employees must follow exact procedures for repair or removal of asbestos containing material, including proper use of containment equipment, clean up equipment and personal protective gear.
- Unqualified employees are to stay clear of all asbestos work areas and report any damaged asbestos to their supervisor(s).

9.0 Hazard Control

9.1 **Engineering Controls** – Engineering controls include the use of enclosures such as monitoring equipment, glove bags, tenting, negative pressure work areas, HEPA filters, controlled vacuums, water misters and other equipment to ensure containment and clean up of asbestos work areas

9.2 **Administrative Controls** – All qualified workers shall be issued proper written procedures and management authorizations required for work involving asbestos containing material

9.3 **Personal Protective Equipment** – All qualified workers shall be issued proper personal protective equipment such as respirators, disposable coveralls, gloves, face shields, head covers, etc. Cost of PPE is to be borne by Sunbelt Controls. Written procedures and management authorizations are required for all work involving asbestos containing material.

9.3.1 PPE must be used at all times when under the following circumstances:

- Work Practice Controls
- Work Operations
- To Reduce exposure
- Emergency entrance into areas

9.3.2 Respirator Requirements

Asbestos Concentration	Minimum Respirator Required
Not to exceed 1 fibers/cc (10XPEL)	Half-mask air-purifying respirator equipped with high efficiency filters.
Not to exceed 5 fibers/cc (50XPEL)	Full face piece air-purifying respirator equipped with high efficiency filters
Not to exceed 10 fibers/cc (100XPEL)	1. Air supplied respirator with continuous flow or pressure-demand regulator. 2. Any powered air purifying respirator equipped with high efficiency filters.
Not to exceed 100 fibers/cc (1000XPEL)	Full face piece supplied air respirator operated in pressure demand mode.
Over 100 fibers/cc or unknown concentrations (>1000XPEL)	Full face piece supplied air respirator operated in pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus.

10.0 Asbestos Work Categories

10.1 Category 1 – Work includes the installation or removal of non-friable asbestos in which the asbestos fiber is locked in a binder such as cement, vinyl or asphalt which holds the material together.

10.2 Category 2 – Involves work with friable asbestos that is of short duration in situations which create low levels of airborne asbestos. Examples of Category 2 work are enclosure of friable asbestos, application of tape or sealant to asbestos containing pipe insulation and minor removal of friable asbestos and minor installation, maintenance or repair work above false ceilings where sprayed asbestos fireproofing is present on beams.

10.3 Category 3 – Work involves possible exposure to friable asbestos over long periods of time or work that generates high levels of asbestos. Included in Category 3 work are removal projects where relatively large amounts of asbestos are removed from a building including removal of friable asbestos from structural material, cleaning or removal of heating or air handling equipment that has been insulated with asbestos. Also included in Category 3 work is cutting or grinding of asbestos-containing materials using power tools.

10.4 General Rules:

- When in doubt, treat all material as containing asbestos and comply with all applicable rules and regulations and protective measures.
- **Certified Employees –** all Asbestos Containing Material (ACM) will be handled b certified and licensed asbestos abatement personnel. The friability of the ACM will dictate the type of removal / maintenance required.
- **Uncertified Employees –** employees who are uncertified and unlicensed will not handle any ACM > 1%. This will include encapsulation projects, renovation / removal and/or demolition of any type of structure. This will prevent potential for accidental exposure from the mishandling of any ACM.
- **Suspect Material –** when an uncertified, unlicensed employee questions whether they may be handling suspect ACM the employee will immediately contact their supervisor. The employee shall not resume working at the site until the area has been checked to verify the material is not ACM.
- **Reporting Suspect Materials –** any employee who discovers ACM or suspect ACM in damaged or poor condition should report it to their supervisor so the identified material is repaired.
- **Restricted Areas –** uncertified, unlicensed employees will not cross over a barrier / containment area where asbestos projects are in progress.

Medical Examinations – Employees assigned to asbestos removal will be given medical examinations at Company expense in compliance with OSHA 29 CFR 1910.1028, OSHA 29 CFR 1926.1101 and OSHA 40 CFR 763 - Subpart G.Cal OSHA, Title 8 of the California Code of Regulations, Section 5208, Construction, Title 8 of the California Code of Regulations, Section 1529

11.0

- Within 30 days of first employment or assignment to a job exposing the employee to asbestos containing material
- Annually
- Within 30-days of termination of employment
- Medical examination for employees assigned to asbestos removal will include:
  - **Medical and work history with special emphasis directed to symptoms of the respiratory system, cardiovascular system and digestive tract.**
  - **Title 8 of the California Code of Regulations, Section 1529, Appendix DMedical questionnaire contained in OSHA 29 CFR 1926.1101**
- **A physical examination including a chest roentgenogram and pulmonary function test that includes measurement of the employees forced vital capacity and expiratory volume**

11.1 No employee shall be assigned to tasks requiring the use of respirators if an examining physician determines the employee will be unable to function normally while using it or that the employee might otherwise be impaired

11.2 Records of all physical examinations performed for asbestos work related activities will be maintained permanently by the Company.

12.0 Asbestos Inventory - Sunbelt Controls has conducted surveys and prepared a written inventory of the type and locations of asbestos-containing material to:

12.1 Allow for periodic condition inspections

12.2 Allow for maintenance and repair of damaged asbestos

12.3 For each building the inventor contains the following information:
- type of asbestos-containing material i.e. sprayed fireproofing, texture coating or thermal insulation
- the location of the material
- when it has been sampled, the type and percentage of asbestos present

12.4 Also included in the survey information are sampling results showing the absence of asbestos in material which might be mistaken for an asbestos-containing material

13.0 Asbestos Identification – An asbestos identification system will be used to alert people to the presence of asbestos. Asbestos is identified by tags, stickers, pipe labels, signs and other high visibility means. Where feasible, stickers indicate the presence of asbestos in thermal insulation, in asbestos board and tiles and in other locations.

Warnings may also be placed near the entrances of rooms—particularly mechanical rooms where unusually large amounts of asbestos may be present.

13.1 Monitoring of Areas

A qualified person will perform employee exposure monitoring for asbestos fiber exposure. These samples will be designated as personal samples and will consist of one r more samples collected in the breathing zone of a designated employee in each job area and job classification. Samples will be collected to evaluate 30-minute Short-Term Exposure Limits (STEL) and 8-hour Time Weight Averages (TWA) limits.

Daily samples will be collected on representative personnel to determine the STEL. Operations most likely to produce excursions above the STEL, such as removal operations, will be chosen

TWA evaluations will be conducted daily in each work area and on a representative number of employees at each operation. At no time will employees be allowed to work in areas with asbestos concentrations in excess of 1 fiber cubic centimeter in 30-minutes without PPE.

Air samples will be collected using battery powered and electric pumps attached by tygon tubing to 25-mm MCE filters. The sample collection and analysis will be by NIOSH method 7400 for asbestos.

Personal samples will be used to determine the level of respirator protection required.

14.0 Inspection of Suspected ACM – Inspection of the condition of friable asbestos will be integrated into the Maintenance Department routine inspection program. Periodic inspections and reports on the status of facilities and equipment in Sunbelt Controls buildings are produced to note damage to asbestos that might result in release of asbestos. When damaged ACM is discovered a work order will be issued to initiate the assessment / remediation as required.

15.0 Access Control – Access to mechanical and electrical rooms, service shafts, tunnels and other locations is to be restricted where asbestos may be present in unusually large amounts and where other hazards may also be present. Such areas are locked and accessible only to authorized personnel. Where spray asbestos-containing fireproofing is present in a building above a false ceiling, access to the space is restricted to Maintenance Department employees, Communications Services or authorized contractors.

16.0 Repair and Maintenance of ACM

16.1 Reporting Suspect ACM – Should an employee or contractor encounter material which is not identified and is not listed in the Asbestos Inventory and which might reasonably be asbestos, the person will stop any work which could create airborne asbestos and report the discovery to a supervisor. Where it is determined that friable asbestos-containing material is in a condition that could likely lead to inhalation exposure, the supervisor will immediately limit access to

the location and initiate repairs, removal or encapsulation. Where there is reasonable doubt about the composition of a friable material, it will be treated as asbestos until testing demonstrates that asbestos is present at levels below 1%.

16.2 **Authorized Personnel** – Cleanup and repair of asbestos-containing material will only be carried out by the appropriate clean up procedure by employees or contractors who have been properly trained.

16.3 **Routine Work in the Presence of ACM –** When routine work is to take place in an area where asbestos is present or when the work might disturb friable asbestos, employees will be informed of the potential for exposure through the notation on the wok order, if upon reviewing the work situation, the employee believes that normal work practices do not provide an adequate measure of safety, the employee will report these concerns to the supervisor. The supervisor will review the work situation and authorize any required additional precautions.

16.4 **Hazard Notification –** All employees, visitors, vendors and contractors will be notified in advance when work involving asbestos is to be carried out in any area of Sunbelt Controls buildings which they occupy.

17.0 **Training – All** Sunbelt Controls employees who remove, repair or work around friable asbestos and those whose work might disturb friable asbestos-containing material and be exposed to levels above the permissible exposure limit will be trained to carry out their work without endangering themselves, their coworkers or other building occupants. This training is to be documented and performed prior to working inside these areas and at annual intervals thereafter.

17.1 **Level 1 Training** – all affected Maintenance Department employees who do not receive levels 2 or 3 training will receive Level 1 training which will acquaint them with:

- the types, properties and uses of asbestos
- ways to recognize asbestos
- the hazards of asbestos fiber inhalation and ingestion
- the Sunbelt Controls Asbestos Inventory and Asbestos Identification program
- State and Federal regulations regarding work with asbestos and disposal of asbestos containing waste
- refresher training will be provided every 2nd year; only those with Level 1 training will be allowed to carry out or supervise Category 1 asbestos work; anyone exposed to greater than the permissible exposure limit will have training annually

17.2 **Level 2 Training** – all Sunbelt Controls employees who conduct or may be expected to conduct Category type 2 or 3 work will receive training in:

- All Level 1 topics
- Ways to recognize and avoid damage to asbestos-containing material
- The use, fitting, limitations, care and disposal of protective equipment chosen for specific assignment
- Asbestos containment and ventilation during removal

- Wet and dry clean up procedures
- Refresher training will be provided annually except for actual asbestos removal, only those with Level 2 training will be allowed to carry out or supervise Category 2 asbestos work

17.3 **Level 3 Training** – Level 3 training will be provided for insulators and others who are authorized to remove friable asbestos and for those who supervise asbestos removal work that is performed by either Sunbelt Controls employees or external contractors. Level 3 training provides practical hands-on experience in all phases of small and medium scale asbestos removal. Those who will carry out small scale asbestos removal work, will receive additional on-the-job training working with experienced asbestos workers

Retraining

17.4 Retraining shall be provided for all affected employees as a minimum whenever:
- Annually
- Thee is a change in job assignments
- There is a change in PPE
- There is a change in equipment that presents a new hazard
- There is a change in processes that presents a new hazard
- Their work takes them into hazardous or regulated area
- There is a change in asbestos safety procedure
- Safety procedure fails resulting in a near miss, illness or injury

17.5 **Additional Retraining** – additional retraining shall also be conducted whenever a periodic inspection reveals or whenever this employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge of known hazards or use of equipment or procedures

17.6 The retraining shall re-establish employee proficiency and introduce new equipment or revised control methods and procedures as necessary

17.7 **Certification -** This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

18.0 Contractor Safety

18.1 **ACM Removal Work** – Major asbestos removal is normally contracted to external firms who specialize in asbestos removal work. Sunbelt Controls requires that all such work be carried out in accordance with the requirements established by California regulations. At all such projects the contractor will ensure that cleanup is properly completed and that all asbestos and asbestos contaminated material is collected, and disposed of in accordance with the California regulations. The contractor will be required to submit air testing results to demonstrate that the cleanup has been carried out properly and the area can be reoccupied safely.

18.2 **Other Work** – Sunbelt Controls often employs contractors to service equipment such as elevators, telephones, refrigeration and air conditioning equipment and to carry out other construction and renovation projects. When contractors are required to work in areas where asbestos is present or there is a possibility of disrupting friable asbestos, Sunbelt Controls will provide:

- Notification of the known locations and types of asbestos present (or suspected to be present) in the area where the contractor will work
- Information on Sunbelt Controls asbestos labeling system.

19.3 Sunbelt Controls requires that contractors:

- Notify the Safety Department___ before carrying out tasks which could potentially create asbestos-containing dust.
- Follow work practices that reduce to the maximum extent practical, the creation of airborne asbestos dust and which meet the asbestos safety standards set by California regulations.
- Immediately report to the Safety Department when damage occurs to asbestos-containing materials.
- Employ only workers who have been trained in asbestos safety.

19.0 Employee Notification and Signage – This employer shall post signs at entrances to regulated areas. The signs shall bear the following legend:

19.1 **Area Hazard** – This employer shall ensure that labels or other appropriate forms of warning are provided for areas containing Asbestos which could present a health hazard within the workplace.

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

20. 2 **Respirator Usage** – Where the use of respirators and protective clothing is required in the regulated area under this section, the warning signs shall include the following:

DANGER
ASBESTOS
RESPIRATORS AND PROTECTION CLOTHING
ARE REQUIRED IN THIS AREA

20.3 **Containers** – This employer shall ensure that labels or other appropriate forms of warning are provided for containers of Asbestos within the workplace. There is no requirement to label pipes. The labels shall comply with the requirements of **Title 8 of the California Code of Regulations, Section 5194** 29 CFR 1910.1200 (Hazard Communication Standard) and in addition shall include the following legend:

DANGER
CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

20.0 Spill and Leak Procedures – Spills and leaks will be under the supervision of the Safety Department. The following apply:

21.1 Persons not wearing protective equipment and clothing will be restricted from areas of spills or leaks until cleanup has been completed.

21.2 **Emergency Containment** – Asbestos exposure can be hazardous. Only authorized and trained emergency response personnel should attempt containment. If you are not trained in containment of asbestos, evacuate the area in accordance with established procedures. If asbestos is spilled or leaked, the following steps as a minimum should be taken.
- **Try not to "loft" dust.**
- **Notify co-workers, and evacuate the area.**
- **If possible, stop wind, or minimize air flow over ACM dusts.**
- **Report to the Safety Department, and provide notification.**

21.0 Emergency First Aid Procedures – In the event of an emergency, institute first aid procedures and send for first aid or medical assistance in accordance with local procedures. Dial the Safety Department (9-1-1 or detail other) for emergency response personnel.

21.1 **Eye Exposure** – Wash immediately with large amounts of water for at least 15 minutes lifting the lower and upper lids occasionally, get medical attention as soon as possible.

21.2 **Skin Exposure** – Immediately flush with copious amounts of water. Remove any clothing contaminated, and flush exposed skin areas, get medical attention as soon as possible.

21.3 **Swallowing Exposure** – If Asbestos has been swallowed and the victim is conscious, call for medical assistance or a doctor immediately.

21.4 **Respiratory Exposure** – Get the victim to open, fresh air immediately. Keep the victim warm and at rest. Get medical attention as soon as possible.

22.0 Asbestos Notification Procedures

22.1 Discovering damaged asbestos. When asbestos is discovered, the following steps describe the actions to be taken by all employees. It is important to note that all asbestos is to be logged in the inventory, regardless of its state of repair. The following procedures apply:

- Complete the Asbestos Inventory Form and submit it to the supervisor.
- **Sampling – The Supervisor will determine if samples are required to confirm the existence of asbestos. This will be done by checking the inventory to see if asbestos in that location has already been tested. If necessary, the Supervisor will close off an area (mechanical**

spaces) or shut down equipment (air handling units) pending test results and remedial action.

- **Repair/Removal and Cleanup –** If the asbestos is damaged, it is certain a clean up will be required. The clean up and repair should happen together. If removal is required, the supervisor will determine whether the removal will be carried out by a contractor or by Sunbelt Controls Employees.
- **Labeling –** All known asbestos containing material must be labeled. For asbestos-pipe insulation, yellow paint will be applied directly to the insulation. In areas where asbestos is present in multiple locations it will be sufficient to provide warning signage at each entry point into a room. Blue paint will be applied to any new insulation which is not readily obvious to be asbestos free.

23.0 Clean Up of Asbestos Containing Materials – Asbestos only poses a health hazard when it becomes airborne and people inhale the fiber. When asbestos-containing material has been disturbed, effective clean up will ensure that asbestos does not present a health hazard. Clean up of dust which might contain traces of asbestos, such as a custodian might encounter in routine cleaning in buildings where asbestos is present, will not require special precautions. To ensure that clean up of significant quantities of asbestos will not cause a health hazard, the following procedure will be followed:

- Clean up of significant amounts of asbestos containing material will be only be done by Employees who have been trained and who are wearing appropriate protective clothing and a fitted, air-purifying respirator.
- Dry sweeping of asbestos-containing waste or other clean up activities which will create airborne dust are not permitted.
- Large pieces of asbestos containing material will be collected by hand and properly bagged in accordance with the disposal procedures.
- Whenever possible, asbestos dust will be thoroughly wetted and clean up with a wet mop or a wet vac. Contaminated water will be discharged to a sewer. Containers, mops and other equipment which might be contaminated with asbestos will be rinsed with water and the rinse water discharged to a sewer.
- If additional clean up is needed it will be carried out using a vacuum equipped with a HEPA filter.

24.0 Non-Friable ACM Work – Asbestos that is effectively bonded in a non-asbestos matrix cannot easily become airborne. As such, provided the material is not broken or abraded, there is little risk of inhalation exposure to asbestos. To ensure that minor work involving non-friable asbestos (including vinyl asbestos tile, asbestos asphalt roofing, and asbestos ceiling and wall tile) the following procedure will be followed:

- **Before Beginning Work –** Before beginning the work, the worker will carefully inspect the asbestos containing material to ensure that the planned work will not create airborne asbestos dust.

- **Cleaning Suspected ACM –** Where dust that might contain asbestos fiber is present, the worker will clean the material using a wet method or a HEPA filtered vacuum.
- **After Work is Completed –** Following completion of the task, the worker will carry out any required clean wet methods or a HEPA filtered vacuum and will then carefully bag for disposal all asbestos containing waste. Note: Cutting, drilling, sanding or breaking the material are likely to create airborne asbestos dusts and will require additional precautions.

25.0 Repairs to ACM – Where asbestos is known or believed to be present in damaged insulation, repairs or removal are needed to prevent asbestos fiber from becoming airborne. Only workers who have successfully completed Level 3 Asbestos Safety training and who are authorized to do so may undertake such repairs or removal. The following procedure will be used whenever a minor repair to asbestos containing insulation is undertaken:

26.1 Access to areas where minor repair is to be carried out will be restricted to authorized people only. When necessary, signs will be posted advising of access restrictions

26.2 Workers repairing asbestos containing insulation will wear coveralls and a properly fitted, air purifying respirator equipped with a particulate filter designed to remove asbestos fibers from inhaled air.

26.3 Before beginning the repair, the area will be carefully cleaned using the Clean up of Asbestos-Containing Material Procedure.

26.4 When feasible a drop cloth shall then be placed beneath the insulation to be repaired. Before beginning the repair, all feasible steps (wetting with amended water, encapsulating adjacent asbestos-containing material, etc.) will be taken to prevent the release of asbestos fibers.

26.5 Following the repair the worker will carefully bag for disposal all asbestos-containing waste and clean the surrounding area using wet cleaning techniques or a HEPA filtered vacuum

26.0 Single Use Glove Bag Procedure –The following procedure will be followed when single-use asbestos removal glove bags are used. The procedure may only be used on tasks that are small enough to be completely enclosed in the glove bag and which do not leave exposed asbestos in place when the bag is removed.

- **Authorized Employees** – Only a Employee who has completed level 3 training and who is wearing appropriate coverall and an air purifying respirator (3M 6000 Series with a purple, 6240 particulate filter or equivalent) will carry out glove bag removal of asbestos.
- **Restricting Access** – Before beginning removal work, access to the area will be restricted. If the work site is located in areas where other than Asbestos Trained Employees might be exposed, warning notices will be posted.

- **Control of Hazardous Energy** – Steps will be taken to prevent accidental movement, contact with heat, cold or electricity, or release of chemicals.
- **Cleaning the ACM Work Area** – The work area will be cleaned using a HEPA filtered vacuum or wet cleaning to remove asbestos-containing material contaminating the immediate work area. Where possible, a plastic sheet will then be placed beneath the pipe or fitting from which the asbestos is to be removed.
- **Preventing Exposure** – Steps will be taken to prevent exposure where damage to the insulation might allow release of fibers. Steps include making temporary repairs using duck tape or wetting the exposed fiber using amended water.
- **Positioning the Single Use Bag** – The asbestos-containing material will be thoroughly wetted using amended water. With tools in bag, the single-use bag will be positioned and secured using adhesive and tape as necessary.
- **ACM Removal** – Working through the gloves, the asbestos will be removed exercising care to avoid puncturing the bag.
- When removal is compete or bag is full, sprayer (containing amended water) will be inserted into the bag and the pipe or fitting, tools and the bag interior will be washed. Tools will then be placed in an inverted glove withdrawn from bag and the glove sealed from the bag using duct tape.
- The tools will then be removed by cutting through the duct tape ensuring that both the bag and the glove remain sealed.
- The tools will then be submerged in water and the glove opened. Tools will be cleaned under water.
- The glove bag will then be carefully removed, sealed and placed in a sealed container pending packaging for disposal.
- **Clean Up** – The surface of the pipe or fitting will be carefully wet wiped and treated with sealer. The plastic sheet will then be carefully wet wiped and rolled up.
- **ACM Waste Disposal** – All solid waste created during removal jobs including glove bags, disposable coveralls, wipe rags and plastic sheeting will be treated as asbestos containing waste and handled as detailed in the disposal procedure.

27.0 Multi Use Glove Bag Procedure – This procedure describes the use of multiple use glove bags. It may be used on tasks that require the bag to be repositioned to complete the entire job.

- **Authorized Employees –** Only a Employee who has completed level 3 training and who is wearing appropriate coverall and an air purifying respirator (3M 6000 Series with a purple, 6240 particulate filter or equivalent) will carry out glove bag removal of asbestos.
- **Restricting Access –** Before beginning removal work, access to the area will be restricted. If the work site is located in areas where any other employee or the public might be exposed to asbestos, warning notices will be posted.
- **Control of Hazardous Energy –** Steps will be taken to prevent accidental movement, contact with heat, cold or electricity, or release of chemicals.

- **Cleaning the ACM Work Area –** The work area will be cleaned using a HEPA filtered vacuum or wet cleaning to remove asbestos-containing material contaminating the immediate work area. Where possible a plastic sheet will then be placed beneath the pipe or fitting from which the asbestos is to be removed.
- **Exposure Control –** Steps will be taken to prevent exposure where damage to the insulation might allow release of fibers. Steps include making temporary repairs using duck tape or wetting the exposed fiber using amended water.
- **Glove Bag Removal –** The asbestos containing material will be thoroughly wetted using amended water. With tools in bag, the bag will be positioned and secured using adhesive and tape as necessary.
    - Working through the gloves, the asbestos will be removed exercising care to avoid puncturing the bag.
    - When removal is compete or bag is full, sprayer (containing amended water) will be connected to the valve and the pipe or fitting, tools and the bag interior will be washed. If the bag is to be repositioned to remove additional asbestos, remaining exposed ends of asbestos will be thoroughly damped.
- **Tool Removal –** Tools will then be placed in an inverted glove withdrawn from bag and the glove sealed from the bag using duct tape. The tools will then be removed by cutting through the duct tape ensuring that both the bag and the glove remain sealed.
- **Tool Decontamination –** The tools will then be submerged in water and the glove opened. Tools will be cleaned under water.
    - The glove bag will then be removed and placed in a sealed container pending packaging for disposal.
- **Clean Up –** The surface of the pipe or fitting will be carefully wet wiped and treated with sealer. The plastic sheet will then be carefully wet wiped and rolled up.
- **ACM Waste Disposal –** All solid waste created during removal jobs including glove bags, disposable coveralls, wipe rags and plastic sheeting will be treated as asbestos containing waste and handled as detailed in the disposal procedure.

28.0 Modified Enclosure Procedure – The following Modified Enclosure Method may be used for removal of asbestos from ceilings, walls, beams pipes or other equipment providing that the job is small enough that it can be completed within one shift without the need for repeated entry into the work area. The method may not be used for jobs involving: amosite, crocidolite or friable asbestos of any type. Additional precautions will be required if the exhaust air cannot be discharged outdoors.

- **Authorized Employees –** Modified enclosure removals may only be undertaken by Employees who have completed level three training and who have received modified enclosure removal training.
- **Preparation –** If dust which might contain asbestos is present, pre clean the work site using wet cleaning or HEPA vacuum cleaning.

- **Area Protection –** Protect floor, walls equipment within the work area which might be damaged by water.
- **Control of Hazardous Energy –** Ensure that steps are taken to protect workers from any energized equipment or systems located within the work area.
- **Warning Notification –** Post signs and restrict access to work area.
- **Contamination Control –** Seal area to prevent air leakage into adjacent areas or air handling system using framing as necessary, 150 mil plastic sheeting, tape, sealants and caulking, as required. Construct an overlapping, double curtained entrance to work area.

    - Install HEPA filtered negative air unit in work area. Unit must provide 4 air changes per hour while maintaining a pressure difference of -0.02 inches of water. Direct filtered exhaust air outdoors.
- **Protective Clothing –** Employees entering the work are shall wear a disposable Tyvek type suit including a head cover and an air purifying respirator (3M 6000 Series with a purple, 6240 particulate filter or equivalent).
- With the area sealed and negative air unit in operation, saturate asbestos-containing material with amended water using airless sprayer.
- **ACM Removal –** Remove asbestos using additional amended water as needed being careful not to create airborne dust.

    - Brush the area from which asbestos has been removed and then wet wipe or vacuum to remove final traces of asbestos. Following removal of asbestos, treat the area with slow dry sealer (or detail local procedure).
- **ACM Clean Up –** Place all waste in specially marked heavy duty asbestos waste disposal bags. Seal waste bags securely using duct tape before removing from the enclosure. Wipe all tools with a damp cloth to remove traces of asbestos contamination before removing them from the enclosure.

    - Wet wipe or vacuum (using a designated vacuum marked ASBESTOS ONLY) all areas within the enclosure not covered by plastic to remove traces of asbestos.
    - If a HEPA filtered shop vac was used, it shall be wiped with a damp cloth and the hose end covered with tape before being removed from the enclosure. If the vac is to be opened to change a filter or bag, the work will be carried out in an enclosure under negative pressure with HEPA filtered air exhausted outdoors.
    - Wet wipe the interior of plastic sheeting used to form the enclosure. Remove plastic by rolling, wet wiping any visible particulate matter that make be visible. Wet wipe the disposable Tyvek suit and remove. Place the plastic sheeting, the suit and the used respirator cartridges in an asbestos waste bag along with other remaining contaminated material.

- **Utilities** – Arrange for reconnection of any services running through the work area which were disconnected to accommodate removal work.
    - Dispose of waste as per waste disposal procedure.

29.0 Disposal of Asbestos Containing Waste Materials – Handling and disposal of asbestos containing waste is regulated by both State and Federal regulations. To ensure compliance with these regulations and to ensure that no-one is exposed to asbestos the following procedure is to be followed:

- **Authorized Employees** – Only an Employee who has completed Level 2 training and who is wearing appropriate air purifying respirator will package asbestos waste.
- **Bagging ACM** – Waste ACM will be thoroughly wetted and then placed in specially labeled 6 mil plastic bags. The bag will be securely sealed using duct tape. The bagged asbestos will then be placed in another (second) labeled, 6 mil plastic bag which is again taped closed.
- **Temporary Storage of ACM** – Asbestos waste may be transported from the location where it was produced to an interim storage location if the bags are free from punctures or tears and if the outside of the bag is free of asbestos material or dust. Asbestos waste will be transported in an enclosed vehicle or beneath a secured tarpaulin. No other cargo may be carried while the waste asbestos is being moved. After the waste asbestos is moved to an interim storage site, the driver will, if necessary, clean the vehicle to remove asbestos contamination.
- **Disposal Locations** – Asbestos waste must be disposed of at a waste disposal site which is approved to receive asbestos by the State Dept of the Safety Department_.
- **Shipping ACM** – Shipment of waste asbestos must be coordinated with the waste disposal site which is to receive the waste. Asbestos disposal will normally be carried out by external contractors (reword as needed).
    - Shipments for disposal must be done in accordance with California and Federal DOT regulations and must be accompanied by a properly completed shipping document.

30.0 Definitions

Asbestos - Asbestos is a generic term describing a family of naturally occurring fibrous silicate minerals. As a group, the minerals are noncombustible, do not conduct heat or electricity and are resistant to many chemicals. Although there are several other varieties that have been used commercially, the most common asbestos mineral types likely to be encountered in Sunbelt Controls buildings are chrysotile (white asbestos), amosite (brown asbestos), and crocidolite (blue asbestos). Among these, white asbestos is by far the most common asbestos mineral present in Sunbelt Controls buildings.

Friable Asbestos - Friable asbestos material means finely divided asbestos or asbestos-containing material or any asbestos-containing material that can be crumbled, pulverized

or powdered by hand pressure. Individual fibers in friable asbestos-containing material can potentially become airborne and can then present a health hazard. Three types of friable material commonly used in buildings are:

- **Sprayed fibrous fireproofing**
- **Decorative or acoustic texture coatings**
- **Thermal insulation**

Non-friable Asbestos – Non-friable asbestos includes a range of products in which asbestos fiber is effectively bound in a solid matrix from which asbestos fiber cannot normally escape. Non-friable asbestos includes a variety of products including asbestos cement tiles and boards and asbestos reinforced vinyl floor tiles. Cutting, braking, sanding, drilling, or similar activities can release asbestos fibers from even non-friable asbestos materials.