BALESTRIERI™

AN INDUSTRIAL SERVICE COMPANY

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Safety and Health Program

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Green Bay Wisconsin	*Madison Wisconsin*	*Milwaukee Wisconsin*	*Chicago Illinois*	*Rockford Illinois*

Disclaimer

This Safety Manual is intended as the most current safety policies, rules and regulations of Balestrieri who reserves the right to change policies, rules and regulations at any time. Employees will be notified of any policy, rule or regulation changes, additions or deletions.

Balestrieri reserves the right to make changes in this manual for the purpose of modifying, revising and updating company policy and this manual. Notice of changes will be posted on the bulletin boards, some will be provided in writing to the employees, and said changes will become a part of this manual.

This Safety Manual supersedes all previous safety policies, rules and procedures given to employees. Only an officer of Balestrieri may alter this manual.

Management Commitment to Safety and Health

If you have any questions or need assistance reviewing this document please contact Cynthia K. Balestrieri, Vice President (262) 743-2800.

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Introduction

Management Commitment to Safety and Health

The top priority of Balestrieri is worker safety and protection through a proactive performance orientated safety program. Management and employee commitment, involvement and accountability form the core of our safety program. It is understood by all employees that the responsibilities for safety and health are shared. A comprehensive employee Health and Safety Program is a mandatory tool to help employees safely succeed in their positions.

Each employee is expected to follow all company rules and to perform their work in a safe manner. Every employee is responsible for:

- Implementing the company's safety program.
- Training employees in safe work procedures.
- Safety at each job site location.

The company's policy is to provide a safe and healthy place of employment for every employee and to abide by accident prevention regulations set forth by the federal, state and local governments. Employees should be aware that as the size of a worksite or the complexity of a hazardous operation increases, the need for written guidelines is necessary to ensure clear communications of policies and priorities as well as a consistent and fair application of rules.

The program includes provisions for the systematic identification, evaluation, prevention and control of general workplace hazards, specific job hazards and potential hazards that may arise from unforeseeable conditions.

This program has been prepared to acquaint all employees with the various safety policies, rules and procedures. It is the responsibility of the employees to become familiar with this handbook and the policies, rules and regulations contained in it.

It is also our policy that safety rules should be strictly observed at all times. Although these rules are considered to be very important, it is impossible to publish a rule to cover every circumstance. If a rule that might cover a specific hazard condition has been omitted, that shall not be an excuse to disregard common sense in the performance of your work.

The possession or consumption of alcohol, drugs or any controlled substance is against policy and violators are subject to dismissal. It must also be noted that Balestrieri is a tobacco free company. Tobacco is not permitted on company property or jobsites.

Each employee is urged to cooperate fully with this program. Abuse or a disregard of this program is a violation of this program and will be treated accordingly. Remember, your help in preventing accidents and injuries benefits you and your fellow employees.

It must also be understood that this a document in process – continually updated. Our objective is to develop and maintain a health and safety program that will reduce the incidence of injuries and illnesses to an absolute minimum. Our goal is zero accidents and injuries.

Very best regards,

Kenneth R. Balestrieri, President

Mission Statement

Our mission is to assist our clients by reducing their exposure to environmental liability and hazards.

It is understood that given the nature of the work being performed by Balestrieri, the protection of human health and the environment shall be the number one concern of every employee and shall supersede time to ensure that our work is completed safely for all parties involved.

Company History and Industrial Service Overview

With over 25 years of experience in the environmental industry, company president, Kenneth R. Balestrieri, has seen issues involving the environmental industry change rapidly. Realizing the growing need for quality environmental contractors, Balestrieri was formed in 1992. Our firm continues to be dedicated to the environmental and industrial service industries. Balestrieri is committed to exceeding our clients' expectations by listening to and understanding what they want.

Core services provided by Balestrieri include pre-construction inspections, asbestos abatement, industrial coating removal, building renovation, mold remediation, hazardous waste removal and interior demolition.

Business Philosophy

Since 1992 our core values have been a very visible part of our organizational culture. These same core values represented here are expected from employees at every level of our organization:

- Unquestioned integrity in every aspect of our business.
- A personal commitment to a strong work ethic and achieving results.
- Commitment to exceeding client expectations.
- Aggressive, persistent and creative pursuit of opportunities.
- Operating in a fiscally sound manner.
- Recognition of the importance of our employees.

These are and will continue to be the fundamental principles that underlie the formation and operation of our firm.

Business Goal

To be the premier environmental and industrial service provider in the Midwest.

Principle Policies and Procedures

General Industry Standards

Chains, Cables, Ropes and Hooks

Hooks and chains in use shall be visually inspected daily, with a dated and signed report of condition noted on the Daily Log sheet and be readily available to appointed personnel. Running ropes shall be inspected monthly and noted on the Daily Log sheet and be readily available to appointed personnel.

Hoist ropes on crawler; locomotive and truck cranes shall be free from kinks or twists and shall not be wrapped around the load.

When U-bolt rope clips are used on hoist ropes with overhead and gantry cranes, the U-bolt clip shall be installed so that the U-bolt is in contact with the dead end (short or non-load carrying end) of the rope. Clips shall be installed in accordance with the clip manufacturer's recommendation. All nuts on newly installed clips shall be tightened after one hour of use.

Compressed Air, Use of

Compressed air used for cleaning purposes shall not exceed 30 pounds (13.5 kilograms) per square inch (6.5 square centimeters) when the nozzle end is obstructed or dead-ended, and then only with effective chip guarding and personal protective equipment.

Compressed Gas Cylinders

Compressed gas cylinders shall be kept away form excessive heat, shall not be stored where they might be damaged or knocked over by passing or falling objects, and shall be stored at least 20 feet (6 meters) away from highly combustible materials.

Where a cylinder is designed to accept a valve protection cap, caps shall be in place except when the cylinder is in use or is connected for use.

Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location at least 20 feet (6 meters) from highly combustible materials such as oil or wood shavings. Cylinders should be stored in definitely assigned places away from elevators, stairs or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized personnel. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

Compressed Gases

- **Acetylene**: Acetylene cylinders shall be stored and used in a vertical, valve-end-up position only.

- **Hydrogen**: Hydrogen containers shall comply with one of the following:
    - Designed, constructed and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII - Unfired Pressure Vessels, 1968.
    - Designed, constructed, tested and maintained in accordance with US Department of Transportation specifications and regulations.

- **Oxygen**: Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet (6 meters) or by a noncombustible barrier at least five feet high (1.5 meters) having a fire-resistance rating of 1/2 hour.

Personal Protective Equipment

Employees are to wear appropriate protective equipment including, but not limited to, face shields, insulated rubber gloves and shoes, and use insulated tools when electrical hazards are present.

Guarding

Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees.

Identification

Each disconnecting means shall be legibly marked to indicate its purpose, unless it is located so the purpose is evident.

Listing and Labeling

Listed or labeled equipment shall be used or installed in accordance with any instructions included in the handbook, listing or labeling.

Openings

Unused openings in cabinets, boxes and fittings shall be effectively closed.

Ladders

OSHA requires that portable ladders have nonconductive side rails if used by employees who are working where they might contact exposed energized circuit parts.

Electric Tool and Equipment Safety Rules

- All electric tools and equipment will be used as stated in the owner's manual or on the label and in a safe manner.
- Flexible electric cords will not be used to raise and lower tools and equipment.
- Flexible electric cords will not be affixed to hooks or staples as that may damage the insulation on the cords.
- Portable cord and plug connected tools and equipment will be visually inspected before use for any evidence of possible damage.
- If there is a effect or evidence of damage that might expose an employee to injury, the affected tool or equipment will be referred to the supervisor.
- 3-prong plugs should be used in 3-prong receptacles.
- A flexible cord used with grounding-type equipment will contain an equal grounding conductor.
- Attachments and receptacles may not be connected or altered in a way that would prevent proper continuity of the equipment grounding conductor where plugs are attached to receptacles. Additionally, those devices may not be altered to allow the grounding pole of a plug to be inserted into slots inadequate to the connection to the current carrying conductors.
- Adapters that interrupt the continuity of the equipment grounding connections cannot be used.
- Employees using portable electric equipment and flexible cords in highly conductive locations (such as those inundated with water or other conductive liquids) or in locations where employees are likely to contact water or conductive liquids, should not wear key chains, jewelry or any other personal items which might contact exposed energized particles.
- Employee's hands may not be wet when plugging and unplugging flexible cord and plug-connected equipment.
- Energized plug and receptacle connections may be handled only with protective equipment if the condition of the connection could provide a path to the employee's hand (for example, if a cord connector is wet from being immersed in water).

Hazard Warnings for Electrical Hazards

- Safety signs, safety symbols or accident prevention tags may be used where necessary to warn employees about electrical hazards which may endanger them.
- Barricades may be used in conjunction with safety warnings if it is necessary to prevent or limit employee access to work areas exposing employees to non-insulated energized conductors or circuit particles.
- If signs and barricades do not provide sufficient security protection from electrical hazards, an attendant may be stationed in the area to protect employees.

General Hazard Observation and Reporting

Employees should immediately report any defective or damaged equipment, machinery, tools or wiring to their supervisor. Examples of hazard observations include but are not limited to:

- Worn spots or breaks on electric cords.
- Breaks in connections and/or ground wires.
- Excess tension or binding on belts and gears.
- Damaged personal hand, head and foot protectors or clothing, and/or unavailability.
- Motor vibrations and/or obstructions that may cause overloading.
- Power hand tools that are not operating properly.

Lockout/Tagout

An energy source must be isolated before employees can perform maintenance or service on equipment, machines and processes. Potential sources of energy may include electrical, steam, hydraulic, tension, gravity, etc. Energy sources can be isolated by closing valves, relieving trapped pressure, disconnecting circuits and blanking fluid or gas lines. Even elevated machine parts must be blocked or restrained to prevent them from moving.

Purpose of Lockout/Tagout is to identify, control and verify zero energy state for all hazardous energy sources. Zero energy state is defined as having control of all hazardous energy sources. Hazardous energy sources are controlled (locked out OR tagged out), stored energy is controlled or dissipated and hazardous energy sources are verified to be at zero energy state ("lockout and try, lockout/tryout, test, attempt to operate switch") prior to performing any work (ie: service or maintenance activities).

Lockout/Tagout procedures are only done by supervisors or authorized employees.

Repair and Maintenance accidents can be prevented through lockout/tagout procedures following the industries procedures below:

- Lockout means to put a locking devices, such as a padlock, on an energy isolating device such as a disconnect switch or valve, after the equipment, machine or electrical source has been shut down. A padlock on an isolating device is the most secure way to prevent machines and equipment from being operated while repair or maintenance work is performed.
- Tagout means to put special tags on equipment energy isolating devices. These tags warn other employees that the equipment must not be operated until the tags are removed by the supervisor or authorized employee. Lockout is the desired method, but if that is not possible and tagout is chosen, it should provide the same level of safety as lockout and must have an identification tag with the name of the employee who put the tagout devise on.

Employees, other than the supervisor or authorized employee doing the service and/or maintenance on the equipment, should remain at a safe distance from the affected area. Lockout/Tagout devices that are utilized by Balestrieri are OSHA compliant signages. Lockout/tagout devices are under the exclusive control of the authorized employee performing the servicing or maintenance (i.e. multiple groups of works, shift changes, other contractors in the area, etc). Once the service and/or maintenance has been completed, the employee who put the Lockout/Tagout device on should be the one(s) to remove it.

Flammable Liquids

Flammable liquids must be kept in covered containers or tanks when not actually in use. The quantity of flammable or combustible liquid that may be located outside of an inside storage room or storage cabinet in any one fire area of a building shall not exceed:

- 25 gallons (95 liters) of Class IA liquids in containers;
- 120 gallons (456 liters) of Class IB, IC, II or III liquids in containers; or
- 660 gallons (2,508 liters) of Class IB, IC, II or III liquids in a single portable tank.

Flammable and combustible liquids shall be drawn from or transferred into containers within a building only through a closed piping system, from safety cans, by means of a devise drawing through the top, or by gravity through an approved self-closing valve. Transferring by means of air pressure shall be prohibited.

Not more than 60 gallons (228 liters) of Class I or Class II liquids, nor more than 120 gallons (456 liters) of Class III liquids, may be stored in a storage cabinet.

Inside storage rooms for flammable and combustible liquids shall be constructed to meet the required fire-resistive rating and writing for their uses.

Outside storage areas shall be graded so as to divert spills away from buildings or other exposures, or be surrounded with curbs at least 6 inches (15 centimeters) high with appropriate drainage to a safe location for accumulated liquids. The areas shall be protected against tampering or trespassing, where necessary, and shall be kept free of weeds, debris and other combustible material not necessary to the storage.

Adequate precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to, open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, static, electrical and mechanical sparks, spontaneous ignition, including heat-producing chemical reactions, and radiant heat.

Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected.

Exits

Every building designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of emergency.

In hazardous areas, or where employees may be endangered by the blocking of any single means of egress due to fire or smoke, there shall be at least two means of egress remove from each other.

Exits and the way of approach and travel from exits shall be maintained so that they are unobstructed and are accessible at all times. All exits shall discharge directly to the street or other open space that gives safe access to a public way. Exit doors serving more than 50 people, or at a high-hazard area, shall swing in the direction of exit travel.

Readily visible, suitable illuminated exit signs shall mark exits. Exit signs shall be distinctive in color and provide contrast with surroundings. The word “EXIT” shall be in plain legible letters, not less than six inches (15 centimeters) high.

Any door, passage, or stairway that is neither an exit nor a way of exit access and that is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading “NOT AN EXIT” or similar designation.

Floors, General Conditions

All floor surfaces shall be kept clean, dry and free form protruding nails, splinters, loose boards, holes or projections.

Where wet procedures are used, drainage shall be maintained and false floors, platforms, mats or other dry standing places shall be provided where practicable.

Floor Openings and Open Sides

Standard railings shall guard every stairway and ladder-way floor openings with standard toe boards on all exposed sides except the entrance. For infrequently used stairways, the guard may consist of a hinged cover and removable standard railings. The entrance to ladder way opening's hall be guarded to prevent a person from walking directly into the opening.

Every hatchway and chute floor openings shall be guarded by a hinged floor opening cover equipped with standard drillings to leave only one exposed side or a removable railing with toe board on not more than two sides and a fixed standard railing with toe boards on all other exposed sides.

Every floor hole into which persons can accidentally walk shall be guarded by either a standard railing with standard toe board on all exposed sides, or a floor hole cover that should be hinged in place. While the cover is not in place, the floor hole shall be attended or shall be protected by a removable standard railing.

Every open-sided floor, platform or runway 4 feet (1.2 meters) or more above adjacent floor or ground level shall be guarded by a standard railing with toe board on all open sides, except where there is entrance to a ramp, stairway or fixed ladder. Runways not less than 18 inches (45 centimeters) wide used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate.

Regardless of height, open-sided floors, walkways, platforms or runways above or adjacent to dangerous equipment shall be guarded with a standard railing and toe board.

Hand and Power Tools

Portable electric equipment shall be handled in a manner that will not cause damage. When the cord and plug connected tools are relocated they should be visually inspected before use. The company is responsible for the safe condition of tools and equipment used by employees, including tools and equipment, which may be furnished by employees. The frames of portable electrical tools and equipment shall be properly grounded except when UL-approved double-insulated construction.

All hand and power tools shall be kept in safe condition, and proper personal protective equipment should be utilized. Handles of tools shall be kept tight to the tool, wooden handles shall be free of splinters and cracks, and guards on the tools should be utilized. Wedges and chisels shall be free of mushroomed heads. Wrenches shall not be used when sprung to the point that slippage occurs. In addition, tools that are damaged, not working properly, and/or meet the descriptions described above, should be removed from the working environment and labeled as unsafe in order to prevent them from being used.

All non-current-carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures and supporting structures shall be grounded.

Ladders

Proper Selection

Select ladder of proper duty rating to support combined weight of user and materials. Ladders are available with duty ratings of 200, 225, 250, 300 and 375 pounds. Select ladders of proper length to safely reach desired height.

Inspection

- Inspect thoroughly for missing or damaged components. Never use a damaged ladder and never make temporary repairs.
- Inspect thoroughly for loose fasteners. Make sure all working parts are in good working order (lubricate if necessary).
- Clean ladder of all foreign material (wet paint, mud, snow, grease, oil, etc.).
- Destroy/take out of service ladder if damaged, worn, or exposed to fire or chemicals.

Before Use

- Metal ladders conduct electricity. Keep away from electrical circuits.

- Consult manufacturer for use in chemical or other corrosive environments.
- Use a ladder only as outlined in instructions. Ladders are designed for one person only. Do not overload.
- Do not use in high winds or during storms.
- Do not use in poor health, if taking drugs or alcoholic beverages, or if physically handicapped.
- Keep shoes clean. Leather soles should not be worn.
- Never leave ladder set up and unattended.
- Pay close attention to what you are doing.
- Use this product at your own risk.

Set-Up and Use

- Use help in setting up ladder, if possible.
- Make sure ladder is fully open and spreaders locked.
- Set all feet on firm level surface. Do not place on unstable, loose, or slippery surfaces. Place ladder where access is not obstructed. Do not place in front of unlocked doors. Ladders are not intended to be used on scaffolds.
- Secure ladder from movement where possible.
- Make sure spreaders are locked and ladder is stable before climbing.
- Climb only front side of ladder. Face ladder when climbing up or down. Maintain a firm grip. Use both hands in climbing.
- Keep body centered between side rails. Do not over reach. Get down and move ladder as needed.
- Do not climb, stand or sit above second step from top on stepladders or above platform on platform ladders. Do not climb, stand or sit on spreader braces, ladder top or pail shelf.
- Do not straddle front and back. Do not climb from on ladder onto another.
- Avoid pushing or pulling off to side of ladder. Do not "walk" or "shift" ladder while on it.

Ladders, Fixed

All rungs shall have a minimum diameter of 3/4 inch (1.8 centimeters) if metal, or 1 - 1/8 inch (2.8 centimeters), if wood. They shall be a minimum of 16 inches (40 centimeters) wide and should be spaced uniformly no more than 12 inches (30 centimeters) apart.

Cages, wells or ladder safety devices for ladders affixed to towers, water tanks, or chimneys shall be provided on all ladders more than 20 feet (6 meters) long. Landing platforms shall be provided each 30 feet (9 meters) of length, except where no cage is provided, landing platforms shall be provided for every 20 feet (6 meters) of length.

Tops of cages on fixed ladders shall extend 42 inches (1.07 meters) above the top of landing, unless other acceptable protection is provided, and the bottom of the cage shall be not less than 7 feet (2.1 meters) nor more than 8 feet (2.4 meters) above the base of the ladder.

Side rails shall extend 3 1/2 feet (1 meter) above the landing.

Ladders, Portable

Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in an open position. Ladders shall be inspected frequently and those that have developed faults shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous - Do Not Use." Non self-supporting ladders shall be erected on a sound base with the base of the ladder a distance from the wall or upper support equal to one-quarter the length of the ladder and placed to prevent slippage. The top of a ladder used to gain access to a roof should extend at least 3 feet (0.9 meters) above the point of contact. Ladders should only be used for their intended purposes and should not be used on tasks in which their rated weight capacity would be exceeded.

OSHA requires portable ladders to have nonconductive side rails if used by employees who would be working where they might contact exposed energized circuit parts.

Lead

Balestrieri ensures that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter (50 mg/m^3) of air averaged over an 8-hour period.

Hearing Conservation

Occupational noise exposure is one of the most pervasive occupational health problems. Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. Sound consists of pressure changes in the air, caused by vibration or turbulence. These pressure changes produce waves emanating away from the turbulent or vibrating source. Noise-induced hearing loss can be temporary or permanent. Generally, prolonged exposure to high noise levels over a period of time gradually causes permanent damage.

Noise is described in units of loudness called decibels, (dB or dbA) which measures the intensity of sound. Noise is also measured for frequency, pitch and vibrations per second (Hz). Noise loudness should not exceed 85 dbA Hz should not exceed 4000Hz (normal speech is 4000Hz).

Feasible engineering and/or administrative controls are utilized to keep exposure below the allowable limit. When engineering and/or administrative controls fail to reduce the noise level to below 85 dbA, Balestrieri provides personal noise protection to reduce the noise to an acceptable level. The appropriate personal noise protection is chosen based on an evaluation of the noise within the specific working environment.

Balestrieri provides employees with annual hearing conservation training on effects of noise to hearing, using personal noise protectors, the selection of proper noise protectors, and the purpose of audiometric testing. Training is amended to accommodate with any changes in PPE and/or the working environment. Balestrieri also monitors employees' exposure to noise, and provides annual audiometric hearing tests. (See Medical Surveillance for testing information)

The following definitions are important terms used in the hearing conservation section of this safety program:

Action Level – An 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response or equivalently, a dose of fifty percent.

Audiogram – a chart, graph or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Criterion Sound Level – A sound level of 90 decibels. Decibel (dB) – Unit of measurement of sound level.

Hertz (Hz) – Unit of measurement of frequency, numerically equal to cycles per second.

Representative Exposure – Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposure of other employees in the workplace.

Sound Level Meter – An instrument for the measurement of sound level.

Portable Power Tools (Pneumatic)

For portable tools, a tool retainer shall be installed on each piece of utilization equipment, which, without such a retainer, may eject the tool. Hose and hose connections used for conducting compressed air shall be designed for the pressure and service to which they are subjected.

Powered Platforms

All completed building maintenance equipment installations shall be inspected and tested in the field before being placed in service. A similar inspection and test shall be made following any major alteration to an existing installation. No hoist shall be subjected to a load in excess of 125 percent of its rated load.

Structural supports, tie-downs, tie-in guides, anchoring devices and any affected parts of a building included in the installation shall be designed by or under the direction of a registered, experienced professional engineer. Exterior installations shall be capable of withstanding prevailing climatic conditions. The building installation shall provide safe access to, and egress from, the equipment and sufficient space to conduct necessary maintenance. Affected parts of the building shall have the capability of sustaining all the loads imposed by the equipment. The affected parts of the building shall be designed to allow the equipment to be used without exposing employees to a hazards condition.

Repairs or major maintenance of those building portions that provide primary support for the suspended equipment must not affect the capability of the building to meet the requirements of this standard.

The equipment power circuit shall be an independent electrical circuit that shall remain separate from all other equipment within or on the building, other than power circuits used for hand tools that will be used in conjunction with the equipment. If the building is provided with an emergency power system, the equipment power circuit may also be connected to this system.

Equipment installations shall be designed by or under the direction of a registered, experienced professional engineer. The design shall provide for a minimum live load of 250 pounds (113.6 kg) for each occupant of a suspended or supported platform. Equipment that is exposed to wind when not in service shall be designed to withstand forces generated by winds of at least 100 mph (44.7 m/s) at 30 feet (9.2 meters) Aviv grade and when in service able to withstand forces generated by winds of at least 50 mph (22.4 m/s) at all elevations.

Each suspended unit component, except suspension ropes and guardrail systems, shall be capable of supporting at least four times the maximum intend live load applied or transmitted to that component.

Safety Nets

Safety nets must be installed as close as practical under the walking/working surface on which employees are working, but in no case more than 30 feet (9.1 meters) below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed. Safety nets and their installations must be capable of absorbing an impact force equal to that produced by the drop test.

Saws, Portable Circular

All portable, power-driven circular saws (except those used for cutting meat) having a blade diameter greater than 2 inches (5 centimeters) shall be equipped with guards above and below the base plate or shoe. The upper guards shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base plate to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically return to the covering position.

Scaffolds

All scaffolds and their support shall be capable of supporting the load they are designed to carry with a safety factor of at least 4.

All planking shall be Scaffold Grade, as recognized by grading rules for the species of wood used. The maximum permissible spans for 2-inch (5 centimeters) x 9-inch (22.5 centimeters) or wider planks are shown in the table below:

Maximum intended load in pounds (kg) per sq. ft.	**Maximum permissible span using full thickness undressed lumber in feet (meters)**	**Maximum permissible span using normal thickness lumber in feet (meters)**
25 lbs (11.3 kg) psf	10 feet (3 meters)	8 feet (2.4 meters)
50 lbs (22.7 kg) psf	8 feet (2.4 meters)	6 feet (1.8 meters)
75 lbs (34.0 kg) psf	6 feet (1.8 meters)	Not Applicable

The maximum permissible span for 1 - 1/4-inch (3.12 centimeters) x 9-inch (22.5 centimeters) or wider plank for full thickness is 4 feet (1.2 meters) with medium loading of 50 pounds (22.5 kilograms) per square foot.

Scaffolds planks shall extend over their end supports not less than 6 inches (15 centimeters) nor more than 18 inches (45 centimeters).

Scaffold planking shall be overlapped a minimum of 12 inches (30 centimeters) or secured from movement.

Assignment of Responsibilities and Accountability

Management

- Accepts responsibility for the leadership and effectiveness of the safety program.
- Provides the necessary equipment, resources and safeguards required to ensure safe working conditions for all employees.
- Regards worker safety and health as a fundamental value of this organization.
- Applies this commitment to safety and health protection with as much vigor as it does to other organizational goals.

Safety coordinator

It is the responsibility of the Safety coordinator to manage, implement and monitor the safety program. These duties include but are not limited to:

Program Development and Administration

- Develop and maintain a safety program.
- Develop and maintain injury and illness prevention policies and procedures.
- Develop awareness and motivational programs.
- Perform accident investigations.
- Perform or coordinate health and safety inspections/surveys.
- Maintain documentation and accident record keeping programs.
- Plan and prepare for natural and “man-made” disasters.
- Establish a medical program, which includes on-site first aid capabilities and off-site emergency medical care and medical surveillance.
- Establish and maintain a health and safety reference library.
- Keep apprised of changes in health and safety regulations.
- Participate in professional organizations related to occupational health and safety.

Training and Communication

- Provide a general safety orientation for all new employees.
- Implement and monitor training programs and provide materials as needed.
- Follow-up on citations and recommendations.

Measure Performance and Results

- Audit employee and supervisory safety performance.
- Audit job site inspections.
- Review the overall safety performance of the company.
- Reviews and maintains current copies of all federal, state and local safety and health regulations.
- Assists site supervision in accident investigation and recommends controls to management to prevent reoccurrence.

Project Manager, Superintendent and Foreman

It is the responsibility of the Project Manager/Superintendent/Foreman to implement and monitor the safety program. These duties and/or responsibilities include, but are not limited to:

- Maintaining a thorough knowledge of company safety policies and programs.
- Personally follow all safety rules and safe work practices.
- Providing complete health and safety instruction and training for employees.
- Consistently enforcing all safety rules in accordance with the company's disciplinary policy.
- Investigating all accidents and near-miss accidents in his/her area of responsibility in a timely manner.
- Providing adequate personal protective equipment and training on the proper use, maintenance, storage and disposal of this equipment.
- Insuring that all appropriate protective devices are installed and intact on all machines.
- Insuring that all fire-fighting equipment in his/her area is installed and accessible.
- Insuring that proper housekeeping procedures are followed.
- Instilling a high level of safety awareness in all employees through positive leadership, education and positive reinforcement.
- Insuring that injured and ill employees are referred for proper medical treatment.
- Conducting periodic safety inspections in their area of responsibility.
- Conducting weekly safety meetings with their job crews (tool box talks).
- Conducting frequent one-on-one safety talks with employees.
- Conducting a thorough safety orientation for new and transferred employees.
- Attending safety meetings and training sessions when requested by management.
- Developing proper attitudes toward safety in those they supervise.
- Ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved.
- Responsible for compliance with the safety program and applicable state, federal and local regulations.

Employee Involvement

Employee involvement is key in designing and implementing a company-wide safety program. A worker who is familiar with job sites and conditions is best able to communicate and contribute the job site safety. Informed workers who are involved in the program assume responsibility for conducting their work safely and for fostering safe work practices. Here at Balestrieri, Superintendents and Foremen are involved in the development of safety programs, workplace inspections and are active participants in near miss and accident investigations.

In addition, Superintendents are involved with the results of independent site inspections and work with the Safety coordinator in determining future toolbox talk topics and safety alert communications.

All employees are encouraged to offer suggestions or ideas for ways to make both the job site and safety program even better.

Hazard Analysis

Worksite Analysis

A practical analysis of the work environment involves a variety of worksite examinations to identify existing hazards, conditions and operations in which changes might occur to create new hazards. Balestrieri, effectively and actively analyzes each new worksite to anticipate and prevent harmful occurrences by following the subsequent guidelines and the company's Contractor Guidelines for Asbestos Abatement:

The objective of hazard analysis is to:

- Identify the hazards associated with a particular job, work activity or phase of the project.
- Identify the control measures and procedures necessary to protect employees from these hazards.
- Identify activities or phases of work that require further analysis or the development of specifically designed protective measures.
- Designate and identify the qualifications of the competent person, authority or engineer who will conduct worksite inspections.

In addition, our superintendents are:

- Conducting comprehensive worksite surveys for safety and health, involving all employees on a particular jobsite.
- Conducting pre-construction and site security meetings with all employees involved on a particular jobsite.
- Performing routine job hazard meetings.
- Conducting regular site safety and health inspections so that new or previously missed hazards and failures in hazard controls are identified.
- Assessing risk factors of ergonomic applications to workers' tasks.
- Providing a reliable system for employees to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses. By utilizing employee insight and experience in safety and health promotion, concerns can be addressed.
- Investigate all accidents and "near miss" incidents so that their causes and means for their prevention can be identified.
- Analyze these incident trends over time so that patterns with common causes can be identified and prevented.

Hazard Prevention and Control

An effective Health and Safety Program relies on the use of various loss prevention and control techniques to prevent or control hazards that contribute to work-related injuries and illnesses.

Hazards in the workplace take many forms, including air contaminants, tasks involving repetitive motions, chemical spills, equipment with moving parts, extreme hot or cold, noise, fire and toxic materials such as asbestos, lead and mold.

There are seven basic methods or techniques that Balestrieri applies to prevent or control these hazards before they result in an injury or illness:

1. Engineering Controls
2. Procedural Controls
3. Personal Protective Equipment
4. Administrative Controls
5. Medical Programs and Surveillance
6. Emergency Planning
7. Preventative Maintenance

When at all feasible, workplace hazards are prevented by effective design of the job site or job. Where it is not feasible to eliminate such hazards, they must be controlled to prevent unsafe and unhealthful exposure. Elimination or control must be accomplished in a timely manner once a hazard or potential hazards is recognized.

Engineering Controls

The most preferred method for controlling health and safety hazards is to eliminate or control the source of the hazard by the use of engineering controls. Some examples of engineering controls may include:

- Ergonomically designed tools, equipment, and work areas.
- Isolation or enclosure of hazardous processes or noisy equipment.
- Mechanical exhaust systems/containments/booths for controlling toxic materials.
- Substitution of products that are not hazardous or less hazardous than the product(s) currently in use.
- Replacement of potentially unsafe equipment or machinery with new equipment/machines that meet or exceed safety standards.
- Electrical or mechanical safety interlocks and guards for machine hazards.
- Provisions to shut down and lockout machinery when performing service or repair.
- Fire prevention systems.

Procedural Controls

When engineering controls are not feasible or affordable, or when guards or enclosures on equipment must be temporarily removed to conduct repairs and/or when employees are performing non-routine hazardous work such as confined space entry, procedural controls should be used to protect the safety and health of workers. Procedural controls include work rules, general work practices and specific written safe operating procedures. The following techniques are practiced to insure that employees follow these procedural controls:

- Work practice training to help workers understand why special precautions are needed.
- Positive reinforcement to promote and encourage safe work habits.
- Correction of unsafe performance.
- Disciplinary action, if needed, to enforce safety rules and protect employees and visitors.

Personal Protective Equipment

A further method of controlling exposure to hazards when worker exposure cannot be completely engineered out of normal operations is to provide personal protective equipment (PPE) to employees. The term PPE includes safety glasses, goggles, face shields, aprons, hard hats, hearing protectors, chemical resistant clothing and gloves, steel-toed shoes and respirators. Balestrieri provides all PPE to employees and is to be used and maintained in a sanitary and reliable condition. Balestrieri Field Managers are responsible for inspecting PPE prior to employee use. No PPE is to be employee owned. Balestrieri employees are trained on proper usage of PPE, and are retrained every time the workplace changes, PPE changes, and/or when there is improper use or lack of skills demonstrated with the equipment. In addition, all PPE training is documented, and a written hazard assessment must be completed and signed. An assessment of the workplace shall be conducted to determine if hazards are present, or are likely to be present, which necessitate the use of PPE. If there are hazards present that require PPE, the selected PPE must be fitted to each affected employee. Any defective and/or damaged equipment shall not be used by any employee of Balestrieri.

The keys to the effective use of PPE to control hazards are:

- Proper selection based on a written hazards assessment.
- Proper fit and comfort.
- Employee and supervisory training.
- Replacement procedures for damaged work parts and equipment.
- Consistent enforcement.

Medical Surveillance Program

Medical surveillance involves the systematic collection and evaluation of employee health data and medical tests to identify specific instances of illness or health trends that may suggest an adverse effect from workplace exposures.

A comprehensive medical surveillance program will:

- Help identify serious unknown hazards or deficiencies in our hazard control system.
- Provide for early detection of medical problems.
- Lower lost workdays and medical costs.
- Improve employee morale and productivity.

Emergency Planning

Planning and training for an emergency is essential in order to minimize the harmful consequences of an emergency incident. If personnel are not thoroughly trained to react to emergencies so that their responses are immediate and precise, they may expose themselves and others to greater danger rather than reduce their exposure. The types of emergencies that may arise at worksites vary. They could include fire, severe weather or chemical spills.

Preventative Maintenance

Preventative Maintenance (PM) on equipment plays a critical role in ensuring that hazard controls remain in place and are effective.

- Use safe and proper engineering techniques where feasible and appropriate.
- Establish safe work practices and procedures that are understood and followed by all affected parties. Understanding and compliance are a result of training, positive reinforcement, correction of unsafe performance, and if necessary, enforcement through a clearly communicated disciplinary system.
- Maintain the facility and equipment to prevent equipment breakdowns.

Job Site Inspections

The job superintendent will complete an inspection from a safety standpoint at the start of each new job and on each Monday morning for ongoing jobs. Areas to check will include, but are not limited to:

- Proper tools on the jobsite.
- Any unusual hazard, such as stumbling hazards or fall exposure.
- Any overhead objects that could fall on employees.
- Any objects or protrusions that may be an impalement threat.
- Any special personal protective equipment needed.
- Any special procedures due to job location.
- Areas of operations known to have contributed to employee accidents in the past.
- Any other item that may be peculiar to the job or location.

The results of each new internal inspection will be recorded on the Daily Log.

In addition, periodic inspections/surveys and procedures for hazard detection and control provide an effective method of identifying existing or potential hazards in the workplace and for eliminating or controlling hazards before they contribute to an injury or illness. Hazard control is the heart of a successful injury and illness prevention program.

The purpose of an inspection is to ensure that established safe work practices are being followed and that unsafe conditions or procedures are identified and corrected in a timely manner. The job superintendent monitors the operation of workplace equipment and can help verify that routine preventative maintenance is conducted and personal protective equipment is reliable. These scheduled inspections are in addition to the daily safety and health checks that are part of our current safety program.

Personnel who through either experience or training are able to identify actual and potential hazards and understand safe work practices conduct inspections. Periodically third-party safety inspections will be performed on jobsites.

Management reviews written inspection reports. The review assists in prioritizing problems and verifying completion of previous corrective actions. Overall inspection program results are reviewed for positive or negative trends.

OSHA Compliance Officer On-Site

OSHA continues to vigorously enforce workplace regulations through unannounced and comprehensive programs of workplace inspections. Such inspections permit OSHA Compliance Officers to enter an employer's premises, at times without the employer's consent, and scrutinize the employer's compliance with OSHA regulations. The following is a series of tips to help you better prepare for a worksite inspection:

- Your initial contact with the Compliance Officer ("CO") and the first moments of the OSHA inspection:
    - Stay calm and remain in control of the situation.
    - Ask to see the CO's credentials. Verify the credentials by calling the local OSHA Area Office. OSHA office numbers will now be printed on the backside of the Visitor Notification sheet in every foreman book.
    - Ask the CO to wait in an appropriate location, preferably a location that is nearby and does not have a view of the worksite.
    - Inform Ken Balestrieri that the CO is on site.
    - Call our attorney – Jeffrey P. Clark, Reinhart Boerner Van Deuren SC at (414) 298-8131.
    - Politely ask the CO to wait until Ken Balestrieri and/or Jeff Clark have arrived before conducting the inspection.
    - Rectify any readily "fixable" potential violations before the OSHA inspection begins, such as cluttered aisles or blocked exits.
- OSHA regulations and case law suggest that a company has a reasonable amount of time (one to five hours) to arrange for its designated representatives to be present at the inspection.
    - Do not be hurried into allowing an inspection without having Ken Balestrieri and/or Jeff Clark present.
- At the beginning of the inspection, you should request an "opening conference".
- The purpose of the opening conference is to:
    - Find out what OSHA rules the CO believes the company may have violated.
    - The scope of the proposed inspection of your worksite - try to focus the inspection on that scope.
    - Which records the CO wishes to inspect.
    - Discuss safeguarding the company's trade secrets.
- Accompany the CO on the tour and attempt to limit the tour to the initial scope.
- Photograph or videotape the same items/areas as the CO.
- If possible, correct any apparent violations during the inspection.
- Take notes and return these notes to Cindy Balestrieri to type up immediately after the inspection.
- Request a "closing conference" to find out whether the CO believes any probable violations exist, but don't debate or agree with the CO.
- Taking proactive steps to ensure compliance now could yield high dividends in the future.

Union Representative on Site

In 1935 Congress enacted the National Labor Relations Act (NLRA) to protect the rights of employees and employers. It is not Balestrieri's intent to interfere or restrain union activity, but rather to ensure that all visitors entering a jobsite follow safety protocol in accordance with all OSHA, EPA, and state and federal statutes.

The following is a series of tips to help Balestrieri employees better prepare for a worksite visit by union representatives:

- All visiting labor or union representatives are to be directed to the on-site Balestrieri field superintendent.
    - If the superintendent is not onsite – call them immediately and have them return to the jobsite.
- Your initial contact with a union field representative and the first moments of the site visit can be the most important. Stay calm and remain in control of the situation.
- Get the name of the individual and the union represented. Ask for a business card.
- Determine the purpose of the visit:
    - What do you want?
    - Why are you here?
    - What would you like to do while you are here?
- Ask who the union representative wishes to see.
- The union representative does not have the right to stop work. If during non-break times, ask the union representative to wait in an appropriate location, preferably a location that is nearby and does not have a view of the worksite.
    - Inform Ken Balestrieri that a union representative is on site and the purpose of their visit.
- Determine if the union representative has the appropriate PPE, which would allow him/her access to the jobsite.
    - If not, please advise the union representative that our safety policy requires appropriate PPE and that they are to obtain this PPE in order to access the jobsite.
    - **If the union representative is wearing the appropriate PPE, have them sign the Visitor Notification form and the PURPOSE OF THEIR VISIT. Complete the "time-in" and "time-out" section of the form.**
- Escort the union representative during the period of his/her visit. Stay within the area, but do not eavesdrop. When the break is over, interrupt the visit and politely state to the union representative that the break is over and that work must commence. Escort them off the jobsite. Pick up any handouts or business cards that the union representative purposely dropped while on the jobsite and return them to the office along with the signed visitor notification form.
- Make any additional notes and return the Visitor Notification form to our corporate office the day of the visit.

Guidelines for Union Picketing and/or Distribution of Leaflets

In 1935 Congress enacted the National Labor Relations Act (NLRA) to protect the rights of employees and employers. It is not the company's intent to interfere or restrain union activity, but rather to ensure that all visitors entering a jobsite follow safety protocol in accordance with all OSHA, EPA, state and federal statutes.

Please contact Ken Balestrieri (262) 215-9564 (or Emelia Riley (262) 215-3600 if Ken is not available) immediately if you observe any of the following:

- Mass gathering of union agents/representatives (i.e. three or more persons).
- Union representatives distributing union leaflets. Please obtain a copy of the leaflet and give it to a member of executive management.
- Unknown union representative(s) walking around your location.
- Union representatives displaying a union leaflet by posting it to an object like a chair, vehicle, tree, etc. or holding it up in the air for others to see.
- One or more union representative carrying picket signs. Please write down the text of the sign.
- Picket signs affixed to an object like a chair, vehicle, tree, etc. Please write down the text of the sign.
- Banners. Please write down the text of the banner. If a map of the job site is available, copy of map and draw the location of the banner on the map.
- Look closely at situation to determine if a Balestrieri employee is involved in the bannering activity.
    - **If yes, do not take any photographs or video as such actions may violate the National Labor Relations Act.**
    - **If no Balestrieri employee is involved, please take photographs and/or video of the banner. Ideally, the photographs should show the text of the banner, the location of the banner on the property (e.g., nearness to sidewalks, entrances, parking lots) and any activity in addition to the bannering.**
- Reports from anyone that the union representative engaged in confrontational behavior no matter how mild the confrontation may appear (i.e., comments, jokes, insults, raised voices, singing, chanting, physically obstructing path or vehicles, oral statements to customers who declined a handbill, etc.).
- Delivery persons refusing to deliver to your location.
- Any employee of any employer refusing to work or expressing reluctance to work.
- Violence or threats of violence.
- Inflatable rafts or other caricatures.

Fatigue Management in the Workplace

Balestrieri is committed to the health and safety of all people at the workplace. The purpose of this procedure is to establish a systematic process to identify and manage work health and safety risks associated with fatigue at Balestrieri workplaces.

This procedure applies to all Balestrieri workers, business groups and work activities. This plan is reviewed upon initial hire of all employees and also reviewed annually with the Health & Safety Policy.

Roles and responsibilities

Role	Responsibilities
Field Managers	• Utilize a risk assessment process to identify and manage any risks associated with fatigue within their area of responsibility. • Consult with workers during the identification and management of risks associated with fatigue. • Establish mechanisms to monitor and review controls implemented to manage fatigue within their area of responsibility. • Develop a plan for their area of responsibility to manage fatigue during an emergency. • Monitor fatigue levels of workers within their area of responsibility. • Ensure workers are not placing themselves at risk of injury as result of their levels of fatigue.
Field Supervisors	• Support managers to identify fatigue risk factors within their area of responsibility and implement appropriate controls to manage these risks. • Monitor fatigue levels of workers within their area of responsibility. • Ensure workers are not placing themselves at risk of injury as result of their levels of fatigue.
Executive Management	• Support managers with the risk assessment process to identify and manage fatigue related risks. • Support managers develop a plan to manage fatigue related risks during an emergency. • Provide tools for managing the identification of fatigue risk factors. • Provide tools to support individuals identify their current fatigue levels. • Undertake activities to support workers identify and manage non-work related fatigue risk factors.
Workers	• Support their manager to identify fatigue risk factors and appropriate controls to manage these risks. • Take responsibility for the management of their own fatigue levels, ensuring they turn up fit for work in a state that enables them to conduct their work in a safe manner. • Notify their line supervisor or manager if they believe their ability to safety undertake their duties is impaired due to fatigue.

What is fatigue?

Fatigue is a state of mental and/or physical exhaustion which reduces a person's ability to perform work safely and effectively. It can occur because of prolonged mental or physical activity, sleep loss and/or disruption of the internal body clock. Fatigue can be caused by factors which may be work related, non-work related or a combination of both and can accumulate over time.

The following table provides a summary of common causes of fatigue that may need to be considered during the management of risks associated with fatigue.

General causes	Work related causes	Non-work related causes
Inadequate amounts of restorative sleep (less than 7-8 hours)	Poor roster design	Family responsibilities, including sleep disruptions from young babies or ill family members
Long periods of being awake (more than 17 hours)	Extended hours of work and call-out requirements. Second Jobs	Social, community and sporting obligations
Sustained mental or physical effort	Aspect of tasks e.g. greater workload within a standard shift resulting in sustained mental and physical effort, and large amounts of driving	Inappropriate use of alcohol, medication or illicit drugs
Disruption to internal biological clock	Inadequate rest breaks or poor roster design (varies with task)	Stress from financial difficulties or personal relationships
Health and emotional issues	Work environment e.g. noise and temperature extremes, conflict with supervisor, managers or colleagues	Physiological e.g. age, medical or mental health conditions, sleeping disorders

What are the risks associated with fatigue?

Fatigue can adversely affect safety at the workplace. Fatigue reduces alertness, which may lead to errors and an increase in incidents and injuries. As a worker experiences rising fatigue levels, there are corresponding physiological, behavioral and emotional changes that may impact on the ability of a worker to safely undertake work. The following signs or symptoms may indicate a worker is affected by fatigue:

- Excessive yawning or falling asleep at work
- Short-term memory problems and an inability to concentrate
- Noticeably reduced capacity to engage in effective interpersonal communication
- Impaired decision-making and judgment
- Reduced hand-eye coordination or slow reflexes
- Other changes in behavior, for example repeatedly arriving late for work
- Increased rates of unplanned absence.

A fatigued worker may also experience symptoms not obvious to others including:

- Feeling drowsy
- Headaches
- Dizziness
- Difficulty concentrating
- Blurred vision or impaired visual perception

- A need for extended sleep during days off work.

Management of Fatigue

Managers must utilize a risk assessment process in accordance with the Hazard Identification and Risk Management Procedure to identify and manage the risks associated with fatigue. This involves the following steps:

- **Step 1 – Hazard identification**
  Identify the factors which may cause fatigue in the workplace.
- **Step 2 – Risk assessment**: **inherent risk**
  Assess the risks of injury from fatigue.
- **Step 3 – Control risks**
  Control the risks by implementing the most effective risk control measures reasonably practicable in the circumstances.
- **Step 4 – Risk assessment with control measures**: **residual risk**
  Re-assess whether the risks of injury from fatigue are adequately controlled.
- **Step 5 – Monitor and review control measure**s
  Review risk control measures to ensure they are working as planned.

When undertaking the risk assessment, it is important for managers to ensure workers are consulted at each of step of the process. This encourages everyone to work together to identify fatigue risk factors and implement effective control measures. Consultation also helps to raise awareness about the risks associated with fatigue.

Identification of factors that may cause fatigue

The first step in the risk management process is to identify all reasonably foreseeable factors which could contribute to and increase the risk of fatigue. Fatigue is often caused by a number of inter-related factors which can be cumulative. Common factors that may contribute to fatigue are:

- Work schedules which limit the time workers can physically and mentally recover from work. This may include workers who undertake shift work, night work, work extended hours or are not able to take regular breaks.
- Job demands, particularly work that requires extended periods of work that is physically or mentally demanding.
- Sleep, including the length of sleep time, the quality of sleep and the time since sleep.
- Environmental conditions, such as exposure to heat, cold, vibration or noise, can make workers tire quicker and may impair performance.
- Non-work related factors, such as a worker's lifestyle, family responsibilities or health may all increase the risk of fatigue.

Methods that managers may utilize to identify whether there are any of the above risk factors affecting their workers include:

- Consulting with workers
- Examining work practices and systems of work
- Examining human resource records and data such as timesheets and overtime payments
- Incident data and the findings of incident investigations
- Seeking advice and information from other relevant experts.

Assessing the risk

Once a manager has identified factors which may cause fatigue, they should undertake an assessment of the risk to consider:

- Where, which and how many workers are likely to be at risk of becoming fatigued

- How often fatigue is likely to occur
- The degree of harm which may result from fatigue
- Whether existing control measures are effective
- What action should be taken to control the risk of fatigue
- How urgently action to control the risk needs to be taken.

When assessing risks, contributors to fatigue should not be considered in isolation. For example, job demands, hours of work and environmental conditions may all increase the risk of fatigue in the workplace. The risks of injury from fatigue may increase if workers work long daily hours in a physically or mentally demanding job.

Controlling the Risk

The best way to control the health and safety risks arising from fatigue is to eliminate the factors identified as causing fatigue at the source. If elimination is not reasonably practicable, the risks must be minimized. The determination of the most effective controls to manage the risks associated with fatigue should always be identified in consultation with workers where possible.

This section outlines common control measures that may be considered based on the factors identified as contributing to or increasing the risk of fatigue.

Work Scheduling

Control measures for fatigue risks which can be built into the work scheduling may include:

- Designing working hours and rosters to allow for good sleep opportunity and enough recovery time between work days or shifts for travelling, eating, washing and sleeping. Where possible, a minimum of a 10 hour break should be provided between shifts
- Ensuring workers have and take adequate and regular breaks to rest, eat and rehydrate
- Avoiding scheduling high-risk work during low body clock periods (i.e. between 2am and 6am)
- Establishing plans to manage workload change caused by machinery breakdowns or planned and unplanned absences
- Managing overtime, shift swapping and on-call duties
- Implementing processes to manage accrued leave balances and requests for leave
- Considering future rosters and schedules when approving request for leave or shift swaps, and ensuring leave is reflected in rosters
- Considering alternative options to face-to-face meetings, for example teleconferencing or video conferencing so workers are not required to spend time travelling to meetings.

Shift Work

Shift Work and Rosters

Balestrieri recognizes that extended hours and unusual shift work, which is sometimes necessary, can create special safety and health concerns for employees. Extended hours and unusual shift work may be more stressful physically, mentally and emotionally because they disrupt the body's regular schedule, meaning increased fatigue, stress, lack of coordination and lack of concentration.

Signs of employee stress due to extended hours and/or unusual work shifts include, but are not limited to:

- Sleepiness
- Irritability
- Reduced alertness
- Lack of coordination
- Lack of concentration

- Memory loss
- Lack of motivation
- Increased susceptibility to illness
- Depression
- Headache
- Giddiness
- Loss of appetite and digestive problems

Consideration should be given to implementing additional specific control measures when planning work schedules and rosters for specific work arrangements, including shift and night work, seasonal, emergencies and on-call arrangements. These may include:

- Structuring shifts and designing work plans so work demands are highest towards the middle of the shift and decrease towards the end
- Avoiding morning shifts starting before 6am where possible
- Avoiding split shifts or if there is no alternative to split shifts consider their timing, for instance whether they are likely to disrupt sleep
- Setting shift rosters ahead of time and avoiding last-minute changes, to allow workers to plan leisure time
- Allocating shift and night workers consecutive days off to allow for at least two full nights' sleep
- Overlapping consecutive shifts to allow enough time for communication at shift handovers
- Minimizing overtime allocation after afternoon or night shifts
- Consider if night work is necessary and rearrange schedules so non-essential work is not carried out at night
- Keeping sequential night shifts to a minimum. If sequential night shifts do need to occur, it is best to group them together in the overall roster cycle, and use a forward rotational shift cycle (mornings – afternoons – evenings – mornings)
- Developing plans to manage the risks associated with fatigue during an emergency
- Providing information to shift workers including tips for them to prevent and manage the risk of fatigue.

Supervisors at Balestrieri are trained to recognize signs and symptoms of health effects associated with extended hours and unusual shift work, and monitor employees for signs of employee fatigue and/or impairment. When a supervisor finds a problem, the employee will receive adequate time for rest and recuperation, if necessary. Balestrieri will provide micro breaks, in addition to regular lunch, dinner or scheduled breaks, for employees required to work extended hours and/or unusual shifts, to allow employees to move about, change positions, eat or drink, and shift concentration.

Job Demands

Control measures to prevent or minimize the risk of fatigue associated with job demands can include:

- Ensuring fit-for-purpose plant, machinery and equipment is used at the workplace (e.g. ergonomic furniture, lifting equipment)
- Redesigning the job to limit periods of excessive mental or physical demands
- Considering job rotation to limit a build-up of mental and physical fatigue
- Developing contingency plans for potential situations where workers may have to unexpectedly work longer hours, more shifts or a long sequence of shifts
- Planning for expected changes in work flow including anticipated peaks and troughs throughout the year.

Environmental Conditions

Control measures to prevent or minimize the risk of fatigue associated with environment conditions can include:

- Avoid working during periods of extreme temperature or minimize exposure time through job rotation
- Provide a cool area where workers can take a rest break and rehydrate in hot work environments
- Consider installing ventilation and mechanical cooling devices in hot, small and enclosed spaces
- Provide adequate facilities for rest and meal breaks
- Install adjustable, low-vibration seats in machinery and vehicles and provide low vibration hand held equipment
- Consider the provision of Personal Project Equipment (PPE) such as cool vests
- Provide and maintain a workplace which is well lit, safe and secure.

Non-Work Related Factors

Workers have a duty to take reasonable care for their health and safety and this includes enough sleep so they can arrive fit for work. Balestrieri undertakes a range of activities to support workers manage non-work related factors that may impact on fatigue. These activities include:

- Consulting workers about factors impacting on their personal fatigue levels
- Providing education and awareness to workers on the risks associated with fatigue, how it relates to their health and safety duties and strategies to manage their personal fatigue risks
- Establishing health and wellbeing programs to address risk factors associated with fatigue.

Review Requirements

Once control measures are implemented, managers should establish mechanisms to monitor and review the controls, to ensure they continue to be effective in managing fatigue. Consideration may be given to implementing trial periods for any new work schedules and encouraging workers to provide feedback on their effectiveness.

Managers need to consider the risks associated with fatigue when determining the frequency of reviews, with high-risk hazards needing more frequent assessments. Control measures should also be reviewed when:

- There is any indication risks are not being controlled
- New tasks, equipment, procedures, rosters or schedules are introduced
- Changes are proposed to the work environment, working hours, schedules and rosters
- There is an incident due to fatigue at the workplace
- New information regarding fatigue becomes available
- If a health and safety representative requests a review

Training

All Balestrieri workers are required to participate in awareness training on the risks associated with fatigue and the strategies they may implement to address these risks.

Accident Prevention, Reporting, Investigation and Analysis

Introduction

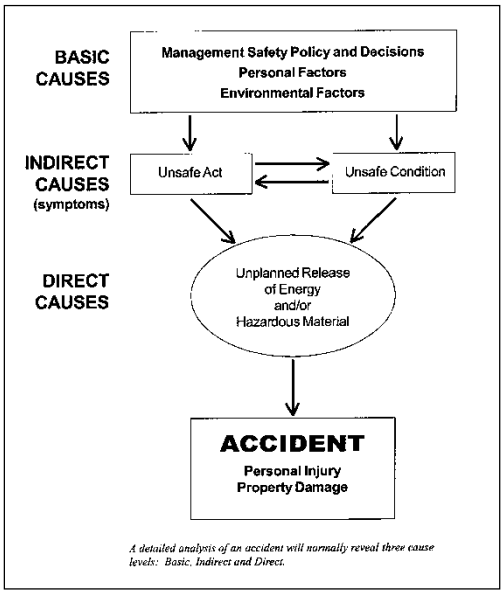
Thousands of accidents occur throughout the United States every day. The failure of people, equipment, supplies or surroundings to behave or react as expected causes most accidents. Accident investigations determine how and why these failures occur. By using the information gained through an investigation, a similar or perhaps more disastrous accident may be prevented. Balestrieri conducts accident investigations with accident prevention in mind. Investigations are NOT to place blame.

An accident is any unplanned event that results in personal injury or in property damage. When the personal injury requires little or no treatment, it is minor. If it results in a fatality or in a permanent total, permanent partial or temporary total (lost-time) disability, it is serious. Similarly, property damage may be minor or serious. Balestrieri will investigate all accidents regardless of the extent of injury or damage.

Accidents are part of a broad group of events that adversely affect the completion of a task. These events are incidents. For simplicity, the procedures discussed in later sections refer only to accidents. They are, however, also applicable to incidents.

Accident Prevention

Accidents are usually complex. An accident may have ten or more events that can be causes. A detailed analysis of an accident will normally reveal three cause levels: basic, indirect, and direct. At the lowest level, an accident results only when a person or object received an amount of energy or hazardous material that cannot be absorbed safely. This energy or material is the DIRECT CAUSE of the accident. The direct cause is usually the result of one or more unsafe acts or unsafe conditions, or both. Unsafe acts and conditions are the INDIRECT CAUSES or symptoms. In turn, indirect causes are usually traceable to poor management policies and decisions, or to personal or environmental factors. These are the BASIC CAUSES.



A detailed analysis of an accident will normally reveal three cause levels: Basic, Indirect and Direct.

In spite of their complexity, most accidents are preventable by eliminating one or more causes. Accident investigations determine not only what happened, but also how and why. The information gained from these investigations can prevent recurrence of similar or perhaps more disastrous accidents. Accident investigators are interested in each event as well as in the sequence of events that led to an accident. The accident type is also important to the investigator. The recurrence of accidents of a particular type or those with common causes show areas needing special accident prevention emphasis.

Accident Reporting

Employees must report any work-related injury, illness or near miss to the job site superintendent. An employee should make no comment, provide no details or express any opinion as to the cause of the incident, who was at fault, responsible for the incident or any intent of the company regarding the incident. The employee will cooperate fully with the investigation.

The safety coordinator, with the assistance of the jobsite superintendent, will investigate any personal injury accident, property damage claim or vehicle accident associated with the job and will complete an Accident Investigation Report.

Accident Investigation

To thoroughly identify and recognize the hazards or areas responsible for accidents, an accident investigation must take place with the proper equipment being available to assist in conducting the investigation. It is the responsibility of the on-site superintendent to complete the Accident Investigation Form and notify management what type of equipment will be needed (located in all the Foreman Books).

The actual procedures used in a particular investigation depend on the nature and results of the accident. Key areas to cover include:

What happened?

The superintendent should describe what took place that prompted the investigation: an injury to an employee, an incident that caused an operational delay, damaged material or any other conditions recognized as having a potential for loss or delay.

Why did the accident happen?

The superintendent must obtain all the facts surrounding the occurrence, identify and assess the evidence:

- What caused the situation to occur?
- Who was involved?
- Were the employee(s) qualified to perform the functions involved in the accident or near miss?
- Were the employees properly training?
- Were proper operating procedures established for the task involved?
- Were procedures followed? If not, why not?
- Where else could this or a similar situation exist?
- How can this situation be corrected?

Accident Analysis

What should be done?

The superintendent is responsible for the collection, preservation and security of evidence:

Which aspects of the operation or process require additional attention? The purpose of this investigation is not to establish blame, but to determine what type of constructive action can eliminate the cause(s) of the accident or near miss. Use the following steps in this method:

- Define the problem (what happened?).
- Establish the norm (what should have happened?).
- Identify, locate and describe the change (what, where, when, to what extent?).
- Specify what was and what was not affected.
- Identify the distinctive features of the change.
- List the possible causes.
- Select the most likely causes.

What actions have been taken?

The superintendent should note actions already taken to reduce or eliminate the exposure being investigated, along with those remaining to be addressed. Any interim or temporary precautions should also be documented. Any pending corrective action and reason for delaying its implementation must be identified.

Corrective action should be identified in terms of not only how it will prevent a recurrence of the accident or near miss, but also how it will improve the overall operation. The solution should be a means of achieving not only accident control, but also total operational control.

Balestrieri recognized that a thorough investigation of injuries, illnesses, incidents and near misses will help you identify causes and needed corrective actions, and can help you determine why accidents occur,

where they happen, and any accident trends. This information is critical to preventing and controlling hazards and potential accidents.

Recording and Reporting of Injuries and Illnesses

All recordable injuries and illnesses for each job are recorded on the Foreman Reports (Daily Logs) at the completion of the day. Daily logs can be found in the job files located in the offices of Balestrieri. Records shall be made available, as authorized, upon request.

No organization can be successful without adequate record keeping. Balestrieri recognizes that by learning from our past experience we can make successful corrections for future operations. Records of accidents, work-related injuries and property losses also serve a similar purpose.

Proper record keeping aids Balestrieri in identifying the causes of accidents and injuries and the control procedures that should be instituted to prevent losses from recurring (Please refer to the Hazard Prevention and Control section of this program).

These records also provide Balestrieri with one measure for evaluating the success of safety and health activities. Success normally means a reduction or elimination of employee injuries and illnesses during a calendar or fiscal year. Success can also be measured in terms of reduced overtime costs and absenteeism.

In accordance with the ILHR/OSHA record keeping requirements, information on occupational injuries and illnesses are recorded and maintained for at least five years. The following steps are required for the company's record keeping system:

- Required incidents must be verbally reported to OSHA within 8 hours.
- Required incidents must be verbally reported to the client (host facility) within 24 hours.
- All job site Foreman Books contain an accident form, which is to be completed by the Superintendent at the first opportunity and returned to the company's safety department.
- Obtain a First Report of Injury for every work-related injury or illness.
- Record each injury or illness on the OSHA 300 Log within 7 calendar days of receiving notification of the injury or illness, and record within the Summary of Occupational Injuries and Illnesses (OSHA Form WC-12).
- Every year, a summary of the OSHA Form WC-12 is prepared and posted on February 1 and kept posted where employees can see the summary until April 30 of each year.
- Throughout the year, the safety coordinator will regularly review these records. Record review can also help identify hazardous areas in the workplace and pinpoint where corrective action is required.
- Medical records are kept during the time of employment plus 30 years.
- OSHA 300A summary is signed by a company official.

Return to Work (Fitness for Duty)

Balestrieri, as a participant in the construction industry, is fully aware that this industry is a complex, physically demanding and hazardous environment. Workers in the construction industry must be physically, mentally and emotionally qualified to perform their jobs safely. Employee fitness not only affects their performance, but their co-workers' well-being. Therefore, Balestrieri has instituted the following Return to Work Program:

The Return to Work Program is designed to minimize the disruption and uncertainty that can accompany an on-the-job injury for both the company and our employees. It is our goal to maintain a safe workplace for our employees. When an injury does occur, our Return to Work Program helps make the process of returning to work as smooth and efficient as possible. This process includes the employee, doctor and management to ensure the health and recovery is always given top priority.

Everyone should be alert for potential accident and strive to eliminate them. If you are aware of an unsafe act or condition, it should be reported immediately to your supervisor to be addressed. This action may prevent an injury from occurring. If an injury does occur, the injury must be reported immediately to a supervisor.

Any personal information received or collected that can lead to the identification of an injured worker will be held in the strictest confidence. Information of a personal nature will be released only if required by law or

with the approval of the employee who will specify the nature of the information to be released and to whom it can be released.

When an on-the-job injury occurs, the employee can expect prompt medical attention. If the injury results in a prolonged absence from work, we will work with the injured employee to facilitate return to work as soon as possible. The Return to Work Program will include offering a medically approved light-duty transitional assignment in anticipation of a return to full duty.

Light-duty work assignments are:

- **Containment Safety Watch** – Responsibility to ensure that a project containment area is kept leak-free and advising the on-site superintendent of any problems with the containment.

- **Jobsite Security Watch** – Responsible for keeping unauthorized building occupants (and other subcontractors) out of the asbestos/lead/mold work area and containment.

- **Safety Spotter** – Responsible for patrolling jobsite for any apparent safety hazards and advising the on-site superintendent of any violations or unsafe conditions.

Training and Safety Meetings

Balestrieri understands that training is an essential component of an effective safety program. Training helps identify the safety and health responsibilities for all employees at the site.

Employee training programs have been designed to ensure that all employees understand and are aware of the hazards to which they may be exposed and the proper methods of avoiding such hazards. All Balestrieri training records are kept for a minimum of 3 years.

Supervisory Training

Superintendents are trained to understand the key role they play in job site safety and to enable them to carry out their safety and health responsibilities effectively. Superintendents are trained to understand the following objectives:

- The need to establish and maintain safe and healthful working conditions.
- Anticipate and identify potential hazards on the job site.
- Understand the hazards associated with the job site, their potential effects on employees and the rules, procedures and work practices for controlling exposure to those hazards.
- Maintain physical protection in their work areas.
- Reinforce employee training on the nature of potential hazards in their work and on needed protective measures through continual performance feedback and through enforcement of safe work practices.
- Completely understand their safety and health responsibilities for employees under their direction.
- How to investigate accidents in order to take appropriate corrective and preventative action.

Supervisory Safety Meetings

Top management will plan and arrange for meetings to be held once a month. Top management and all superintendents will attend and participate in this meeting to review and discuss jobsite accidents, near misses, required training, unsafe conditions/acts noted on safety inspections, etc.

Job Site Safety Meetings

The superintendent will conduct weekly on-the-job safety meetings and present the tool box talk for that week. Meetings should last no longer than fifteen minutes and include timely information such as:

- Accidents/injuries/near misses and what needs to be done to prevent them from reoccurring
- Review of safety rules not being followed
- Proper use and care of personal protective equipment
- Input from employees on how job safety can be improved
- New products/methods being used

- Safer methods to utilize on the jobsite

The superintendent will record the meeting and those in attendance by obtaining employee signatures. The original form (tool box talk) will be sent to the main office. All employees on the job site are expected to attend and participate in the weekly job safety meeting. Areas that concern safety on the job should be brought forward during these meetings.

Employee Training

Management understands and fully accepts the fact that employees should be able to perform their jobs in a safe working environment. Hazardous situations can be avoided or made less hazardous if employees receive appropriate training and instruction. Employees receive the following training:

- Proper job instruction on safe work procedures and how these work procedures protect against exposure to hazards.
- Lead awareness training, which is conducted annually and prior to initial work in suspected lead environments. All lead awareness training is documented.
- GHS/Hazardous Communication
- Proper safety practices and precautions pertaining to electrical safety, and establishing safe working distances from electrical areas.
- The proper use of personal protective equipment (PPE), including knowing when PPE is necessary, what PPE is necessary; how to properly don, doff, adjust & wear PPE; the limitations of PPE; the proper care, maintenance, useful life & disposal of PPE. Retraining is performed annually and required when one of the following conditions occurs; the workplace changes, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. Upon completion of training employees will receive a certificate stating the following; employee name, dates of training, and proper PPE certification subject.
- Incident investigation- the line of communication and responsibility for immediately reporting accidents/near misses.
- Aerial lift safety training, and ladder and fall protection training is required for all employees/operators who will be utilizing elevated platforms/aerial lifts.
- Hazwoper 40 hour training (29 CFR1910.120) is conducted by a certified trainer. Trained personnel undergo an annual refresher course on or before the initial training date of expiration.
- General overview of operation, procedures, methods and potential hazards.
- Specific safety rules applicable to the employee's job and duties.
- Pertinent agency safety rules and OSHA safety and health standards.
- Eye wash station usage.
- First aid supplies, equipment and training.
- Emergency plan.
- Vehicle safety.
- Personal work habits.

Safety Infraction Compliance Enforcement

Any employee conduct, in the opinion of Balestrieri Environmental & Development, Inc., which interferes with or adversely affects our business, is sufficient grounds for disciplinary action. This action can range from oral warnings to immediate discharge. Depending on the conduct, it is our general policy to take disciplinary steps in the following order: Verbal warnings; Written warnings (Site Discipline Forms found in project binder); Suspension and/or Termination.

To decide on the appropriate action, we may consider: The seriousness of an employee's conduct; An employee's employment record; An employee's ability to correct the conduct; Actions the company has taken for similar conduct by other employees; How an employee's action affects customers and other circumstances.

Some conduct may result in immediate dismissal. Examples are as follows: Failing to follow company safety policies; Theft of client or company property; Excessive tardiness or absenteeism; Arguing or fighting with customers or co-workers; Using or possessing alcohol or illegal drugs at work; Coming to work under the

influence of alcohol or illegal drugs; Failing to carry out reasonable job assignments; Making false statements in a job application; Violating company rules and regulations; Failing to attend a company scheduled asbestos or lead training class/refresher; Unlawful discrimination or harassment.

Contractor/Subcontractor Relationship for Safety and Health

Maintaining safety and health on construction projects is complicated by the presence on site of many workers, work crews, and trades people – as well as the ever-changing nature of construction work. The contractual and working relationship between our company and other contractors is also complex. Every effort is made by the company project manager and site superintendent to carefully coordinate the correct lines of authority, reporting relationships and work activities. The safety and health of workers being the paramount concern of all involved. Balestrieri will remove employees not having an asbestos and/or lead license(s) from a job site if another contractor/subcontractor at the job site is conducting work with asbestos and/or lead.

Subcontractor Management

Subcontractors are required by Balestrieri to be in compliance with health, safety and environmental (HSE) standards required by governing jurisdictions (federal, state, and local). Balestrieri requires a competent person be onsite during subcontractor activities at all times. Prior to the start of work Balestrieri and the subcontractor will establish clear lines of communication as well as define clear roles, responsibilities, and establish an emergency action plan. Balestrieri routinely conducts through its field safety management team, periodic inspections of job sites in which subcontractors, suppliers, and/or vendors are being utilized. Subcontractors must have the appropriate licenses, registrations, and insurance to complete their work.

Field supervision will have daily knowledge of subcontractor tasks/duties. Field supervision will have control over site safety, security, and accountability. Field management will conduct daily job safety analysis (JSA)/Tailgate, discuss safe plan of action i.e. (emergencies, evacuations, hazards, and controls).

All near-miss, unsafe work conditions, injuries/accidents including non-emergent must be immediately reported and documented to/by the Balestrieri superintendent on the jobsite. Balestrieri field safety management will be immediately notified followed by investigation and corrective action.

Balestrieri will review subcontractors OSHA 300 logs and EMR rates dating back three years.

Evaluating the Company Safety Program

In order to maintain our health and safety program, a periodic review of each critical component is performed by the safety coordinator and outside, independent sources. When a need is identified, a basis for a new health and safety objective or change in an existing objective is required.

Employee Safety Policies

Code of Safe Practices

Management and employee commitment, involvement and accountability form the core of the company's safety program. It is understood by all employees that the responsibilities for safety and health are shared. All employees of Balestrieri must abide by the following safe practices:

General Safety

- Responsible for their full and genuine cooperation in all aspects of the safety and health program – including compliance with all rules and regulations – and or continuously practicing safety while performing their jobs.
- Employee involvement provides the means by which workers develop and/or express their own commitment to safety and health protection for themselves and for their co-workers.
- Employee suggestions to improve this program are welcomed and encouraged.
- Protect yourself! Refrain from any unsafe act or working under unsafe conditions.
- Report any equipment or condition considered to be unsafe to your foreman immediately.
- Identify contents of pipelines prior to initiating any work that affects the integrity of the pipe.
- Report any unsafe situation or condition to your foreman immediately.
- Immediately report all near-accidents, accidents or injuries to your foreman.

Personal Safety and Conduct

- Perform only job tasks for which you have been properly trained to do in a safe and proper manner.
- All work areas are to be physically inspected prior to work beginning.
- Employees will not be allowed to work if they are in a temporarily unfit condition.
- Be courteous.
- Avoid distracting others as distractions may cause or contribute to accidents.
- Horseplay, running or throwing items and undue hasty actions are prohibited.
- Acts that may tend to have an adverse influence on the safety or well-being of employees is prohibited.
- Directly refusing a superintendent's order to use safety equipment will result in suspension or immediate dismissal.
- Directly refusing a superintendent's order to abide by safety rules will result in suspension or immediate dismissal.
- Fighting on the job site during working and non-working hours will result in suspension or immediate dismissal.
- Use of alcohol or drugs on the job site during working and non-working hours will result in immediate dismissal.

Housekeeping Practices

- Good housekeeping practices improve the safety for everyone.
- Means of egress shall be kept unblocked, well lighted and unlocked during work hours.
- Aisles must be kept clear at all times.
- Exit doors must comply with fire safety regulations during work hours.
- Stairways should be kept clear of items that can be tripped over.
- Areas underneath stairways that are egress routes should not be used to store combustibles.
- Materials and equipment will not be stored against doors or exits, fire ladders or fire extinguishers.
- Aisles must be kept clear at all times.
- Work areas should be maintained in a neat, orderly manner.
- Trash and refuse are to be thrown in proper waste containers.
- When you create clutter, clean it up.
- When someone else leaves clutter in the work area, clean it up and report this to the foreman.

- All spills shall be wiped up promptly.
- All chemicals are to be properly stored and in appropriate closed containers to prevent spill.
- All containers are to be labeled with the name of the contents they contain.

Emergency – Stop Work Authority

- In the case of an emergency, employees have the authority to stop work. Above all, the safety of employees is of the utmost importance. Employees will not be reprimanded for stopping work in the event of an emergency.
- Stop work, break open containment area in the case of any emergency, direct employees to the nearest exit, and evacuate the containment and job site. Assemble at the pre-determined designated location.
- Only trained workers may attempt to respond to a fire or other emergency. Employees are provided annual training on stop work authority.
- Employees reserve the right to stop work when the control of the health, safety, and environment are not clearly established or understood. Follow the rules of: stop, notify, correct, and resume.
- When the risk is assessed, understood, and any issue has been addressed, work may begin again.
- Employees will not be reprimanded for stopping work within good reason and with good intentions for all employees.
- The field manager will be the designated person to stop work and assess the situation. If needed, the project manager should be notified who will then notify executive management.
- Any and all stop work interventions will be documented and submitted to the safety manager, human resources manager, and project manager. They will be reviewed and resolved based on their overall judgment and evaluation of the issue at hand.
- The safety manager, project manager, and human resources manager will assess the situation and conduct a follow up meeting with the employees involved.

Material Handling

- Always use the proper lifting technique. When lifting, bend you knees, grasp the load firmly, and then raise the load with your legs, keeping the back as straight as possible.
- Never attempt to lift or push an object that is too heavy.
- Don't twist with a load – instead move your feet.
- Remember to GET HELP for heavy loads. Contact your foreman.
- Never stack material in an unstable manner.
- When carrying material, caution should be exercised in watching for and avoiding obstructions, loose material and tripping hazards.
- Inspect pallets and their loads for integrity and stability before loading or moving.

Tools and Equipment

- Be responsible for your own hand tools.
- Use all tools in a safe and proper manner.
- Disconnect all power tools, negative air units, and HEPA vacuums when changing blades, clearing jams, making adjustments or cleaning.
- Bypassing, misusing or making safety devices or equipment inoperative is forbidden.
- Inspect motorized vehicles and other mechanized equipment daily or before use.
- When using motorized vehicles, shut off engine, set brakes and block wheels prior to loading or unloading.
- Do not store compressed gas cylinders in areas that are exposed to heat sources, electric arcs or high temperature lines.
- Do not use compressed air for cleaning unless the pressure is less than 30 psi.
- Do not use any faulty or worn hand or power tool.
- Never use a metal ladder in an area where the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors.
- Follow lockout/tagout procedures when necessary.

Electrical Hazards

- Report exposed wiring and cords that are frayed or have deteriorated insulation so that they can be repaired or replaced promptly.
- Always treat every piece of exposed deenergized parts as being live when working on or near them.
- Caution and proper safety precautions should be followed when working on or near exposed energized parts, and only qualified personal are allowed to work on energized parts.
- Maintain sufficient access and working space around all electrical equipment to permit ready and safe operations and maintenance.
- Maintain a clearance distance in compliance with OSHA regulations when working under overhead power lines.
- All vehicles, personal, and mechanical equipment should maintain a minimum of a 10 foot clearance when working around components that are 50kV.
- Only qualified employees are able to approach electrical components ranging from 300V-140kV, but should do so in compliance with minimum approach distances established by OSHA.
- State employees can only enter spaces containing exposed energized parts if illumination is provided.
- Do not use any portable electrical tools and equipment that are not grounded or double insulated.
- All electrical equipment should be plugged into appropriate wall receptacles or into an extension of only one cord of similar size and capacity.
- Three-pronged plugs should be used to ensure continuity of ground.
- All cords running into walk areas must be taped down or inserted through rubber protectors to preclude them from becoming tripping hazards.
- Circuits energizing parts that have been de-energized should be tagged and locked out.
- Workers in a confined and/or enclosed environments where electrical hazards are present are provided with protective shields, protective barriers, and insulating materials.
- Conductive apparel should not be worn, unless insulated or made non-conductive through wrapping or covering.

Personal Protective Equipment

- Keep all protective clothing in good order.
- Work boots will be worn on the job site at all times.
- Wear hearing protection in all areas identified as having high noise exposure.
- Goggles or a face shield must be worn when grinding, welding, etc.
- All workers will be required to wear the necessary safety equipment as appropriate for the job site.

Hazardous Materials

- Do not enter into a confined space unless tests for toxic substances, explosive concentrations or oxygen deficiencies have been taken.
- Always keep flammable or toxic chemicals in closed containers when not in use.
    - See Lockout/Tagout Space Permit.
- Do not eat in areas where hazardous chemicals are present.
- Be aware of the potential hazards involving various chemicals stored or used in the workplace.
- Always read the warning label and refer to the safety data sheet (SDS) when needed.
- Cleaning supplies must be stored away from edible items on kitchen shelves.
- Cleaning solvents and flammable liquids must be stored in appropriate containers.
- Solutions that may be poisonous or not intended for consumption should be kept in well-labeled containers.

Safety Meetings and Inspections

- Cooperate with safety inspections and accident reports.
- The foreman or project manager will conduct both formal and informal safety meetings as they apply to each specific job site once a week.

Bloodborne Pathogens Standard

Balestrieri Environmental & Development, Inc. committed to providing a safe and healthful work environment for our entire staff. In pursuit of this endeavor, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Bloodborne Pathogens."

Balestrieri's ECP includes the following practices and procedures:

- Employee training and communication of ECP
- Determination of employee exposure.
- Implement exposure control practices by utilizing appropriate universal precautions, PPE, and housekeeping practices.
- Hepatitis B vaccination upon employee request, though not required.
- Post-exposure evaluation and follow-up
- Record keeping
- Evaluate exposure incidents to verify effectiveness.

Cold Weather Safety

Prolonged exposure to freezing or cold temperatures can result in serious health problems such as trench foot, frostbite, and hypothermia. In extreme cases, including cold water immersion, exposure can result in death.

Danger signs include uncontrolled shivering, slurred speech, clumsy movements, fatigue and confused behavior. If these signs are observed, call for emergency help.
How to protect personnel:

- Encourage personnel to wear proper clothing for cold, wet, and windy conditions, including layers so they can adjust to changing conditions.
- Be sure that personnel take frequent, short breaks in warm dry shelters to allow the body to warm up. Try to schedule work for the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system – work in pairs so that one worker can recognize danger signs.
- Drink warm fluids (avoid caffeine). Eat warm, high calorie goods such as hot pasta dishes.

Heat Exhaustion and Heat Stroke

Heat exhaustion is caused by the loss of body salt, and heat stroke occurs when the body mechanism is not able to keep the system cool. Following are the symptoms and the steps we should take to avoid either.

Heat Exhaustion Symptoms:

- The first signs of heat exhaustion are dizziness, weakness, headache, blurred vision, nausea and staggering. The face becomes pale, there is profuse sweating, the pulse is weak, and breathing is shallow. The person may become unconscious.

Heat Stroke Symptoms:

- The victim develops a severe headache, the face is red or flushed the skin is hot and dry, there is no sweating, and the pulse is strong and very rapid. The person has a high fever (105o—106oF), dizziness or fainting, difficulty breathing, pinpoint pupils, unusual behavior and may become unconscious. This is followed by convulsions, coma, and sometimes death. Call for medical help immediately.

Prevention:

- Stop to rest in the shade, do heaviest work during cooler parts of the day
- Avoid prolonged sun exposure when possible
- Wear light weight and light colored clothing
- Drink plenty of fluids, such as water & Gatorade even when not thirsty
- Call for medical attention

Remember, Please Use Common Sense!

Frequent violation of the stated Code of Safe Practices will be grounds for suspension or immediate dismissal.

Drug and Alcohol Policy

Safety is the number one concern of our employees and our customers. To provide the safest possible work environment, a drug-free work place must be established. Balestrieri will not tolerate employees manufacturing, distributing, dispensing or using a controlled substance in the work place. Balestrieri will ensure this through a comprehensive drug and alcohol policy.

Any individual who conducts business for Balestrieri or applies for a position with the company is covered by our drug-free workplace policy. Our policy includes, but is not limited to, full-time employees, part-time employees, volunteers, contractors, interns and applicants. Our drug-free workplace policy is intended to apply whenever anyone is representing or conducting business for Balestrieri. Therefore, this policy applies during all working hours, whenever an individual is conducting business or representing the company, and while an individual is on call, on company property and at company-sponsored events.

Substance Abuse Prevention Program

There are three key elements to the company's program.

- The first is to define the components of testing. These include pre-employment, post-accident, return to duty and for-cause. The substances to be tested for are based on the Department of Transportation (DOT) 10 panel program. A testing protocol has been established by the contracted laboratory to protect the privacy of the individual employee while preserving the integrity of the sampling.
- The second key element is training of both workers and supervisors in detecting impairment in an employee. Supervisors are taught how to approach and confront a suspected impaired worker.
- Finally, the company participates in a substance abuse program with a local medical facility when and if it becomes necessary.

Testing Protocol

Balestrieri reserves the right to test for drug and alcohol use as follows:

- When behavior, appearance or performance indicates an employee is under the influence of a controlled substance.
- As part of a pre-employment physical examination. A positive test is grounds for candidate rejection.
- On a for-cause basis, where reasonable suspicion of abuse exists.
- Post-accident and on return to duty.
- On a random basis.

Additional testing may be required of Balestrieri's employees pursuant to state and federal law in the event Balestrieri participates in any state or local public works project.

Disciplinary Protocol

- Violation of the above policy is grounds for immediate discharge. The management of Balestrieri has the obligation to the entire work force to provide a safe working environment.
- The company reserves the right to test for violations of this policy as follows:
    - When behavior, appearance or performance indicates an employee is under the influence of a controlled substance
    - As part of a pre-employment physical examination. A positive test will be grounds for rejection of the candidate.
- On a for-cause basis, where reasonable suspicion of abuse exists.
- All test results will be kept confidential. Balestrieri will contract with an outside-qualified testing facility, staffed with properly trained personnel.
- Refusal to comply with an order for testing will be considered as insubordination, which is grounds for disciplinary action, up to and including discharge.
- Alcoholism has been viewed as a handicap under the Rehabilitation Act of 1973. This means any individual who identifies him/herself, as an alcoholic may not be discriminated against in employment

decisions, solely on this basis. This does not mean that the consumption of alcohol or working under the influence of that drug will be tolerated in the work place.

- Any employee who is taking any authorized medication under the direction of a physician shall report such medication to the designated person. The same will be done if an employee feels that the consumption of an authorized medicine may affect the results of a drug test.
- To outline the problems and potential problems of drug consumption, included in this drug policy is the effects controlled substance and alcohol has upon the body.

Firearm and Weapon Policy

Possession of any firearms or other weapons is prohibited on Balestrieri premises, in Balestrieri vehicles or on the employee's person while engaged in company business outside of company premises, regardless of whether possession of the firearm or weapon is permitted under applicable state or federal law.

Any possession, use, display, brandishing, gesture or intimidation with a firearm or weapon on Balestrieri premises is a violation of the Balestrieri's Code of Business Conduct subject to disciplinary action up to and including dismissal.

Notwithstanding the foregoing, storage of a lawfully possessed weapon in personal vehicle on Balestrieri premises is permitted when, and only to the extent that, state law prohibits Balestrieri from banning such storage.

Tobacco-free Workplace Policy

A tobacco-free environment helps create a safe and healthy workplace. Smoking and secondhand smoke are known to cause serious lung disease and cancer. Balestrieri recognizes the hazards caused by tobacco use and exposure to secondhand tobacco smoke. Our policy to provide a tobacco-free environment for all employees and visitors was established to keep a safe and healthy workplace environment. This policy covers the smoking of any tobacco product and the use of oral tobacco products, "spit" tobacco and e-cigarettes, and it applies to both employees and non-employee visitors of Balestrieri.

No use of tobacco products including cigarettes and "spit" tobacco or e-cigarettes is permitted on company premises or on company jobsites at any time.

- Employees will be informed of the Balestrieri Tobacco-free Policy through signs posted throughout properties owned and operated by Balestrieri, including company owned vehicles and jobsites.
- Visitors will be informed of the Balestrieri Tobacco-free Policy by their hosts, email correspondences and/or signs posted throughout the properties owned and operated by Balestrieri, including company owned vehicles and jobsites.
- Any violation of this policy will be handled through the standard disciplinary procedure.

Assured Equipment Grounding Conductor Policy

It is the policy of Balestrieri to carry out all work involving hazardous energy in a safe manner consistent with OSHA requirements. This policy is designed to prevent serious injury and/or death from hazardous energy.

Electricity has long been recognized as a serious workplace hazard and can be dangerous if it is not used correctly. Electrical energy can damage property and ignite fires. It can also hurt and even kill. Sound safety practices can help minimize electrical hazards and cut down on the risk of accidents.

Careful surveillance of electrical equipment and sources is one way to reduce this hazard and when necessary, an Arc-fault devise should be used. The goal of an electrical safety policy is to remove the worker from the danger zone to eliminate danger.

The hazards of electrical and other energy cannot be eliminated, but it can be controlled through safe work practices.

For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit

conductor on the supply side of the service disconnecting means or on the supply side of the system disconnecting means or over current devices if the system is separately derived.

In wet or other high-risk locations a ground fault circuit interrupter may be used. The supervisor and/or employer will determine this. For an ungrounded service-supplied system, the equipment-grounding conductor shall be connected to the grounding electrode conductor as the service equipment.

The path to ground from circuits, equipment and enclosures shall be permanent and continuous.

The purpose of the Balestrieri assured grounding policy is to ensure the proper connection, maintenance, and use of equipment grounding conductors on construction sites by Balestrieri employees.

Balestrieri provides approved ground-fault interrupters for all 120-volt, single-phase, 15 and 20-ampere receptacle outlets on construction sites which are not a part of the permanent wiring of the building or structure and which are in use by employees. Receptacles on the ends of extension cords are not part of the permanent wiring and, therefore, must be protected by GFCI's whether or not the extension cord is plugged into permanent wiring. The GFCI's will monitor the "current-to-load" of the circuit and detect leakage to ground surface. When this leakage exceeds 5 mA = 1 mA, the GFCI interrupts the current. They are rated to trip quickly enough to prevent electrocution. This complies with the grounding requirements of OSHA safety and health rules and regulations, 29 CFR 1926. These requirements are stated in 29 CFR 1926.404(b)(1)(ii).

Ground-Fault Circuit Interrupter (GFCI)

Balestrieri's assured grounding policy includes the use of the ground-fault circuit interrupter.

The ground-fault circuit interrupter (GFCI) is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second.

GFCI's are used successfully to reduce electrical hazards on construction sites. Tripping of the GFCI is sometimes caused by wet connectors and tools. It is preferred that employees limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors. Providing more GFCI's or shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakages from extremely long circuit.

Responsibility

The Project Superintendent will be responsible for making certain that the Assured Grounding Policy is implemented and the employees are trained in all aspects of the policy.

The Project Superintendent will be responsible for the testing protocol, color coded system, and record keeping.

The Project Superintendent will be responsible for tagging any out-of-service electrical item that does not pass the test or inspection and is serviced for repairs at the designated place.

Hazards

Arc Flash

An arc flash is a short circuit through the air when insulation or isolation between electric conductors is breached or can no longer withstand the applied voltage. The arc flash is an explosion and can seriously injure or kill.

Flexible Cords and Cables (Extension Cords)

With the wide use of portable tools on construction sites, the use of flexible cords often becomes necessary. Hazards are created when cords, cord connectors, receptacles, and cord and plug-connected equipment are improperly used and maintained.

Flexible Cords and Cables shall be protected from accidental damage. Unless specifically permitted, flexible cords and cables may not be used as a substitute for the fixed wiring of a structure, where attached to building surfaces, where concealed or where run through holes in walls, ceilings, or floors, or where run through doorways, windows, or similar openings.

- Flexible cords are more vulnerable to damage than fixed wiring. Flexible cords must be connected to devices and to fittings so as to prevent tension at joints and terminal screws. Because a cord is exposed, flexible and unsecured, joints and terminals become more vulnerable. Flexible cord conductors are finely stranded for flexibility, but the strands of one conductor may loosen from under terminal screws and touch another conductor, especially if the cord is subjected to stress or strain.

- A flexible cord may be damaged by activities on the job, by door or window edges, by staples or fastenings, by abrasion from adjacent materials, or simply by aging. If the electrical conductors become exposed, there is a danger of shocks, burns, or a fire. A frequent hazard on a construction site is a cord assembly with improperly connected terminals.

- Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

- The metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring. However, there is a hazard associated with housings and enclosures. A malfunction within the equipment, such as deteriorated insulation, may create an electrical shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard. If a "hot" wire contacts a grounded enclosure, a "ground fault" results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to ground. This wire is called an equipment grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user's knowledge.

- When a cord connector is wet, hazardous leakage can occur to the equipment grounding conductor and to humans who pick up that connector if they also provide a path to ground. Such leakage is not limited to the face of the connector but also develops at any wetted portion of it.

- When the leakage current of tools is below 1 ampere, and the grounding conductor has a low resistance, no shock should be perceived. However, should the resistance of the equipment grounding conductor increase, the current through the body also will increase. Thus, if the resistance of the equipment grounding conductor is significantly greater than 1 ohm, tools with even small leakages become hazardous.

- The Balestrieri assured equipment grounding conductor policy covers all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. The requirements which this policy meets are stated in 29 CFR 1926.404(b)(1) (III).

- Balestrieri employees are trained and required to visually inspect each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective will not be used until repaired.

- Flexible cords shall be connected to devices and fittings so that strain relief is provided that will prevent "pull" from being directly transmitted to joints or terminal screws.

Grounding/Grounded

- For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit conductor on the supply side of the service disconnecting means or on the supply side of the system disconnecting means or over current devices if the system is separately derived.

- Balestrieri employees are trained and required to use a ground fault circuit interrupter. In wet or other high-risk locations a ground fault circuit interrupter will be used. The supervisor and/or foreman will determine this. For an ungrounded service-supplied system, the equipment-grounding conductor shall be connected to the grounding electrode conductor as the service equipment.

  The path to ground from circuits, equipment and enclosures shall be permanent and continuous.

Testing

The testing protocol is as follows:

- All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
- Each receptacle, attachment cap and plug, and receptacle of cord sets shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.
- All receptacle, attachment caps and plug and receptacle of cord sets shall be tested, while in service, with ECOS Model 7100 Ground Check, or equal, when not in service with a continuity checker.
- All equipment connected by cord and plug shall be tested for ground wire continuity with a volt-ohm meter such as a Simpson 260 or a continuity tester.
- Procedure for ground fault testing:
    - The continuity and impedance to ground, the amount of leakage current present and whether the hot or neutral conductors are shorted to ground shall be determined using an ECOS Model 1020 electrical safety analyzer, or equal.
        - The impedance value of the equipment grounding conductor should not exceed 1 OHM..
        - Leakage levels less than 2 ½ ma can e considered safe generally in areas where there are not medical patients or electrically sensitive persons. Leakage currents above 5 ma are considered a very serious hazard and must be corrected immediately.
        - The continuity and impedance to ground and correct wiring in extension cords shall be determined using an ECOS Model 7100 ground check.
- All required tests shall be performed:
    - Before first use
    - Before equipment is returned to service following any repairs
    - Before equipment is used after any incident which can be reasonable suspected to have caused damage (for example, when a cord set is run over)
    - At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months

Color Coding System

A color coding system will be used to ensure that the test system is current and up-to-date and that all receptacles, portable cords and tools have been inspected and tested as required. All receptacles, cords, and tools shall be marked with the tape used to designate the month in which the inspections and tests were conducted. A color coding system of four colored tapes shall be used as follows:

WHITE	*GREEN*	*RED*	*ORANGE*
January	April	July	October
February	May	August	November
March	June	September	December

Record Keeping

All tests performed as required shall be recorded on the daily log. The test record shall identify each receptacle, cord set, and cord and plug connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection.

Medical Surveillance Program

Arsenic

Arsenic is a chemical element that occurs in nature in the form of gray, brittle flakes. It is a deadly poison, and is used as an ingredient in insecticides and other commercial poisons. Arsenic conducts electricity easily, and is used in electrical equipment. It is also a hardening agent in the manufacture of lead gun shot, and is produced as a by-product of smelting (melting) copper, silver, and lead ore.

Arsenic compounds are irritants, systemic toxins, and carcinogens in humans. Exposure to arsenic, and/or arsenic organic compounds can occur through inhalation, ingestion, eye or skin contact, and absorption through the skin.

Acute inhalation exposure to arsenic compounds may result in damage to the mucous membranes of the respiratory system. Severe irritation of the nasal mucosae, larynx, and bronchi has been observed following exposures. In addition, exposed skin may become irritated. Conjunctivitis, visual disturbances, hyper pigmentation of the skin and perforation of the nasal septum have been found in some cases of arsenic exposure.

Chronic exposure causes damage to the nervous system, cardiovascular system and liver. Anemia and leukocytopenia have been reported to occur following chronic exposure to arsenic compounds. Cancers of the skin, lungs, larynx, lymphoid system and viscera have been identified as potential responses to arsenic poisoning.

The current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) for organic compounds arsenic is 0.5 milligrams per cubic meter (mg/m(3)) of air as an 8-hour time-weighted (TWA) concentration. (29 CFR 1910.1000, Table Z-1).

Balestrieri employs methods that are effective in controlling worker exposures to arsenic and/or arsenic organic compounds which include, but are not limited to:

- Containment and Enclosure Procedures
- Personal Protective Equipment, including respirators
- Local Exhaust Ventilation
- General Dilution Ventilation
- Worker Training as Required under OSHA 29 CFR 1910.1200 for Emergency Response

Balestrieri employee training for arsenic exposure includes, but it not limited to:

- Explanation of health hazards associated with arsenic and arsenic compounds exposure (29 CFR 1910.1000).
- Information about where and how arsenic is used, stored, and released at the work site, including processes or operations that involve potential arsenic exposure, especially above the PEL.
- Explanation of engineering controls and work practices for the employee's job assignment to control exposure to arsenic.
- Training on what personal protective equipment is required, including respirators, and how to use the equipment.
- Explanation and training on emergency procedures (29 CFR 1910.1200).
- Description of measures employees can take to protect themselves from arsenic exposure, such as modification of smoking, personal hygiene practices and appropriate work practices.

Employees are warned that eating, drinking, smoking, chewing tobacco or gum is prohibited in regulated areas, and such items are not to be stored in a regulated area.

Balestrieri follows federal regulations for employee exposure limits and employees are monitored for arsenic exposure.

Asbestos

Exposure to asbestos, arsenic and cadmium has been linked to an increased risk of lung cancer, Mesothelioma, Gastrointestinal Cancer, and Asbestosis among occupationally exposed workers. Some locations where asbestos can be found include floor tile, black mastic beneath floor tile, thermal pipe insulation, shingles, transite siding, window caulk, linoleum, duct wrap, and window glazing. Employees not licensed or trained to remove asbestos should abide by all signs and labels regarding materials containing asbestos, and are not to disturb the asbestos containing material. Employees who do work in asbestos containing environments are required to receive asbestos awareness training in their orientation. All training is documented.

OSHA (Occupational Health and Safety Administration) is the government agency which governs respirator use. It sets forth Permissible Exposure Levels (PEL) for asbestos. The PEL for asbestos is 0.1f/cc. Balestrieri will institute a medical surveillance program for all employees who for a combined total of 30 or more days per year are engaged in Class I, II, and III work or are exposed at or above a permissible exposure limit.

Adequate screening tests to determine an employee's potential for developing serious chronic diseases, such as cancer, from exposure to asbestos do not presently exist. The following medical surveillance procedures are to be followed:

- All employees who are or will be exposed to asbestos at or above the permissible exposure level to asbestos (0.1 fiber per cubic centimeter of air) are required to participate in an annual physical examination.
- All examinations and procedures will be performed by or under the supervision of, a licensed physician/medical professional on an annual basis and at no cost to a Balestrieri employee.
- An accurate record shall be established and maintained for each employee subject to medical surveillance. This record shall include at least the following information:
    - The name and social security number of the employee.
    - The physician's written opinions.
    - Any employee medical complaints related to exposure of asbestos.
- Medical records will be maintained for the duration of employment plus thirty (30) years in accordance with 29 CFR 1910.20.
- Training records will be maintained for one (1) year beyond the date of employment of that employee.
- Balestrieri, upon written request, shall make records available in accordance with 29 CFR 1910.20 (For additional information, you may request a copy of the company's Confidentiality and Limitations on Use of Medical Information Policy, from the human resources office).

The following procedures/elements are to be included in this examination:

- Name and social security number of the employee.

- Medical and work histories with special emphasis directed to symptoms of the respiratory system, cardiovascular system and digestive tract.
- Completion of the respiratory disease questionnaire contained in Appendix D, 1926.1101.
- A physical examination including a chest x-ray and pulmonary function test that includes measurement of the employee's forced vital capacity (FVC) and forced expiratory volume at one second (FEV1).
- Any laboratory or other test that the examining physician deems by sound medical practice to be necessary.

Balestrieri will in turn provide the physician/medical professional with the following:

- A copy of our Medical Surveillance Program.
- A description of the employee's duties as they relate to asbestos/lead exposure.
- The employee's representative level of exposure to asbestos.
- A copy of our Respirator Program.
- Information from previous medical examinations of an affected employee that is not otherwise available to the physician/medical professional.

At the conclusion of the procedure, Balestrieri is to receive the following:

- A written opinion from the examining physician containing the results of the medical examination.
- The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of exposure-related disease.
- Any recommended limitations on the employee or on the use of personal protective equipment.
- A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions related to asbestos exposure that require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to exposure to asbestos. A copy of the opinion must be provided to the affected employee.

Blood Borne Pathogens

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered infectious.

In case of an emergency where employees may have contact with blood or other potentially infectious materials, employee(s) should immediately obtain a pair of rubber gloves from the first aid kits located in the clean room, service van or utility trailer.

At the end of any potentially infectious exposure, employee(s) will remove the gloves and dispose of them in the proper biohazard disposal containers. The employee(s) will then thoroughly wash their hands.

Any breach of the gloves where skin is directly exposed to the potentially infectious materials should be reported immediately to the employee(s) supervisor.

Cadmium

Cadmium, a naturally occurring element found in the earth's crust, is used as an electrode component in alkaline batteries, pigments, coatings, plating and as a stabilizer for plastics. Workers in many industries face potential exposure to cadmium. The potential for exposure to workers comes from electroplating, metal machining, plastics, ceramics, paint, welding and abrasive blasting. The exposure routes are through inhalation of dust and fumes and incidental ingestion of dust from contaminated hands, food or cigarettes.

The primary and most serious adverse health effects of long-term exposure to cadmium include kidney dysfunction, lung cancer and prostate cancer. Cadmium may cause local skin or eye irritation and can affect long-term health if inhaled or ingested.

The full OSHA standard relating to cadmium can be found in 29 CFR 1926.1127. This standard includes exposure limits an employer must observe under the OSHA cadmium standard. The first is the action level

(AL), which is defined as the airborne level of cadmium that creates a need for airborne exposure monitoring, a medical surveillance program for employees who are at or above the AL on 30 or more days per year, and the provision of a respirator to any employee that requests one.

- AL – 2.5 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA) exposure

The second limit is the Permissible Exposure Limit (PEL) which defines the limit to which an employee may be exposed to cadmium in the workplace.

- PEL – 5 micrograms of cadmium per cubic meter of air for all cadmium compounds, dust and fumes during any 8-hour work shift of a 40-hour work week

Warning signs must be displayed in regulated areas and in all approaches to regulated areas (29 CFR 1910.1200) shipping and storage containers must have labels in visible locations, employees must have access to material safety data sheets (MSDS), and be provided appropriate employee training and personal protective equipment.

Balestrieri employee training includes but is not limited to:

- Explanation of the health hazards associated with cadmium exposure (29 CFR 1910.1027).
- Information about where and how cadmium is used, stored and released at the worksite, including processes or operations that involve potential cadmium exposure, especially above the PEL.
- Explanation of engineering controls and work practices for the employee's job assignment to control exposure to cadmium associated with the employee's job assignment.
- Training on what personal protective equipment is required, including respirators, and how to use the equipment. (Respirators used must comply with 29 CFR 1910.134)
- Description of measures employees can take to protect themselves from cadmium exposure, such as modification of smoking, personal hygiene practices and appropriate work practices.
- Explanation of emergency procedures.
- Information on the purpose, selection, fitting, use and limitations of personal protective equipment.
- Explanation of the medical surveillance program.
- Make a copy of the cadmium standard and its appendices readily available and provide employees with a copy of the standard if requested.
- Informing employees of their rights of access to records.

Employees are warned that eating, drinking, smoking, chewing tobacco or gum is prohibited in regulated areas, and such items are not to be stored in a regulated area.

Balestrieri follows federal regulations for employee exposure limits and employees are monitored for cadmium exposure.

Crystalline Silica

Crystalline silica is a basic component of soil, sand, granite, and many other minerals. The silica found in quartz, tridymite, cristobalite, and tripoli is a crystalline form that can cause significant and irreversible health problems for exposed workers.

When a worker inhales crystalline silica dust it can be deposited into the tiny air sacs of the lungs. Crystalline silica dust with a diameter of less than 10 micrometers tend to settle in the lungs and are considered "respirable" particles. Once in the lungs, respirable crystalline silica tends to form scar tissue, creating a condition known as silicosis. There is no cure for silicosis, so the key is to prevent silicosis by employing safety precautions so employees will not be exposed. The different stages of silicosis are:

- **Acute silicosis** occurs after a few months or as long as two years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness and weight loss, which often leads to death.
- **Accelerated silicosis** can occur after 5-10 years of high exposures to respirable crystalline silica. Symptoms include severe shortness of breath, weakness and weight loss. The onset of symptoms takes longer than in acute silicosis.
- **Chronic/classic silicosis**, the most common, occurs after 15-20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath upon exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain or respiratory failure.

Crystalline silica can also cause:

- Lung Cancer (silica has been classified as a human lung carcinogen)
- Bronchitis/Chronic Obstructive Pulmonary Disorder
- Tuberculosis
- Scleroderma
- Possible renal disease

The current OSHA permissible exposure limit (PEL for respirable dust containing crystalline silica (quartz) is measured by millions of particles per cubic foot (mppcf) and is calculated as:

- PEL = 50ug/cubic meter TWA
- Action Level = 25ug/ cubic meter TWA

This exposure limit is found in 29 CFR 1926.55.

Exposure to crystalline silica occurs during many different construction activities. The most severe exposures generally occur during abrasive blasting with sand to remove paint and rust from bridges, tanks, concrete structures and other surfaces. Other activities that may result in severe exposure include jack hammering, rock/well drilling, concrete mixing, concrete drilling, brick and concrete block cutting and sawing, tuck pointing and tunneling operations.

Balestrieri follows OSHA requirements to prevent their employees from exposure to crystalline silica. These procedures include but are not limited to:

- Provide engineering or administrative controls, such as local exhaust ventilation.
- Replace crystalline silica materials with safer substitutes, whenever possible.
- The use of protective equipment and measures to reduce exposures below the PEL.
- The use of all available work practices to control dust exposures, such as water sprays and wet methods for cutting, chipping, drilling, sawing, grinding, etc.
- The use of HEPA vacuums for waste.
- The use of respirators approved for protection against silica.
- Provide training about safe handling, labeling and storage of toxic materials (30 CFR 56.20012, 56.16004, 57.20012, 77.208).
- Provide training, exposure monitoring and health screening and surveillance programs to monitor any adverse health effects caused by crystalline silica exposure.
- Provide employee awareness of the health hazards related to exposure to crystalline silica. Smoking adds to the lung damage caused by silica exposure.

- Warnings to employees to not eat, drink or smoke near crystalline silica dust.
- Post warnings outside the abrasive blasting area that read:
    - **WARNING – CRYSTALLINE SILICA WORK AREA – Exposure may cause silicosis (a serious lung disease), cancer and death. RESPIRATOR REQUIRED**
- Training for employees to wash hands and face before eating, drinking or smoking away from the exposed area.
- Training for employees to park vehicles away from exposed area so crystalline silica will not land on the vehicles.
- Training for employees to clean off and remove all protective equipment before leaving the exposed area.

Balestrieri follows federal regulations for employee exposure limits and employees are monitored for crystalline silica exposure.

Silica Written Exposure Plan:

Below is a brief description of both the task and any applicable, accompanying engineering controls, work practices, protective equipment or housekeeping measures to use to limit employee exposure to silica dust.

TASK: Wall Sawing

Description: Saw cutting concrete walls and floors inside buildings.

Controls: when wall sawing water will be used to control the dust. Position the guard as close to the wall as possible to reduce exposure. Position the employee as far away from mist as possible.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas, Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Core Drilling

Description: Core drilling concrete floors inside.

Controls: When core drilling water will be used to control the dust.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Wire Sawing

Description: Using a wire saw to cut concrete.

Controls: When wire sawing water will be used to control dust. Position the employee as far away from mist as possible.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Handheld Chain Saw/ Hand Saw

Description: Chain/Hand sawing concrete

Controls: When chain/hand sawing concrete water will be used to control dust. Position the employee as far away from the mist as possible.

Respiratory Protection: Use p100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using the respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Jack Hammering

Description: Jack Hammering concrete.

Controls: When jack hammering concrete water will be used to control dust.

Respiratory Protection: Use p100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using the respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Dry Abrasive Blasting

Description: Blasting media – silica used for cleaning/restoring impacted structures indoors and outdoors.

Impacted Structures: CMU, brick, structural steel or other metals, wood and plaster walls .

Controls: Use of HEPA equipped air ventilators with air changes. HEPA equipped vacuums, critical barriers or hard barriers to be used. Clean accumulated blast media at least once every 2 hours and containerize. Use a non-silica blast media when possible to reduce silica exposure.

Respiratory Protection: Supplied air loose fitting hood/helmet with shield. Use p100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using the respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

PPE: Disposal suits, leather gloves/Impermeable gloves, proper boots, ear plugs and muffs if both are feasible.

Restrict Access to work areas: Establish regulated areas and use of proper signage of potential hazards. Schedule the work so that only the employees who are engaged in the task are in the area

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

TASK: Sand Induction Blasting/Vapor Blasting

Description: Blasting media – Silica used indoors and outdoors.

Controls: HEPA equipped air ventilators with air exchanges. Negative pressure enclosures if other hazardous materials are impacted from the operation. Establish regulated areas and use of appropriate signage to be placed.

Respiratory Protection: Supplied air loose fitting hood/helmet.

PPE: Disposable suits, ear plugs and muffs if both feasible, impermeable gloves/leather gloves.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work areas: Schedule the work so that only the employees who are engaged in the task are in the area.

Competent Person:

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Restricting Bystander Access:

The following list of restricted areas is based on Table 1 of the final rule. Construction employers will need to customize this list to satisfy their legal obligations and accommodate their workplace safety requirements.

TASK: Handheld grinders for mortar removal/Handheld grinders

Description: Handheld grinders to remove motar

Controls: When using hand held grinders for motar removal position the employee as far as possible from dust source as possible, use water at cutting points.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Walk-behind floor grinders

Description: Walk behind floor grinders for concrete.

Controls: When using walk behind grinders position the employee as far as possible from dust source as possible, use water to reduce dust.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (Skidsteers or Track Backhoe (outdoor work):

Description: Heavy Equipment used during demolition for outdoor work

Control: When temperatures are above freezing, water will be used or misting to decrease dust.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage.

TASK: Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (Skidsteers or Track Backhoe (indoor work):

Description: Heavy Equipment used during demolition for outdoor work

Control: When temperatures are above freezing, water will be used or misting to decrease dust.

Respiratory Protection: Use P100 filtering face piece respirator when the exposure is over 4 hours. Employer shall make medical surveillance available at no cost to the employee for employees using respirator for more than 30 days per year. The medical exams will be made available at least every 3 years.

Housekeeping: Dust containing silica on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum.

Restrict Access to work Areas: Schedule the work so that only the employees who are engaged in the task are in the area. Use of proper demarcation with signage. Set up critical barriers, use of negative air exchanges.

Lead

Under the Occupational Health Standard for inorganic lead as it relates to Medical Surveillance (1910.1025 Appendix C) and OSHA lead construction standard 1926.62, an annual medical examination is to be made available to all employees exposed to lead above the permissible exposure level of 30 ug/m(3) TWA for more than 30 days each year. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule, which is defined by previous laboratory results, worker complaints or concerns and the clinical assessment of the examining physician.

Under this program, the blood lead level of all employees who are exposed to lead above the permissible exposure level of 30 ug/m(3) is to be determined at least every six months. The frequency is increased to every two months for employees whose last blood lead level was between 40 ug/100 ug whole blood and the level requiring employee medical removal.

Testing of employees is based on long- and short-lead level blood tests summarized in the following table as defined by 1910.1025.

TABLE 2

	Effective date				
	Mar. 1, 1979	Mar. 1, 1980	Mar. 1, 1981	Mar. 1, 1982	Mar. 1, 1983 (final)
A. Blood lead level requiring employee medical removal. (Level must be confirmed with second follow-up blood lead level within two weeks of first report.).	≥80 µg/100 g	≥70µg/100 g	>60 µg/100 g	≥60 µg/100 g	≥60µg/100 g or average of last three blood samples or all blood samples over previous 6 months (whichever is over a longer time period) ≤ 50 µg/100 g or greater unless last blood sample is 40 µg/100 g or less.
B. Frequency which employees exposed to action level of lead (30 µg/m³ TWA) must have blood lead level checked (ZPP is also required in each occasion that a blood lead is obtained.):					
1. Last blood lead level less than 40 µg/100 g.	Every 6 months	Every 6 months	Every 6 months	Every 6 months	Every 6 months.
2. Last blood lead level between 40 µg/100 g and level requiring medical removal (see A above).	Every 2 months	Every 2 months	Every 2 months	Every 2 months	Every 2 months.
3. Employees removed from exposure to lead because of an elevated blood lead level	Every 1 month	Every 1 month	Every 1 month	Every 1 month	Every 1 month.
C. Permissible airborne exposure limit for workers removed from work due to an elevated blood lead level (without regard to respirator protection).	100 µg/m³ 8 hr TWA	50 µg/m³ 8 hr TWA	30 µg/m³ 8 hr TWA	30 µg/m³ 8 hr TWA	30 µg/m³ 8 hr TWA.
D. Blood lead level confirmed with a second blood analysis, at which employee may return to work. Permissible exposure without regard to respirator protection is listed by industry in Table I.	60 µg/100 g	50 µg/100 g	40 µg/100 g	40 µg/100 g	40 µg/100 g.

NOTE: When medical opinion indicates that an employee is at risk of material impairment from exposure to lead, the physician can remove an employee from exposures exceeding the action level (or less) or recommend special protective measures as deemed appropriate and necessary. Medical monitoring during the medical removal period can be more stringent than noted in the table above if the physician so specifies. Return to work or removal of limitations and special protections is permitted when the physician indicates that the worker is no longer at risk of material impairment.

Balestrieri will notify every employee -- in writing -- of the results of all blood level tests. Should an elevated level occur, company policy will follow the procedures as outlined in 1910.1025 Appendix C.

Exposure monitoring and medical surveillance records will be kept for forty (40) years or the duration of employment plus twenty (20) years, whichever is longer. Medical removal records will be maintained for the duration of employment.

Employees (or their specifically designated representatives) will have access to their entire medical surveillance records. In addition, all employees exposed to lead at or above the permissible exposure level of the provisions of 1910.1025 and all its appendixes, will be informed of the potential health effects of lead exposure along with full understanding of their rights under the lead standard.

Mercury

All forms of mercury are toxic. Mercury poisoning can result from inhalation, ingestion and injection or absorption through the skin. Mercury metal and mercury compounds are highly hazardous if inhaled and/or ingested.

Those who handle mercury waste are subject to the management standards under 40 CFR 273. Balestrieri follows both federal and state regulations for disposal of hazardous waste, including mercury waste. A worker's exposure to mercury should be less than the Threshold Limit Values (TLV's), the exposure limits established by the American Conference of Governmental Industrial Hygienists (ACGIH). Following are the established limits:

- Mercury Metal Vapor 0.025 mg/m 3
- Mercury Salts 0.025 mg/m 3
- Aromatic Organic Compounds 0.1 mg/m 3
- Alkyl Compounds 0.01 mg/m 3

Balestrieri employees have adequate training before undertaking work where mercury is involved, which includes but is not limited to:

- Safe use of mercury
- Mercury hazards

- Cleanup of mercury spills
- Required personal protective equipment, including respirator training
- Procedures for summoning emergency response services

Balestrieri follows federal and state regulations for clean-up of mercury spills, employee exposure limits and employees are monitored for mercury exposure.

Mold

Molds are part of the natural environment. They are microscopic fungi that can be found indoors or outdoors throughout the year. When mold grows indoors it can cause a variety of symptoms including headaches, difficulty breathing, skin irritation, allergic reactions and aggravated asthma symptoms.

Remediation of mold includes the identification and correction of the conditions that permit mold growth, as well as the steps to safely and effectively remove mold damaged materials. Balestrieri training for mold remediation includes, but is not limited to:

- Training employees in hazardous waste techniques
- Decontamination techniques
- The use of appropriate personal protective equipment (PPE)
- Steps to carefully contain and remove moldy building materials in a manner that will prevent further contamination
- Measures to test for mold and mold conditions when project is completed

Balestrieri follows federal and state regulations for mold remediation and employees are monitored for mold exposure.

Polychlorinated Biphenyl (PCB)

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include:

- Transformers and capacitors
- Other electrical equipment including voltage regulators, switches, reclosers, bushings and electromagnets
- Oil used in motors and hydraulic systems
- Old electrical devices or appliances containing PCB capacitors
- Fluorescent light ballasts
- Cable insulation
- Thermal insulation material including fiberglass, felt, foam, and cork
- Adhesives and tapes
- Oil-based paint
- Caulking
- Plastics
- Carbonless copy paper

The PCBs used in these products were chemical mixtures made up of a variety of individual chlorinated biphenyl components, known as congeners. Most commercial PCB mixtures are known in the United States by their industrial trade names. The most common trace name is Aroclor.

PCBs have been demonstrated to cause a variety of adverse health effects. PCBs have been shown to cause cancer in animals.

Balestrieri employees are trained before undertaking work where PCBs are involved. This training includes but is not limited to:

- Safe handling of items containing PCBs
- PCB hazards
- Cleanup of PCB spills

- Required personal protective equipment, including respirator training
- Procedures for summoning emergency response services
- Procedures to follow if contaminated with PCBs

Balestrieri follows federal and state regulations for handling hazardous waste containing PCBs and employees are monitored for PCB exposure.

Zinc

Zinc is one of the most common elements in the earth's crust. It is found in air, soil and water and is present in all foods. Pure zinc is a bluish-white shiny metal. Zinc has many commercial uses as coatings to prevent rust, in dry cell batteries, and mixed with other metals to make alloys like brass and bronze. Zinc combines with other elements to form zinc compounds. Common zinc compounds found at hazardous waste sites include zinc chloride, zinc oxide, zinc sulfate, and zinc sulfide. Zinc compounds are widely used in industry to make paint, rubber, dyes, wood preservatives, and ointments. Certain processes can allow zinc chloride fumes into the air. Workers are exposed to zinc chloride fumes through various occupations which include but are not limited to:

- Abrasive blasting
- Etching metals and copper plating iron
- Soldering with zinc-chloride-containing fluxes
- Browning steel and galvanizing iron
- Arc welding of galvanized iron and steel pipes
- Use in vulcanizing and reclaiming processes in rubber manufacture

OSHA has established permissible exposure limit (PEL) for zinc chloride fume at 1 milligram per cubic meter (mg/m(3)) of air as an 8-hour time-weighted average (TWA) concentration and 2mg/m(3) as a 15 minute TWA short-term exposure limit (STEL). These exposure limits are set forth in 29 CFR 1910.1000. NIOSH concurs with this standard.

Exposure to zinc chloride fumes can cause but is not limited to:

- Conjunctivitis
- Irritation of the nose and throat
- Hoarseness
- Cough
- Wheezing
- Chest tightness and/or pain
- Nausea and/or vomiting
- Metallic taste in the mouth

Workers exposure to chloride fumes can occur via inhalation and eye or skin contact.

Methods employed by Balestrieri to control worker exposure to zinc chloride fume include but are not limited to:

- Personal protective equipment, including respirators
- Exhaust Ventilation
- Containment enclosures where appropriate
- Procedures to follow if contaminated with PCBs
- Procedures for summoning emergency response services
- Training for employees to wash hands and face before eating, drinking or smoking away from the exposed area.

Balestrieri monitors employees for zinc chloride fume exposure.

Benzene Awareness Statement

Benzene is a chemical with a colorless liquid and sweet odor. It is most commonly found in petroleum distilleries, but ranks in the top 20 chemicals for production volume. Some industries use benzene to make other chemicals which are used to make plastics, resins, nylon, and other synthetic fibers.

It can also be used to make types of rubbers, dyes, lubricants, detergents, drugs, and pesticides. It is highly flammable with adverse side effects.

Benzene's routes of entry include:

- Inhalation
- Absorption
- Ingestion
- Skin or eye contact

Benzene can target the eyes, skin, respiratory system, blood, central nervous system, and bone marrow. Required PPE (Personal Protective Equipment) if benzene becomes present includes: chemical safety goggles, face shield, boots, gloves, long sleeve shirt, and aprons. There is no smoking allowed on Balestrieri job sites, however, if there is benzene present or known to a possibility of becoming present, all flame sources are to be removed from the job site immediately. Every Balestrieri vehicle is equipped with a fire extinguisher that is kept up to code annually. On a job site where benzene could possibly become present, a fire extinguisher is required to be readily accessible.

Symptoms of exposure to benzene include:

- Irritated eyes, skin, nose, or respiratory system
- Dizziness
- Nausea
- Staggered gait
- Anorexia
- Lethargy

Balestrieri does not routinely conduct business where benzene is present, however, if a chemical hazard is present or becomes present on any jobsite, work will be stopped immediately and employees are to notify a project supervisor. If conducting work at a client's facility with the known presence of benzene, we will adhere to their existing health and safety polity and comply with OSHA 29 CFR 1910.1028. It is the intent of the Balestrieri group to comply with all laws, especially those which protect the health and safety of all employees. Employees are aware of benzene becoming a possibility on job sites and know to immediately stop work and notify the project supervisor who will then notify the onsite contact.

Respiratory Medical Examination Requirements

A pulmonary functions exam should be conducted once every twelve (12) months at the cost and responsibility of the company. Balestrieri will keep these records on file for a period of at least 30 years after termination of the employee. The test may include:

- Chest x-ray
- Forced vital capacity test
- Symptomology
- Medical history questionnaire

History of respiratory disease identifies a worker's history of asthma, emphysema or chronic lung disease. These people may be at risk when wearing a respirator.

Work history identifies workers who have been exposed to asbestos, silica, cotton dust, beryllium, etc., within the past ten years, or workers who have worked in occupations or industries where such exposure is probable. If past exposures are identified, medical tests can be obtained for comparison.

Other medical information which may be a factor in an employee's ability or inability to wear a respirator include:

- Psychological problems or symptoms including claustrophobia.
- Any known physical deformities or abnormalities, including those which may interfere with respirator use.
- Past and current use of medication.
- Tolerance to increased heart rate, which can be produced by increased workload and heat stress associated with wearing respirators and protective clothing.

Hearing Conservation Audiometric Tests and Evaluations

Audiometric testing and evaluation is crucial to the success of the hearing conservation program. Balestrieri provides annual audiometric tests for employees exposed to a sound action level of 85 dbA or above measured as an 8-hour TWA. All baseline audiogram tests are not to be conducted until an employee has refrained from workplace noise for at least 14 hours.

Audiometric testing and evaluation monitors an employee's hearing over time and educates employees about their hearing and the need to protect it. These tests, baseline and annual, are conducted by a licensed or certified audiologist, otolaryngologist or other qualified physician. Audiometric test and evaluation results are maintained by Balestrieri for the duration of the employee's employment. If there is a standard threshold shift found in an employee's annual audiogram, the results are presented to the employee in writing within 21 days of the findings. In addition, amendments to employee PPE, re-fitting, and if required, a medical evaluation should be conducted when necessary.

The following terms are important for the audiometric testing portion of the hearing conservation program in this safety program:

Baseline Audiogram – The baseline audiogram is the reference audiogram against which future audiograms are compared. The baseline audiogram is done within 6 months of an employee's first noise exposure at or above an 8-hour TWA of 85 dbA.

Annual Audiogram – The annual audiogram is provided within 1 year of the employee's baseline audiogram. The annual audiogram is compared to the baseline audiogram to determine if there has been any hearing loss.

Emergency Procedures

The project manager and foreman on each job site are responsible for developing emergency procedures for fires or severely injured employees. Since abatement work, interior demolition and hazardous material areas must be sealed off, thereby blocking normal exits, the project manager and foreman must familiarize and develop plans for obtaining emergency aid in case of severe employee injury. The plans should be compatible with decontamination procedures, yet provide for quick medical aid.

Suggested emergency planning measures to include, but not limited to:

- Emergency evacuation plan for fires, explosion or normal disasters
- Fire extinguisher locations and inspection
- Emergency plan for accidental injuries
- Appropriate first aid medical supplies
- Foreman on site will be trained in first aid

Fire Hazards

There are always precautions that need to be taken to prevent fire hazards. The most obvious and common is to be sure that all smoking materials are completely extinguished. Smoking is not allowed in the work area, however these precautions must be taken outside of the work area as well.

Many substances used on asbestos/lead-based paint abatement jobs are highly flammable (i.e. spray adhesives). It is imperative that these items be kept away from heat or flames.

Not knowing emergency procedures or the location of fire extinguishers is a hazard in itself. Employees are trained, annually and prior to new working environments, on fire extinguisher usage and incipient stage firefighting. All fire extinguishers are visually checked on a monthly bases, and undergo a maintenance check on an annual basis. It is very important to be familiar with all emergency procedures so as to not panic in an emergency situation.

Fire Prevention

Workplace fires and explosions kill 200 and injure more than 5,000 workers each year. The following checklist is designed to help superintendents evaluate whether adequate fire prevention measures are being taken on any job site.

- Does the person on fire watch have access to a telephone? If so, do they know how to use it? Is there a language barrier?
- Is the telephone number of the fire department or emergency response group prominently displayed?
- Is a routine inspection of the premises made when work has finished, and again at least one hour after work has stopped for the day, to check for slow burning or smoldering fires? Are portable heating units verified as turned off?
- Is every employee aware of the means of escape from the premises?
- Does every employee know how to use the fire equipment with appropriate and documented training?
- Are all stored materials clear of the floor in an approved location?
- Where drains are provided, are they kept free of obstructions?
- Is fire equipment located where it is really needed? Is it easily accessible and in good working condition?
- Are the right classes of extinguishers provided for the types of fire that could occur?

ALL JOB SITES ARE TOBACCO FREE.

SMOKING IS NOT ALLOWED ON THE JOBSITE

Medical Programs

The availability of first aid and emergency medical assistance is essential in order to minimize the harmful consequences of injuries and illnesses. Working in the construction industry often times leads to very serious injuries due to the nature of the work environment. All our on-site superintendents are trained using an accredited Red Cross First Aid program and CPR program.

The key components of an effective occupational medical program include:

- Written policy and procedures.
- Adequate training and assignment of emergency responders and first aid personnel.
- Reliable outside medical resources and consultation on matters relating to workers' health.
- First aid supplies and knowledge of blood borne pathogens.
- Medical record retention and first aid logs.

First Aid/CPR Training

Balestrieri provides its employees standard First Aid/CPR training through a certified training facility. Employees are trained on a bi-annual basis. First aid supplies and kits contain items appropriate for each specific working environment, and are kept readily available at every job site. All first aid kits are checked for inventory and adequacy on a weekly bases and prior to the start of every project. In addition, job sites containing materials hazardous to the eyes are equipped with the necessary supplies for flushing eyes.

Emergency Preparedness Procedures

Emergency response plans are necessary for all employees' safety. It is important for employees to understand their roles in these plans. Emergency list (i.e. police, hospital, first aid, fire department) must be posted on every job site.

If an employee suffers a heart attack, heat stroke or some other medical emergency, there are certain procedures that need to be implemented. Employees will have specific duties to perform during one of these emergencies, such as calling an ambulance, clearing the exit way, showing the medical staff to the injured person, etc. It is very important that all employees understand and be aware of their duties in the event emergency response is required. Events that might call for an emergency plan include the following:

- Heart attack/heat stroke - other medical emergencies
- Fire in or near the work area
- Natural disasters (tornadoes, hurricanes, etc.)

Emergency Procedures

- Emergency procedures shall be in written form and be prominently posted in the clean change area and equipment room of the decontamination area.
- Everyone, prior to entering the regulated area, must read and acknowledge the understanding of the work site layout, location of emergency exits and emergency procedures.
- Emergency planning shall include written notification of police, fire and emergency medical personnel of planned abatement activities, work schedule and layout of regulated area, particularly barriers that may affect response capabilities.
- Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and other related injuries. Written procedures shall be developed and employee training in these procedures shall be provided.
- Employees shall be trained in evacuation procedures in the event of workplace emergencies under the following conditions:

    - For non-life threatening situations, employees injured or otherwise incapacitated, shall decontaminate following normal procedures with assistance from other employees, if necessary, before exiting the workplace to obtain proper medical treatment.
    - For life-threatening injury or illness, worker decontamination shall take least priority. After measures to stabilize the injured worker, remove the worker from the workplace and secure proper medical treatment.
    - Telephone numbers of all emergency response personnel shall be prominently posted in the clean change area and equipment room, along with the location of the nearest telephone.

Injured or Sick Personnel

Phone numbers for the local hospital, paramedics and police department will be posted in the clean room. All injuries, no matter how small, will be reported to the foreman and logged in the daily report. First Aid kits will be supplied on the job, and will be kept in the clean room.

- **Minor Injury or Illness**. Workers who receive minor-type injuries will be required to go through the proper decontamination procedures prior to leaving the work area for needed medical attention.
- **Major Injury or Illness**. Workers who receive major-type injuries will be made as comfortable as possible without moving them. Help will immediately be summoned and informed of the asbestos/lead paint hazard inside the work area. Protective clothing and respirators will be provided if time allows. The paramedics or other help will make the decision of decontaminating the injured worker or not. A worker will only be moved before help arrives if the situation is immediately dangerous to life and health. The foreman will make this decision based on the moment.

Personal Protective Equipment

Body Protection

Employees are provided and are to use appropriate body protection. Depending upon the hazard this may include coveralls or a full body suit. Employees are to wear clothing appropriate for the work being done. This will be determined by the superintendent on site.

Employees are to wear reflective protective vests as determined by the superintendent on site.

Eye and Face Protection

All employees will wear protective eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially innocuous light radiation.

Paint removal involving the application of chemical corrosive paint strippers requires full face protection shields to be worn and a portable eye wash station to be readily available.

Foot Protection

Foot protection equipment shall be worn when working in areas where there is a danger of foot injuries due to falling or rolling objects or objects piercing the sole and where employees' feet are exposed to electrical hazards.

Hand Protection

All employees involved in operations exposing hands to cuts, chemicals, burns, etc. are required to wear the appropriate gloves.

Head Protection

All employees shall wear protective equipment (hard hats) when there is a possible danger of head injuries from impact, flying or falling objects, or electrical shock and burns.

Hearing Protection

All employees shall wear protective equipment (ear plugs) when job-site noise levels are equal to or greater than 85 decibels. If an employee must raise his/her voice for someone who is three feet away in order to be heard, hearing protection is required.

Balestrieri periodically requires a task-specific PPE assessment.

Respirator Program

The purpose of the company's respirator program is:

- To ensure all employees receive proper medical examinations to determine their ability to wear a respirator.
- To confirm that each employee is properly fit tested at the appropriate intervals.
- To confirm that new employees and existing employees are trained in the care and maintenance of their respirators.
- To ensure employees are provided with the proper respirator replacement parts, such as valves, cartridges, straps, etc., as necessary.

Balestrieri prohibits working in IDLH atmospheres/conditions, but all employees who work in areas which contain friable asbestos and airborne lead dust or who are conducting activities which may cause non-friable asbestos to become friable and lead paint to become airborne are required to wear proper respirator protection while working in these areas. The proper respirators are also to be provided and used when working in oxygen deficient environments and/or where there is exposure to harmful vapors.

Employees who work in such areas as described above will receive proper medical examinations prior to fit testing. The evaluations are confidential, occur during normal working hours, and include a time where employee results may be discussed with a physician. In addition, employees will be provided with respiratory equipment at no cost, will be properly fit tested, and will receive training initially upon employment as well as annually, in the use, care and maintenance of respirators. All respirators are NIOSH certified and are selected based on the hazards within the working environment.

Compliance with the above is the responsibility of Balestrieri for verification as to compliance for each individual who is part of the respirator program is in the possession of Kenneth R. Balestrieri, respirator program manager, on file at the company's administrative office, as well as on the job site. Employees who are a part of this program may receive copies of the above-mentioned documentation within 24 hours of submitting written notice to the program coordinator.

Our company respirator program is outlined as follows:

- Procedures for selecting respirators for use in the workplace
- Medical examination requirements
- Respirator fit testing procedures
- Procedures for proper use of respirators
- Respirator inspection, care and maintenance
- Procedures to ensure adequate air quality, quantity and flow of breathing
- Proper employee training in respirator hazards
- Proper employee training in the use of respirators
- Procedures for regular evaluation of this program
- Definitions

Each individual receiving a respirator and proper fit testing shall also receive a copy of this packet and is responsible for being knowledgeable of and in compliance with, the information contained within.

Employee understanding of this shall be represented by initials found on the respirator fit test and examination record which is in the possession of the respirator program manager.

Procedures for Selecting Respirators for Use in the Workplace

Categories of Respirators:

- Air Purifying: The atmosphere is purified from contaminants before it reaches the individual who is working in the contaminated area.
- Air Supply: A supply of air is delivered from an outside source to the face-piece of the respirator.

The protection factor (PF) is the concentration outside the mask divided by concentration inside the mask.

Type of Respirator	**PF**
Air Purifying Half Mask	10
Air Purifying Full Face Mask	50
Powered Air Purifying	100-300
Pressure Demand Air Supplied Full Face Mask	2000

A protection factor of 10 means that the PEL is not to exceed 10 times that limit or 0.1f/cc. Therefore a person can work in an environment while wearing an air purifying half mask respirator as long as the asbestos content is not greater than 0.1f/cc.

Through personnel sampling, the average asbestos content present in the air outside the respirator of a person performing a glove bag removal is 0.01f/cc.

The single most important variable affecting a respirator's protection factor is the free-piece to face fit. A full face mask respirator provides a better protection factor than a half mask because the seal is around a part of the face, which does not move as much under working conditions.

Types of Respirators

- **Half Mask Air Purifying Respirators.** Filters out particulate contaminants in the air within the work area before they air reaches the individual wearing the respirator. This is the most widely used respirator for abatement activities. This respirator uses the HEPA (High Efficiency Particulate Absolute or P-100) cartridges as a filtering device. These filters are distinguished by being magenta in color. No other color cartridges should be used for asbestos abatement and lead dust work. Components of the Half Mask Respirator are the: Face piece-silicon; Inhalation Port; Exhalation Port; and, Straps.

- **Full Face Air Purifying Respirators**. The benefits of this type of respirator is that is provides full-face protection, including protection for the eyes and it provides a better fit. Downfalls of this respirator are that they may fog-up, however this can be prevented with the use of anti-fog sprays or plastic lens inserts. An individual cannot wear contact lenses as they may dry out, causing harm to the eye. Nor can glasses be worn, as this will prevent a proper seal around the face.

- **PAPR**. Consists of a full-face piece with an inner half face piece to prevent fogging. A battery pack draws air from behind the user through HEPA filters and then into the face piece. Although there is a constant flow of air passing by the users face, a respirator which does not fit tightly around the face, will not be considered proper safety equipment. Maintenance personnel who have beards which lie between their face and the sealing mechanism of the respirator will not be allowed to be fit tested.

- **Supplied Air Respirators**. A compressor located outside the work area supplies air through a hose into a full-face mask.

- **SCBA (Self-Contained Breathing Apparatus)**. Does not require a hose to be carried along, however, it can be bulky and bothersome to change the oxygen tanks.

Respirator Fit Testing Procedures

- Positive Pressure Fit-Check. Place the palm of your hand over the exhalation port of the respirator. While exhaling, the respirator should fill with air. If the respirator begins to pull away from the face without leaking air, then the fit is good.

- Negative Pressure Fit-Check. Cover the inhalation ports with the palms of your hands. Inhaling, the respirator should begin to collapse on the face, with no air being drawn in along the seal.

- Smoke Testing. The wearer stands in a semi-closed chamber with the respirator properly in place and eyes closed. The respirator program manager sprays irritant smoke around the face-piece of the respirator to check for leaks. Inhalation of irritant smoke causes an involuntary response if respirator does not seal to face.

If the respirator does not leak at this point the wearer is instructed to move his/her head in an up and down motion while reciting the alphabet. Continue for 15 seconds. The head should then be moved in a left to right motion, and a circular motion, each for 15 seconds, while still reciting the alphabet. The wearer should then run in place for 30 seconds.

If no leakage has occurred during this time then the respirator has a proper fit. If there has been leakage, then the respirator should be adjusted accordingly, and the test re-conducted.

Procedures to Ensure Adequate Air Quality, Quantity and Flow of Breathing

Factors Which Will Affect Respirator Fit

It is of the utmost importance that the respirator being used for abatement activity provides a proper fit for the user. A proper fit means that there are no gaps between the user's face and the respirator seal mechanism. The respirator program manager will not confirm proper fit and authorize use of a respirator unless this criterion is met, regardless of the type of respirator being used; either half-face air purifying, full-face supplied air or other. This is for the users own personal protection.

- Facial Hair. Facial hair, including beards, sideburns, mustaches or even a few days stubble are not allowed on employees who are required to wear respirators that rely on a tight face-piece fit to achieve maximum protection. Facial hair between the wearer's skin and the sealing surface of the respirator will prevent a good seal.
- Eye Glasses. Ordinary eyeglasses should not be used with full-face piece respirators. Eyeglasses with temple bars or straps, which pass between the sealing surface of the respirator and the workers face, will prevent a good seal. Special corrective lenses can be permanently mounted inside a full face-piece respirator and are available from all manufacturers. To insure good vision, an individual designated by the manufacturer as qualified to install accessory items should mount corrective lenses.
- Facial Deformities. Facial deformities, such as scars, deep skin creases, prominent check bones, severe acne and the lack of teeth or dentures, can prevent a respirator from sealing properly.

Communication

Talking while wearing a respirator can break the seal of the face-piece. Workers who must speak should keep jaw movements to a minimum.

Other Restrictions

Workers shall not be allowed to chew gum, use tobacco or eat while wearing a respirator.

Respirator Inspection, Care and Maintenance

Respirator Inspection

- Make sure that there are no cracks in the face-piece and that it is not torn or deteriorated.
- Make sure inhalation and exhalation valves are in place, seated in the correct position and are free moving.
- Check straps to make sure they are not torn or worn.
- Make sure cartridges are seated correctly on the inhalation ports.
- These inspections should be conducted at least once every day that the respirator is in use, and as often as is felt necessary beyond that if it is thought that the respirator may have become damaged or deformed.

Cleaning and Storage of Respirators

The worker should clean respirators after each use. Cleaning should be done with lukewarm running water and a mild soap. Strong detergents, bleaches or excessively hot water should not be used as this may damage the respirator. Respirators should be thoroughly dried before put in any container for storage.

Respirators should be stored in a convenient, clean and sanitary location. Care should be taken to insure that the respirators are stored properly to protect against dust, harmful chemicals, sunlight, excessive heat or cold, moisture and mechanical damage. They should be stored in plastic bags which can be sealed or in containers with tight fitting lids. Respirators should be packed or stored so that the face-piece and exhalation valves will rest in their normal position. Respirators should never be hung by their straps as this may cause them to become deformed.

Proper Employee Training in Respirator Hazards

Balestrieri will continually evaluate and identify any respiratory hazards in the workplace, including a reasonable estimate of employee exposures and identification of the contaminant's chemical state and physical form. Assessment updates and/or changes to the program need to take place in case of:

- Employee's medical clearance needs to be renewed.
- Employee is exposed to inhalation hazards that have not previously been assessed.
- Employee's physical working conditions while wearing respiratory protection have changed.
- Other changes which have occurred that impact respirator use or working conditions to a specific employee.

Respirator Malfunction

In the event of a respirator failure or malfunction, the employee should immediately leave the contaminated environment and move to an uncontaminated area before removing their respirator. Do not re-enter the contaminated environment until the source of the respirator malfunction has been identified and corrected.

Proper Employee Training in the Use of Respirators

Training shall be conducted in such a manner that is understandable to all employees. Training will be provided prior to requiring employees to use a respirator in the workplace. Balestrieri shall ensure that each employee can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage or maintenance can compromise the protective effect of the respirator.
- What the limitations and capabilities of the respirator are.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on and remove, use and check the seals of the respirator.
- Proper procedures for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- Training shall be conducted annually.

HEPA Cartridges (P100)

When working in containment areas with high concentrations of asbestos fibers present in the air, it may be necessary to change the HEPA filter cartridges as frequently as every time you enter the work area. However, when using half-face respirators while performing such activities as glove bagging or patchwork, where the asbestos fiber count is very low, it is only necessary to change the cartridges when it becomes difficult to breathe. Cartridges might become clogged not due to asbestos fibers, but due to dust and dirt in the air. It may be necessary to change cartridges more frequently then, when working in tunnels or in dirty areas.

- It is important that the filters do not become wet, as they will smell and lose their filtering ability.
- Positive and Negative Pressure Fit Checks should be conducted every time the respirator is put on.
- Respirator inspection should be conducted at least once each day the respirator is worn and as often as is deemed necessary if it is felt the respirator may have been damaged.
- Qualitative Smoke Testing must be conducted once every six (6) months to insure that an individual's fit characteristics have not changed.

Putting on the Respirator

- Grasp the two straps located on the lower part of the respirator. Pull the respirator up to the face and attach the straps behind your neck.
- Grasp the two top straps and pull the respirator up to the bridge of your nose. Proper fit can be made by either adjusting the seating on the face, or by adjusting the straps on the top or bottom of the respirator. The respirator should fit snug, but not be pulled so tightly as to cause unnatural deformation of the face piece, which will lead to an improper seal.

Procedures for Regular Evaluation of this Program

Periodic review of the effectiveness of the respirator program is essential. Balestrieri will conduct periodic surveys to determine the effectiveness of the respirator program. This may include worksite inspections, interviews with respirator wearers, air monitoring and review of records. Acceptance of respirators by users is especially important. Users will be consulted periodically about their acceptance of wearing respirators. This includes comfort, resistance to breathing, fatigue, interference with vision, interference with communications, restriction of movement, interference with job performance and confidence in the effectiveness of the respirator to provide adequate protection.

Balestrieri will establish and retain written information regarding the medical evaluations, fit testing and the respirator program. This program will facilitate employee involvement.

Balestrieri will retain and make available records of medical evaluations as required by OSHA 29 CFR 1910.1020.

The above information can serve as an indication of the degree of protection provided by respirators and the effectiveness of the respirator program. Action shall be taken to correct any deficiencies found in the program. The findings of the respirator program evaluation will be reported and the report shall list plans to correct faults in the program and target dates for the implementation of the plans.

Definitions

The following definitions are important terms used in the respiratory protection section of this safety program.

Air-purifying respirator. A respirator with an air-purifying filter, cartridge or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Atmosphere-supplying respirator. A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge. A container with a filter, sorbet or catalyst or combination of these items, which removes specific contaminants from the air passed through the container.

Demand respirator. An atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation.

Emergency situation. Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee exposure. Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respirator protection.

End-of-service-life indicator (ESLI). A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbet is approaching saturation or is no longer effective.

Escape-only respirator. A respirator intended to be used only for emergency exit.

Filter or air purifying element. A component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering face piece (dust mask). A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

Fit factor. A quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test. The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator to an individual. See also qualitative fit test ELFT and quantitative fit test QNFT.

Helmet. A rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter. A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100 and P100 filters.

Hood. A respirator inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH). An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere.

Interior structural firefighting. The physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures, which are involved in a fire situation beyond the incipient stage.

Loose-fitting face piece. A respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting). A respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere. An atmosphere with oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP). An individual whose legally permitted scope of practice (i.e. license, registration or certification) allows him or her to independently provide or be delegated the responsibility to provide, some or all of the health care services required by paragraph (s) of this section.

Positive pressure respirator. A respirator in which the pressure inside the respirator inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR). An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator. A positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

Qualitative fit test (QLFT). A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT). An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respirator inlet covering. The portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device of breathing air source, or both. It may be a face piece, helmet, hood, suit or a mouthpiece respirator with nose clamp.

Self-contained breathing apparatus (SCBA). An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life. The period of time that a respirator, filter or sorbet or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator. An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-fitting face piece. A respirator inlet covering that forms a complete seal with the face.

User seal check. An action conducted by the respirator user to determine if the respirator is properly seated to the face.

Mobile Equipment Policy (Power Industrial Vehicles)

Balestrieri understands that operation of a power industrial vehicle (PIV) presents a hazard that can lead to serious injury and/or death at the workplace, and has provided employees with a PIV program to control this hazard with PIV maintenance, traffic management and employee training.

The goal of this program is to increase awareness of management and employees to the dangers that PIVs present, provide training on each PIV by qualified instructors and to comply with OSHA regulations.

PIVs include, but are not limited to:

- Forklifts
- Dump trucks
- Excavators/backhoes
- Front end loaders
- Scrapers/graders
- Semi/delivery trucks
- Skid steers/bobcats
- Aerial Lifts/Elevated Platforms

General PIV Hazard Prevention

- Check vehicle before each shift to ensure that all parts and accessories are in safe operating condition.
- Wear seat belts that meet OSHA standards except on equipment that is designed only for standup operation or that has no rollover protective structure.
- Equipment will only be operated by authorized Balestrieri employees.
- All equipment will only be used in the manner that it was designed and intended for.
- Do not drive a PIV in reverse gear with an obstructed rear view, unless is has an audible reverse alarm, or another worker signals that it is safe.
- Audible reverse alarms are to be checked and operational at all times.
- Drive vehicles or equipment only on roadways or grades that are safely constructed and maintained.
- Make sure that driver and all employees and others in the worksite are in the clear before using dumping or lifting devices.
- Lower or block bulldozer and scraper blades, end-loader buckets, dump truck bodies, etc., when not in use and leave all controls in neutral position.
- Set parking brakes when vehicles and equipment are parked and chock the wheels if they are on an incline.
- Haulage vehicles that are loaded by cranes, power shovels, loaders, etc., must have a cab shield or canopy that protects the driver from falling materials.
- Do not exceed a vehicle's rated load or lift capacity.
- Do not carry personnel unless there is a safe place to ride.
- Use traffic signs, barricades or flaggers when construction takes place near public roadways.
- Workers must be highly visible in all levels of light. Warning clothing, such as red or orange vests, are required and if worn for night work, must be of reflective material.
- Eye protection must be used with any equipment that does not have an enclosed cab.
- All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment.
- If the equipment needs to be fueled, make sure that the engine is shut off and there are no open flames in any near vicinity of the equipment to be fueled.

Specific Hazard Prevention and Training

Forklifts

- Provide equipment and training under OSHA powered industrial trucks standard.
- Provide truck and traffic control and speed training.
- Provide Powered Industrial Truck driving training.
    - Note that tip-overs occur most frequently when the truck is driven in reverse and turned with mast elevated.
- Require seat belt use.
- Provide fall protection tie-offs when use at upper levels of building is necessary.

- Require blocking/cribbing when a lift is jacked up to prevent crushing deaths.
- Require blocking mast and upright when working around mast to prevent caught between injuries and/or deaths.
- Provide training on docking to prevent struck by/crush by injuries and/or death.
- Require use of approved lifting platform secured to forks to prevent fall injuries and/or death.
- Provide training on lifting carriage (chains/moving parts) to prevent amputation injuries.

Dump Trucks

- Require seat belts.
- Provide training for driver and worker communications when backing up a truck to prevent injuries and/or death.
- Provide backup alarms.
- Provide high visibility clothing for pedestrian employees.
- Provide power line training if driving with bed raised to prevent electrocution deaths.
- Require blocking of raised bed to prevent crushing injuries and/or death if hydraulics activated or fail.

Excavators/Backhoes

- Provide training to prevent overhead loads to prevent struck by injuries and/or death.
- Provide swing radius protection to prevent caught between injuries and/or death.
- Provide operator and pedestrian worker training and communication to prevent struck by injuries and/or death.
- Provide high visibility clothing for pedestrian employees.
- Provide chains and rigging and training for lifting loads to prevent struck by load injuries and/or death.
- Prohibit riding in bucket or on side of excavator/backhoe to prevent fall injuries and/or death.
- Provide power line training to prevent electrocution deaths.
- Provide quick couplers and training to prevent struck by excavator/backhoe bucket injuries and/or death.

Front End Loaders

- Provide chains and rigging for lifting loads to prevent struck by load injuries and/or death.
- Provide operator and pedestrian worker training and communication to prevent struck by vehicle injuries and/or death.
- Provide high visibility clothing for pedestrian employees.

Scrapers/Graders

- Provide operator and pedestrian worker training and communication training to prevent struck by injuries and/or death.
- Provide high visibility clothing for pedestrian employees.

Semi/Delivery Trucks

- Provide driver and pedestrian worker training and communication to prevent struck by vehicle injuries and/or death.
- Provide dock safety training to prevent crushed by injuries and/or death.
    - Fatal accidents are primarily spotter employees who are signaling to the truck driver as the truck is backing up.

Skid Steers/Bobcats

- Require seat belt use.
- Provide driver and pedestrian worker training to prevent struck by vehicle injuries and/or death.
- Provide training for employees to ensure safety interlocks are not bypassed or malfunctioning.
- Provide training to keep head and body inside driver cockpit to prevent caught between injuries and/or death.

Aerial Lifts/Elevated Platforms

- Only trained and authorized people should operate the lift. A qualified instructor must make sure every operator understands the safety and operating instructions. This includes all warning decals on the unit.
- Always check for overhead obstructions before driving or elevating the platform.
- Refuel tanks only when the unit is turned off. If battery powered, recharged batteries in a well-ventilated area, away from any open flame.
- Prior to each shift a safety inspection must be completed by the operator; including a visual inspection and function test. If a problem is found, get the lift repaired immediately.
- Elevate the platform only when it is on a firm, level surface.
- Whenever working out of a man-lift, a full body harness must be worn, and properly attached to the basket.
- Always maintain a safe distance from debris piles, drop-offs, floor openings, etc.
- Never drive the man-lift when it is elevated above the limit the manufacturer considers safe.
- Guardrail, mid-rails and toe-boards must be in place.
- The platform must be equipped with a mechanical parking brake that will hold the unit securely on any slope it is capable of climbing. The brake should be tested regularly.
- Never use the lift's rails, planks across the rails, or a ladder to gain additional height.
- Modifications to aerial lifts/elevated platforms are prohibited.

Record Keeping

Management will maintain an inventory list of PIVs, maintenance records, and training records. Training records will also become a part of each employee's personnel record, and are available for employee review, upon request.

Fleet Policy

Balestrieri has a separate Fleet Policy.

Hazard Communication/Right to Know Policy

Balestrieri is firmly committed to providing all of our employees with a safe and healthy work environment. It is a matter of company policy to provide our employees with information about hazardous chemicals on the work site through our hazardous communication program, which includes container labeling, safety data sheets (SDS) and employee information and training as required by OSHA regulation 29 CFR 1910.1200, (GHS). This policy covers all potential workplace exposures involving hazardous substances as defined by federal, state and local regulations.

The safety director of Balestrieri will have the overall responsibility for coordinating the hazardous communication program. The safety director will make the written hazardous communication program available, upon request, to employees, their designated representatives and OSHA. This plan is available in English because all employees of Balestrieri speak and understand English.

Hazard Determination

Balestrieri does not intend to evaluate any of the hazardous substances purchased from suppliers and/or manufacturers but have chosen to rely upon the evaluation performed by the suppliers or by the manufacturers of the substances to satisfy the requirements for hazard determination.

Hazardous Chemicals

The safety director will compile a list of all hazardous chemicals that will be used (on or off job site) by reviewing container labels and SDS labels. The list will be updated as necessary. It will be kept on all job sites and a master file will be kept at the corporate headquarters (1538 County Club Parkway, Elkhorn, Wisconsin).

The supervisor is responsible for identifying and listing all hazardous chemicals stored, used or generated in his work site. This chemical inventory also serves as a list of all materials for which a safety data sheet must be maintained. The inventory must be updated and maintained as SDS updates, when chemicals are substituted or no longer used or new chemicals are brought on site.

The supervisor will ensure that all SDS forms are available for every hazardous chemical used in the work area and are available to employees on all work shifts.

Labeling

Labels provide an immediate warning of the hazards to which employees may be exposed. It is the policy of Balestrieri to ensure that containers of hazardous chemicals on a job site are properly labeled. When hazardous chemicals are removed from the original container and placed into a secondary container, the secondary container must be properly labeled with the same information as on the original container. All labels must have the following information:

- The manufacturer of the product
- The contents of the container
- The appropriate warning labels

The safety director will see that all original and secondary containers are properly labeled.

All chemicals in bags, drums, barrels, bottles, boxes, cans, cylinders, reaction vessels, storage tanks or the like, will be checked by the receiving department to ensure the manufacturer's label is intact, is legible and has not been damaged in any manner during shipment. Any containers found to have damaged labels will be quarantined until a new label has been installed.

Safety Data Sheets

Copies of SDS for all hazardous chemicals to which an employee may be exposed will be kept at corporate headquarters (1538 Country Club Parkway, Elkhorn, Wisconsin) at each job site and are readily accessible to employees during normal working hours, Monday through Friday, 8:00 a.m. to 4:30 p.m. The safety director is responsible for obtaining and maintaining the SDS files.

On an annual basis, Balestrieri will compile, review and update as necessary a complete inventory of all hazardous substances.

OSHA requires that each data sheet contain the following:

- **Identity**: The data sheet must contain the name of the chemicals found on the label. In addition, subject to deletion of legitimate trade secrets, it must give the chemical and common name of the substance. If the substance is a mixture and has not been tested as such, the data sheet must give the name of each hazardous constituent.
- **Characteristics**. The data sheet must recite the physical and chemical characteristics of the chemical, such as vapor pressure, flash point, etc.
- **Physical hazards**. Any potential for fire, explosion or reaction must be included in the data sheet.
- **Health hazards**. Signs and symptoms of exposure must be entered, as must all medical conditions that are likely to be aggravated by exposure.
- **Routes of entry**. The data sheet must specify whether the chemical typically enters the system by ingestion, inhalation, dermal exposure or some other route.
- **Exposure limits**. Of OSHA or the American Conference of Governmental Industrial Hygienist has established an exposure limit for the chemical or of a threshold limit value, these must be entered on the data sheet, as must any exposure limit used by the authority preparing the data sheet.
- **Carcinogens**. The data sheet must indicate whether the chemical lists as a carcinogen by the National Toxicology Program, by OSHA or by the International Agency for Research in Cancer.
- **Use and handling**. The data sheet must recite any general applicable precautions for safe handling and use that are known to the firm preparing the data sheet, including hygiene practices, protective measure during repair and maintenance of contaminated equipment and procedures for clean-up of spills and leaks. Industrial chemical consumers often might add site-specific procedures to the more general information offered by the chemical manufacturer.
- **Exposure controls**. The data sheet must include a description of special procedures to be employed in emergencies, as well as a description of appropriate first aid.
- **Dates**. The sheet must bear the date of its preparation or of its latest revision.

- **Information source**. Finally, the sheet must recite the name, address and telephone number of the person who prepared the data sheet or of some other person who can provide additional information relating to the chemical, such as citations to scientific literature or specialized emergency procedures.
- **Chemical/Material Approval**. All chemicals received, used or stored at the location/operations are required to be reviewed and approved prior to use. The approval process includes and evaluation of less hazardous chemicals, potential exposure issues, and proper work practices as well as regulatory compliance.

  The Project and Safety Manager reviews hazardous chemicals as part of the introduction of new equipment, service notes and O&M kit reviews. The SDS's are sent to the Safety Team, reviewed and approved by the Safety Manager and then entered in the SDS Matrix.

  As much as feasible, the most appropriate chemical(s) are used in operations, with respect to employee safety, use and storage, regulatory requirements, chemical effectiveness, environmental concerns, waste (disposal), and cost.

  The following criteria are used:
    - Receipt of all required safety/regulatory information (safety data sheets, SDS).
    - Certification by customs and other appropriate regulatory agencies.
    - Evaluation and approval by Safety personnel.
    - Estimated quantities required.
    - Planned use descriptions.

  The Safety Team will review each project for impact on the Chemical Management Program.

  - **<u>Material Approval Process Responsibilities:</u>**
    - Project Manager (PM) or Project Coordinator (PC) will:
      - Obtain a legible SDS from the outside supplier or the integrated supplier of a new material
      - Provide Safety Coordinator with SDS forms at weekly Project Meeting.
      - The Safety Team will review and approve and advise the PM or PC.
      - The PM may order chemicals upon approval from the Safety Team.
    - Balestrieri Safety Coordinator:
      - Conducts the first-tier review of new materials or chemicals that are used in Balestrieri operations that get issued a matrix number.
      - Determination if the use of the material is compatible with Pollution Prevention Goals.
      - Review the health, safety, and environmental data and, based on their review indicate if the chemical is acceptable for general use.
      - The material or item may be approved without restriction, approved for use under specific controls, or rejected.
    - Safety Manager:
      - Conducts the review of new materials or chemicals that are used in the field.
      - Determination if the use of the material is compatible with Pollution Prevention Goals and applicable regulations.
      - Determination if there are applicable reporting requirements in relation to storage, emissions, processes, uses or importation.
      - Review the health, safety, and environmental data and, based on their review, indicate if the chemical is acceptable for general use.
      - The material or item may be approved without restriction, approved for use under specific controls or rejected.
      - Materials approved for use are then added to the SDS Matrix.
    - PM's shall:
      - Ensure that all chemicals ordered and used are listed on the SDS Matrix.
      - Support the Safety team in conducting Chemical sweeps.
      - Assist in ensuring the appropriate quantities, engineered controls, and PPE are utilized and met.
      - Ensure that all chemicals are labelled per the State and Federal regulations.

        - Maintain the current copy of the SDS for the chemicals they have in their possession.
    - Upon approval:
        - The PM or PC is notified.
        - The Balestrieri Safety team is responsible to ensure that each hazardous material in the field has the appropriate labeling available according to State and Federal classifications.
        - Data is entered onto the SDS Matrix from the SDS. The Safety Coordinator facilitates the entry of chemical hazard data into the database.

A system to prevent unapproved chemicals from entering the location/operation has been established as follows:

- Chemical changes associated with proposed process changes are reviewed prior to implementation.
- The approval system is evaluated periodically and updated as needed.
- Employee training to ensure the requirements are communicated.
- Safety Audits to verify that only approved chemicals are used in the field.

Employee Training

Employees are to attend a training session on hazardous chemicals used by Balestrieri at time of employment and periodically when we encounter a new chemical. The GHS/Hazard Communication training will cover the following:

- An overview of the hazardous communication requirements.
- A review of the chemicals present at the shop and on the job site including but not limited to asbestos, lead, arsenic, silica, welding fumes and compressed gases.
- The location and availability of the company's written hazardous communication program, a list of hazardous chemicals and SDS.
- Methods and observation techniques that may be used to detect the presence or release of hazardous chemicals on the job site.
- Physical and health hazards of chemicals on the job site.
- How to lessen or prevent exposure to hazardous chemicals on the job site by using proper safety precautions, protective equipment, etc.
- Emergency procedures to follow if employees are exposed to hazardous chemicals.
- An explanation of the company's hazardous communication program, including how to read labels and SDS to obtain appropriate information.
- Periodic field checks will be made to ensure employee understanding.
- When a new type of product is introduced into a job site or the chemical composition of a product changes, the foreman will review the above items as they relate to the new chemicals.
- After attending appropriate training, each employee will attest by signing the Workers Acknowledgement.

Non-Routine Tasks

Periodically employees are required to perform non-routine tasks. Prior to starting such jobs, each affected employee will be informed by the foreman about hazards to which they may be exposed and appropriate protective and safety measures (e.g., unlabeled pipes).

Informing Other Employees

To ensure that the employees of other contractors have access to information on the hazardous chemicals at a job site, it is the responsibility of the foreman to provide the other contractors the following information:

- Where the SDS are located.

- The name and location of the hazardous chemicals to which their employees may be exposed and any appropriate protective measures required minimizing their exposures.
- An explanation of the labeling system used on the job site.

Hazardous Waste Transportation

The Hazardous Materials Regulations (HMR) is issued by the US Department of Transportation (USDOT) and governs the transportation of hazardous materials in interstate, intrastate and foreign commerce.

The primary goal of the HMR is the safety of the public and those whose occupations involve preparing hazardous materials for transportation or transporting them. To minimize risks, USDOT has issued specific requirements for shipments of hazardous materials in transportation. The HMR are divided into four general areas:

- Hazardous materials identification and classification
- Hazard communication
- Packaging requirements
- Operational rules

Training is provided by Balestrieri as a systematic approach that ensures an employee has familiarity with the general provisions of 49 CFR 172. This training includes but is not limited to:

- Training for transportation and transporting
- Security plans
- Emergency response information

Employees will be able to recognize and identify hazardous materials, have knowledge of specific requirements of the subchapters applicable to functions performed by the employee and have knowledge of emergency response information, self-protection measures and accident prevention methods and procedures.

What is a Hazardous Material?

A hazardous material is any item or agent (biological, chemical, and physical) which has the potential to cause harm to humans, animals or the environment, either by itself or through interaction with other factors. Hazardous materials professionals are responsible for and properly qualified to manage such materials. This includes managing and/or advising other managers on such items at any point in their life-cycle, from the process planning and development of new products; through manufacture, distribution and use; to disposal, cleanup and remediation.

Hazardous materials are defined and regulated in the United States primarily by laws and regulations administered by the U. S. Environmental Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation (USDOT), and the U.S. Nuclear Regulatory Commission (NRC). Each has its own definition of a “hazardous material”.

OSHA’s definition includes any substance or chemical which is a “health hazard” or “physical hazard”, including chemicals which are carcinogens, toxic agents, irritants, corrosives, sensitizers; agents which act on the hematopoietic system; agents which damage the lungs, skin, eyes, or mucous membranes; chemicals which are combustible, explosive, flammable, oxidizers, pyrophorics, unstable-reactive or water-reactive; and chemicals which in the course of normal handling, use or storage may produce or release dusts, gases, fumes, vapors, mists or smoke which may have any of the previously mentioned characteristics. (See 29 Codes of Federal Regulations (CFR) 1910.1200.)

EPA incorporates the OSHA definition and adds any item or chemical which can cause harm to people, plants, or animals when released by spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. (40 CFR 355 contains a list of over 350 hazardous and extremely hazardous substances.)

DOT defines a hazardous material as any item or chemical which, when being transported or moved, is a risk to public safety or the environment and is regulated as such under the code: Dangerous Goods Regulations of

the International Air Transport Association; Technical Instructions of the International Civil Aviation Organization; U.S. Air Force Joint Manual, Preparing Hazardous Materials for Military Air Shipments.

Health Effects

Exposure to hazardous waste may produce a wide range of adverse health effects. The likelihood of an adverse health effect occurring and the severity of the effect, are dependent on the toxicity of the chemical, route of exposure and the nature and extent of exposure to that substance. In order to better understand potential health effects, field personnel should have an understanding of the basic principles and terminology of toxicology.

Toxicology is the study of the nature, effects and detection of poisons in living organisms. Some examples of these adverse effects, sometimes called toxic end points include carcinogenicity (development of cancer), hepatotoxicity (liver damage), neurotoxicity (nervous system damage), and nephrotoxicity (kidney damage). This is by no means a complete list of toxic end points but rather a selection of effects that might be encountered.

Toxic chemicals often produce injuries at the site at which they come into contact with the body. A chemical injury at the site of contact with the body, typically the skin and the mucous membranes of the eyes, nose, mouth or respiratory tract, is termed a local toxic effect. For example, irritant gases, such as chlorine and ammonia can produce a localized toxic effect in the respiratory tract, corrosive acids and bases can produce a local damage to the skin. In addition, a toxic chemical may be absorbed into the blood stream and distributed to other parts of the body. These compounds may then produce systemic effects. For example, many pesticides are absorbed by the skin, distributed to other sites in the body and produce adverse effects such as seizures or other neurological problems.

The three main routes of chemical exposure are:

- Inhalation
- Skin contact
- Ingestion

Balestrieri provides all employees with personal protective equipment and provides training in the use of such equipment. Balestrieri employees are required to wear the appropriate protective equipment when working with and around hazardous materials and waste. This personal protective equipment includes:

- Body protection
- Eye and face protection
- Foot protection
- Hand protection
- Head protection
- Respirators

Hazard Recognition

There are six clues that may confirm the presence of hazardous materials. These clues are included in this guidance document to facilitate and expedite prompt identification of any hazardous materials.

1. Occupancy and Location – Project preplanning should identify the specific sites that contain hazardous materials or where they are stored on a jobsite by the owner, general contractor or any other contractor involved in the project.
2. Container Shape – DOT regulations specify container specifications for transport of hazardous materials. There are three categories of packaging:
    a. Stationary bulk storage containers at fixed facilities that come in a variety of sizes and shapes.
    b. Bulk transport vehicles, such as rail and truck tank cars that can vary in shape depending upon the cargo.

c. Smaller quantities of hazardous materials that may be packaged in fiberboard boxes, metal drums or cylinders with labeling.

Often the shape and configuration of the container can be a useful clue to the presence of hazardous materials.

3. Markings/Colors – Transportation vehicles must use DOT markings, including identification (ID) numbers. Identification numbers, located on both ends and both sides are required on all cargo tanks, portable tanks, rail tank cars and other packages that carry hazardous materials. A marking system designed by the National Fire Protection Association (NFPA) identifies hazardous materials at terminals and industrial sites but does not provide product-specific information.

   This system uses a diamond divided into four quadrants. Each quadrant represents a different consideration:

   a. The left blue quadrant pertains to health
   b. The top red quadrant pertains to flammability
   c. The right yellow quadrant pertains to reactivity
   d. The bottom white quadrant highlights specific information

   In addition, a number from zero through four indicates the relative risk of the hazard with zero being the minimum risk.

4. Placards/Labels – These convey information by uses of colors, symbols, Hazard Communication Standard, American National Standard Institute (ANSI) Standards for Precautionary Labeling of Hazardous Industrial Chemicals, United Nations Hazard class numbers and either hazard class wording or four-digit identification numbers. Placards are used when hazardous materials are in bulk, such as in cargo tanks, labels designate hazardous materials on small packages.
5. Shipping Papers – These can clarify what is labeled "dangerous" on placards. They should provide the shipping name, hazard class, ID number and quantity and may indicate "waste" or "poison". (Shipping papers must accompany all hazardous material shipments.)
6. Senses – Odor, vapor clouds, dead animals or dead fish, fire and irritation to skin or eyes can signal the presence of hazardous materials. Generally, if one detects the odor of hazardous materials, one should assume that exposure has occurred. Some chemicals; however, can impair an individual's sense of smell (i.e., hydrogen sulfide) and others have no odor at all (i.e., carbon monoxide).

Hazardous Waste Definitions for Transportation

Hazardous Waste is any material that is subject to the Hazardous Waste Manifest requirements of the EPA.

NR 477 (Waste Shipment Records) states that all asbestos containing waste materials are defined as Regulated Asbestos Containing Material (RACM) waste and materials contaminated with asbestos including disposable equipment and clothing. In addition, all asbestos containing waste material transported off a facility is covered under NR 477.

The USDOT (49 CFR 172 Shipping Papers) states that asbestos is defined as a hazardous material for transportation. The exception is for asbestos immersed or fixed in a natural or artificial binder material, such as cement, plastic, asphalt, resins or minerals or, contained in manufactured products which are not subject to the requirements. DOT interpretation is that broken or friable materials are subject to hazardous material transportation.

Marking and Labeling

As the work progresses and to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos containing waste shall be removed and transported directly to the prearranged disposal location, which must be an authorized site in accordance with regulatory requirements of the NESHAP and Wisconsin Administrative Rule NR 447.13. Use of intermediate storage locations is not an accepted disposal procedure.

RACM will have no visible discharge (non-friable). Control methods include keeping the material adequately wet, sealed in leak tight containers or wrapping. The containers will be properly labeled with OSHA warning labels that contain the verbiage and the generator name and location. The following is the proper label for asbestos waste:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

GENERATOR: ABC COMPANY
ADDRESS: 1000 Main Street
You're Town, 12345

Waste Manifests

A Hazardous Waste Manifest is a specific shipping document required by the USDOT and the EPA for hazardous waste shipments. This is also referred to as the Uniform Hazardous Waste Manifest (UHWM).

Balestrieri provides documentation in the form of a transportation and disposal manifest that will provide a chain-of-custody record of all hazardous waste from project site to the disposal site. An example of this form is appended to this section. These records must account for all asbestos containing waste generated and copies of all such records shall be delivered to the Construction Representative.

Transportation to the Landfill

Balestrieri employees who haul hazardous waste to an authorized landfill are trained to follow these procedures:

Once hazardous waste has been removed from the regulated area, in the proper labeled containers, they shall be loaded into an enclosed truck for transportation.

The enclosed cargo area of the truck shall be free of debris and lined with 6-mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the sidewalls. Wall sheeting shall be overlapped and taped into place.

Drums and containers shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large components shall be secured to prevent shifting and bags placed on top. Employee will not throw drums and/or containers into the truck cargo area.

Personnel loading hazardous waste shall be protected by disposable clothing including head, body and foot protection; and, at a minimum, half-face piece air purifying dual cartridge respirators equipped with high efficiency filters.

Any debris or residue observed on containers or surfaces outside of the regulated area resulting from clean up or disposal activities shall be immediately cleaned up by using HEPA filtered vacuum equipment and/or wet methods as appropriate.

Disposal at the Landfill

Upon reaching the landfill, trucks are to approach the dump location as closely as possible for unloading of the hazardous waste.

Bags, drums and components shall be inspected as they are off-loaded at the disposal site. Damaged containers shall be very carefully taped shut and repacked into drums, containers or bags as applicable.

Waste containers shall be placed on the ground at the disposal site, not pushed or thrown out of the trucks.

Personnel off-loading containers at the disposal site shall wear protective clothing consisting of disposable head, body and foot protection; and, at a minimum, half-face air purifying dual cartridge respirators equipped with high efficiency filters.

Following the removal of all containerized waste from the truck, the truck cargo area shall be decontaminated using HEPA vacuums and wet methods to meet the no visible residue criteria. Polyethylene sheeting shall be removed and discarded along with contaminated cleaning materials and protective clothing in bags, containers, and/or drums at the disposal site.

Agencies

DHS – The Asbestos and Lead Program at the Department of Health Services

DNR – Department of Natural Resources – A Wisconsin State Agency

DNR AM – The Air Management Program at the Department of Natural Resources

DNR WA – The Waste and Materials Management Program at the Department of Natural Resources

DNR RR – The Remediation and Redevelopment Program at the Department of Natural Resources

DOT – Department of Transportation

EPA - Environmental Protection Agency

USDOT – United States Department of Transportation

Glossary

BULK PACKAGING – a packaging transport vehicle or freight container in which hazardous materials are loaded with no intermediate form of containment.

CARGO – Product, including its packaging.

CARGO TANK – A bulk packaging that is loaded or unloaded without being removed from the motor vehicle.

CHART 12 – DOT's Hazardous Materials Marking, Labeling and Placarding Guide.

COMPRESSED GAS – Material or mixture meeting criteria in 49 CFR 173.115(b).

COMPATIBILITY – Relates to possible interactions between a material and its container or other products that may be loaded or transported together.

COMPOUND – Two or more ingredients that are chemically united.

DANGEROUS GOODS – International term for hazardous materials.

DOCUMENTATION – Completed forms required to accompany hazardous materials such as shipping papers, certificates, emergency response information and manifests.

EMERGENCY RESPONSE INFORMATION – Information that can be used in the mitigation of an incident involving hazardous materials.

EXCEPTIONS – Relief from certain HM regulations.

EXEMPTIONS – Specific USDOT written relief from certain HM Regulations.

FLASH POINT – The minimum temperature at which a substance gives off flammable vapor(s).

FORBIDDEN – A material that is prohibited from being offered or accepted for transportation.

GENERATOR – An EPA term used for a hazardous waste producer and/or shipper.

GROSS WEIGHT – Total weight of packaging, including its contents.

HAZARD CLASS – A group of hazardous materials that share dangerous characteristics.

HAZARD DIVISION – A means of sub-dividing similar hazardous materials which require different hazard communications.

HAZARDOUS MATERIAL – A substance or material capable of posing an unreasonable risk to health, safety or property when transported in commerce.

HAZARDOUS WASTE – Any material that is subject to the Hazardous Waste Manifest requirements of the DPA. (40 CFR Part 262)

HAZARDOUS WASTE MANIFEST – A specific shipping document required by the USDOT and the EPA for hazardous waste shipments. This is sometimes referred to as the Uniform Hazardous Waste Manifest (UHWM).

IDENTIFICATION NUMBER – The UN or NA "four-digit number" assigned to hazardous materials. These numbers are used for identification and emergency response.

INCIDENT – Unintentional release of hazardous material(s).

INFECTIOUS SUBSTANCE – Living microorganism or its toxin which may cause severe, disabling or fatal disease.

IRRITATING MATERIAL – A liquid or solid substance. Upon contact with fire or air, the material gives off dangerous or intensely irritating fumes. Irritating material does not include any poisonous material.

LABELS – Hazard class identifiers required on hazardous materials packaging.

MARKINGS – Information required to be placed on the outside of the shipping container.

MIXTURE – A material composed of one or more compounds.

MOTOR VEHICLE COMMON CARRIER – A motor carrier that transports property for hire.

MOTOR VEHICLE CONTRACT CARRIER – A motor carrier that transports only property for those shippers with whom they have a contractual agreement.

MOTOR VEHICLE PRIVATE CARRIER – A motor carrier that transports property of which it is owner, lessee or bailee. Such transportation is for the purpose of sale, lease or rent.

MULTIPLE HAZARDS – A material meeting the definition of more than one hazard class/division.

NET WEIGHT – A measure of weight referring only to the contents of a package and does not include the weight of the packing material.

NON-BULK PACKAGING – A packaging which has an internal volume equal to or less than:

- 450 liters (119 gallons) for a liquid
- 400 kilograms (882 pounds) net mass for a solid
- 454 kilograms (1,000 pounds) water capacity for a gas.

OVERPACK – An enclosure that is used by a single consignor to provide protection or convenience in the handling of package. It may consolidate two or more packages.

PACKAGE – Packaging plus its contents.

PACKAGING – A receptacle and any other components or materials used to provide containment. The packaging must perform its containment function in conformance with the HMR.

PACKING GROUP – Assigned based on the degree of danger presented by the hazardous material:

- PG I – Great danger
- PG II – Medium danger
- PG III – Minor danger

PERFORMANCE-ORIENTED PACKAGING – Container and any other components or materials necessary for the packaging to perform its containment function. Specific testing procedures must be performed and so marked on the packaging.

PERSON – Any of the following: individual, firm, co-partner, corporation, company, association, joint-stock association, government or Indian tribe.

PLACARD – Hazard class identifiers required on transport vehicles or freight containers.

PLACARDING – Process of determining and applying correct placards.

PORTABLE TANK – A bulk packaging designed to be loaded on or temporarily attached to a transport vehicle or vessel.

PRE-EMPTION – State or local requirements that conflict with the federal hazardous materials transportation law may be set aside by the federal government.

PRIMARY LABEL – Label for primary hazard of the material.

PROPER SHIPPING NAME – Name listed in Roman type in the HMT.

RACM – Regulated Asbestos Containing Material:

- A friable asbestos material
- Any material containing asbestos that can be crumbled to a powder by hand pressure. Common types of friable ACM include pipe insulation, sprayed on fire proofing and tile sound insulation. Friable ACM has little structural strength and contains asbestos fibers that are readily released upon breaking
- A Category I nonfriable ACM that has become friable
- Packings, gaskets, resilient floor covering and asphalt roofing containing asbestos that cannot be crumbled to powder by hand pressure. Category I ACM is pliable (not brittle), breaks by tearing rather than fracturing and does not easily release asbestos fibers upon breaking
- A Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading
- A Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to power by the force expected to act on the material in the course of demolition or renovation operations
- This includes rigid exterior siding and boards by the trade name “transite”. Category II ACM may not be pliable and may release asbestos fibers upon breaking

RADIOACTIVE MATERIALS – Materials having a specific activity of greater than 0.002 micros per gram.

REGISTRATION – A person who transports certain hazardous materials is required to register and pay a fee.

REPORTABLE QUANTITY – RQ means the quantity specified in Column 2 of Appendix A to 172.101 for any material identified in Column 1 of the appendix.

RESIDUE – The hazardous materials remaining in a packaging, tank car, etc. after unloading.

SHIPPING PAPERS – Manifest, bill of lading, shipping order or document to accompany hazardous materials shipments. Must contain information required by USDOT.

SOLUTION – Homogenous liquid mixture of two (2) or more chemical compounds. The mixture will not separate during transportation.

SPECIFICATION PACKAGING – Packaging specifically designed for a particular class or classes of hazardous material. Packaging identified by UN standard packaging and/or USDOT specification number.

STATE VARIATIONS – Listed in the ICAO Technical Instructions; governmental options differing from the ICAO Technical Instructions.

STRONG OUTSIDE CONTAINER – Outermost enclosure for protecting inner packages and preventing unintentional release of contents during transportation.

SUBSIDIARY LABELS/PLACARDS – Identify the subsidiary or secondary hazard. Class number must not be shown on the label/placard.

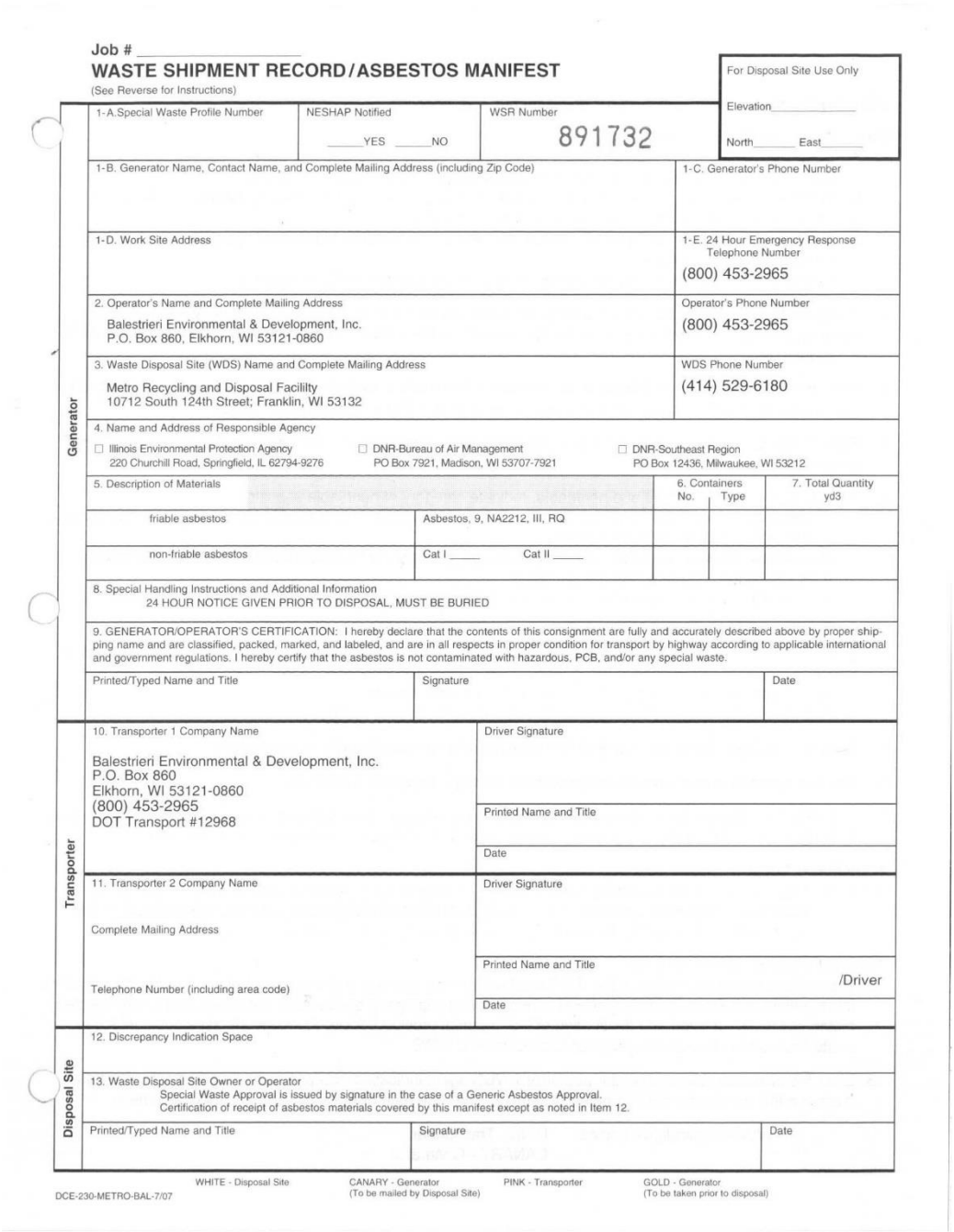
TECHNICAL NAME – A recognized chemical name currently used in scientific and technical handbooks, journals and tests. Trade names may not be used as technical names, unless they are in the HMT.

TRANSPORT INDEX – The dimensionless number on the label of a radioactive materials package. Designates the degree of control necessary during transportation.

UNIT LOAD DEVICE – Any type of freight container, aircraft container, aircraft pallet with a net or aircraft pallet with a net over an igloo.

Samples

Manifests, Shipping Papers, etc.



Job # _____

WASTE SHIPMENT RECORD / ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only
Elevation_____
North_____ East_____

Generator

1-A. Special Waste Profile Number	NESHAP Notified	WSR Number
	_____YES _____NO	891732

1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code)

1-C. Generator's Phone Number

1-D. Work Site Address

1-E. 24 Hour Emergency Response Telephone Number
(800) 453-2965

2. Operator's Name and Complete Mailing Address
Balestrieri Environmental & Development, Inc.
P.O. Box 860, Elkhorn, WI 53121-0860

Operator's Phone Number
(800) 453-2965

3. Waste Disposal Site (WDS) Name and Complete Mailing Address
Metro Recycling and Disposal Facility
10712 South 124th Street; Franklin, WI 53132

WDS Phone Number
(414) 529-6180

4. Name and Address of Responsible Agency
☐ Illinois Environmental Protection Agency
220 Churchill Road, Springfield, IL 62794-9276
☐ DNR-Bureau of Air Management
PO Box 7921, Madison, WI 53707-7921
☐ DNR-Southeast Region
PO Box 12436, Milwaukee, WI 53212

5. Description of Materials		6. Containers No.	Type	7. Total Quantity yd3
friable asbestos	Asbestos, 9, NA2212, III, RQ			
non-friable asbestos	Cat I _____ Cat II _____			

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

Printed/Typed Name and Title	Signature	Date

Transporter

10. Transporter 1 Company Name
Balestrieri Environmental & Development, Inc.
P.O. Box 860
Elkhorn, WI 53121-0860
(800) 453-2965
DOT Transport #12968

Driver Signature
Printed Name and Title
Date

11. Transporter 2 Company Name
Complete Mailing Address
Telephone Number (including area code)

Driver Signature
Printed Name and Title /Driver
Date

Disposal Site

12. Discrepancy Indication Space

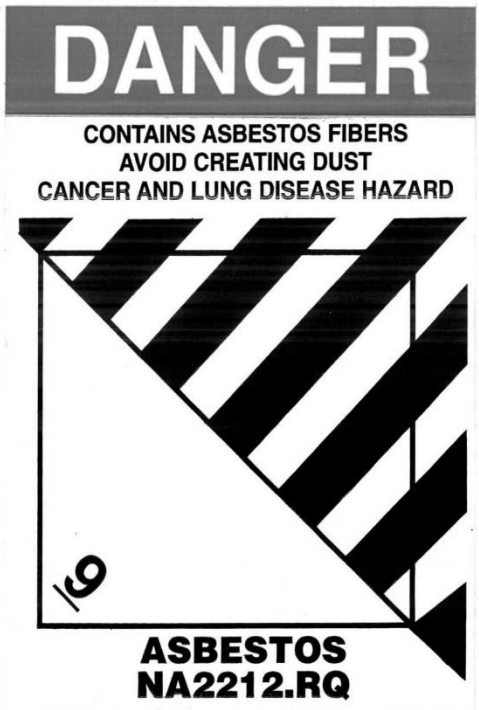
13. Waste Disposal Site Owner or Operator
Special Waste Approval is issued by signature in the case of a Generic Asbestos Approval.
Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12.

Printed/Typed Name and Title	Signature	Date

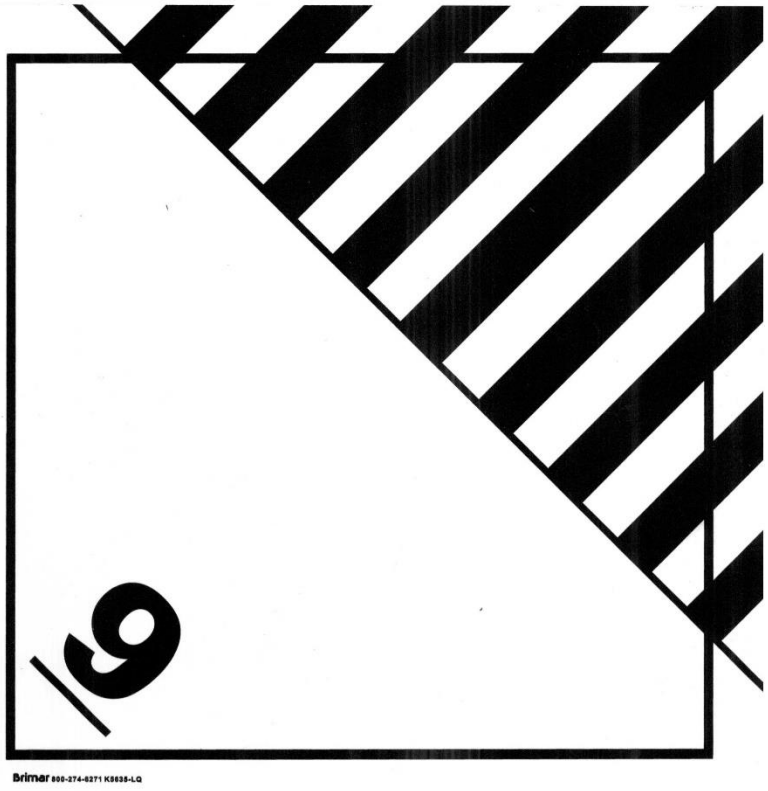
WHITE - Disposal Site
CANARY - Generator (To be mailed by Disposal Site)
PINK - Transporter
GOLD - Generator (To be taken prior to disposal)

DCE-230-METRO-BAL-7/07

Hazardous Materials Warning Labels



Hazardous Materials Warning Placards



DOT Hazardous Materials for Transportation

Balestrieri provides training in accordance with DOT 49 CFR Part 172 for employees who handle, transport or document hazardous materials. Topics include, but are not limited to packaging of asbestos, lead paint and PCB ballast, identification procedures, labeling and marking, placarding, waste manifest, shipping documentation, emergency response information and security plans. Balestrieri, while practicing proper waste disposal transport regulations of the Wisconsin Spill Law under Chapter 292.11, is aware there might be an instance where an accidental spill may occur during the transport of hazardous waste.

A hazardous substance in 292.11 is defined as "any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration, or physical, chemical or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the department."

Employees who transport hazardous waste materials are trained to report spills by immediately calling the Wisconsin DNR Hotline 1-800-943-0003.

DOT Compliance Inspection

USDOT has the authority to conduct unannounced compliance checks on work sites and landfills. The following is a series of tips to help you better prepare for a USDOT inspection:

- If a USDOT Compliance Officer ("CO") arrives for an inspection:
    - Stay calm and in control
    - Inform Ken Balestrieri immediately – (262) 215-9564
        - If Ken Balestrieri is not available, call Steve Jandrowski (262) 215-9516
- You are licensed and trained. Always keep proof with you of your:
    - OTS hazardous materials transportation training card
    - Your asbestos license
- Balestrieri complies with the USDOT's hazardous material (Asbestos) transportation requirements. Be prepared to explain.
- Asbestos usually is a USDOT hazardous material (49 CFR Part 172, Subpart B)
    - Broken or friable materials are subject to USDOT hazardous materials regulations.
    - Asbestos is not a USDOT hazardous material if it is immersed or fixed in a natural or artificial binder material (cement, plastic, asphalt, resins, mineral) or contained in manufactured products (49 CFR 172.102 (156)).
- Because Balestrieri' s trucks are not capable of hauling materials in bulk packaging having a capacity equal to or greater than 468 cubic feet (solids), Balestrieri does not need:
    - A hazardous materials registration (49 CFR 107.601(4))
    - An in-depth security plan (49 CFR 172.80(b)(4)
- Before leaving a job site, Balestrieri employees make sure:
    - Each waste manifest is properly prepared (including total yardage quantity), signed, carried and given to the Balestrieri employee (49 CFR 172.205 and 40 CFR 262.20).
    - Asbestos material is adequately wet, sealed (in leak-tight containers or wrapping) and labeled (with OSHA warning and generator name and location) (49 CFR 273.216, 49 CFR Part 173, Subpart B, NR 447.13, 23(4), 447.17(5), NR 502.06(4)(d) and 29 CFT 1926.1101.
    - Transport vehicles are marked during loading and unloading (49 CFR Part 172, Subpart B).

- USDOT shipping name and Class 9 label is on each package of friable asbestos (49 CFR Part 172, Subpart E and 49 CFR 172.504(f) (9)).

Hazardous Waste Transportation Spill Incidents

Balestrieri normally contracts with other companies to haul hazardous waste materials. However, there are instances where Balestrieri does transport hazardous waste.

In order to reduce the danger to public health, safety and welfare from the leaks and spills of hazardous substances, regulations are promulgated by various governmental agencies to establish response, treatment, removal, cleanup and responsibility for any hazardous material spill incidents.

The Hazardous Materials Regulations (HMR) is issued by the US Department of Transportation (USDOT) and governs the transportation of hazardous materials in interstate, intrastate, and foreign commerce.

The primary goal of the HMR is the safety of the public and those whose occupations involve preparing hazardous materials for transportation or transporting them. To minimize risks, USDOT has issued specific requirements for shipments of hazardous materials in transportation. The HMR are divided into four general areas:

- Hazardous materials identification and classification
- Hazard communication
- Packaging requirements
- Operational rules

Wisconsin statutes and administrative codes govern the reporting, investigation and cleanup that is required after a discharge and/or spill of a hazardous substance. There are two basic categories:

- Spills – Spill incidents that need an immediate response such as a truck rollover, failure of a storage tank valve or failure of a wall in a manure storage lagoon.
- Discovery through analysis – Soil or groundwater contamination that is discovered via sampling.

The Wisconsin Department of Natural Resources (DNR), under Section 292.11 Wis. Stats. Has adopted a "Spills Law". The DNR has established that all spill incidents should be reported immediately using the 24-hour toll free hotline (1-800-943-0003).

Balestrieri provides training in accordance with DOT 49 CFR Part 172 for employees who handle, transport or document hazardous materials. Topics include but are not limited to:

- Identification procedures
- Packaging requirements
- Labeling and marking procedures
- Placards
- Shipping documentation
- Waste manifests
- Personal protective equipment
- Emergency response to spill incidents
- Security plans

Balestrieri, while practicing proper waste disposal transport regulations of the Wisconsin Spill Law under Chapter 292.11 is aware there might be an instance where an accidental spill may occur during the transport of hazardous waste. Medical surveillance is available for emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency.

A hazardous substance in 292.11 is defined as "Any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality, an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration, physical, chemical or infectious characteristics. This term includes; but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the department."

Employees who transport hazardous waste materials are trained to report spills by immediately calling the Wisconsin DNR Hotline, 1-800-943-0003.

Balestrieri believes that proper emergency planning and response are important elements of the safety and health program that help minimize employee exposure and injury. Their goal is to provide their employees with:

- Pre-emergency planning
- Personal protective equipment
- Spill response materials and kits adequate for the chemicals that have the potential to be spilled.
- Personnel roles, lines of authority and communication procedures
- Emergency recognition and prevention
- Emergency medical and first-aid treatment
- Methods or procedures for alerting onsite employees and the public
- Evacuation routes and procedures
- Safe distances and places of refuge
- Site security and control
- Decontamination procedures

U.S. Department of Labor's Occupational Safety and Health Administration (OSHA, 29 CFR 1910.120) and regulations issued by the U.S. Environmental Protection Agency (EPA, 40 CFR Part 311) require first responders be trained using the Emergency Response Guidebook they provide. This guidebook is for first responders during the initial phase of a dangerous goods/hazardous materials transportation incident. Balestrieri provides both the Emergency Response Guidebook and training based on this guidebook to Balestrieri employees.

Balestrieri' s hazardous material training for any employee who handles, transports or documents hazardous materials as outlined in 49 CFR 172.700 includes but is not limited to the following:

- Hazard recognition and hazardous materials table
- Hazardous materials transportation – asbestos overview
- Shipping papers and waste manifests
- Marking and placarding requirements
- Security requirements
- Emergency response and how to use the emergency response guidebook

The senior official at an emergency response is the most senior official on the site who has the responsibility for controlling operations at the site. Balestrieri employees likely to witness, discover, and/or are a first responder to a hazardous substance release is trained to notify the proper authorities and to follow these safety precautions for emergency response to a hazardous material spill/incident:

Approach cautiously from upwind. If wind direction allows, consider approaching the incident from uphill. Resist the urge to rush in; others cannot be helped until the situation has been fully assessed.

Secure the scene. Without entering the immediate hazard area, isolate the area and assure the safety of people and the environment, keep people away from the scene and outside the safety perimeter. Allow enough room to move and remove your own equipment.

Identify the hazards. Placards, container labels, shipping documents, Material Safety Data Sheets, Rail Car and Road Trailer Identification Charts, and/or knowledgeable personal on the scene are valuable information sources. Evaluate all available information and consult the recommended guide to reduce immediate risks. Additional information provided by the shipper or obtained from another authoritative source, may change some of the emphasis or details found in the guide. Remember, the guide provides only the most important and worst case scenario information for the initial response in relation to a family or class of dangerous goods. As more material-specific information becomes available, the response should be tailored to the situation.

Assess the situation. Consider the following:

- Is there a fire, a spill or a leak?
- What are the weather conditions?
- What is the terrain like?
- Who/what is at risk: people, property or the environment?
- What actions should be taken: Is an evacuation necessary? Is diking necessary? What resources (human and equipment) are required and are readily available?
- What can be done immediately?

Obtain help. Advise your headquarters to notify responsible agencies and call for assistance from qualified personnel.

Decide on site entry. Any efforts made to rescue persons, protect property or the environment must be weighed against the possibility that you could become part of the problem. Enter the area only when wearing appropriate protective gear.

Respond. Respond in an appropriate manner. Establish a command post and lines of communication. Rescue casualties where possible and evacuate if necessary. Maintain control of the site. Continually reassess the situation and modify the response accordingly. The first duty is to consider the safety of people in the immediate area, including your own.

Above all. Do not walk into or touch spilled material. Avoid inhalation of fumes, smoke and vapors, even if no dangerous goods are known to be involved. Do not assume that gases or vapors are harmless because of lack of a smell—odorless gases or vapors may be harmful. Use **CAUTION** when handling empty containers because they may still present hazards until they are cleaned and purged of all residues.

Balestrieri employees, upon arrival at the scene, are expected to recognize the presence of dangerous goods, protect themselves and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Generally, the notification sequence and requests for technical information beyond what is available in the Emergency Response Guidebook should occur in the following order:

Organization/Agency. Notify your organization/agency. This will set in motion a series of events based upon the information provided. Actions may range from dispatching additional trained personnel to the scene to activating the local emergency response plan. Ensure that local fire and police have been notified and the DNR Hotline (800-943-0003) has been called.

Emergency Response Telephone Number. Locate and call the telephone number listed on the shipping document. The person answering the phone at the listed emergency response number must be knowledgeable of the materials and mitigation actions to be taken or must have immediate access to a person who has the required knowledge.

National Assistance. Contact the appropriate emergency response agency listed on the inside back cover of the guidebook when the emergency response telephone number is not available from the shipping papers. Upon receipt of a call describing the nature of the incident, the agency will provide immediate advice on handling the early stages of the incident. The agency will also contact the shipper or manufacturer of the material for more detailed information and request on-scene assistance when necessary.

Information. Employee should collect and provide as much of the following information as can safely be obtained to his/her chain-of-command and specialists contacted for technical guidance:

- Employee's name, call back telephone number, FAX number.
- Location and nature of the problem (spill, fire, etc.).
- Name and identification number of material(s) involved.
- Shipper/consignee/point of origin.
- Carrier name, rail car, or truck number
- Container type and size.
- Quantity of material transported/released.
- Local conditions (weather, terrain, proximity to schools, hospitals, waterways, etc.)
- Injuries and exposures.
- Local emergency services that have been notified.

The choice of protective actions for a given situation depends on a number of factors. For some cases, evacuation may be the best option; in others, sheltering in-place may be the best course. Sometimes, these two actions may be used in combination. In any emergency, officials need to quickly give the public instructions. The public will need continuing information and instructions while being evacuated or sheltered in-place.

Proper evaluation of the factors listed below will determine the effectiveness of evacuation or in-place protection. The importance of these factors can vary with emergency conditions. In specific emergencies, other factors may need to be identified and considered as well. This list indicates what kind of information may be needed to make the initial decision:

The Dangerous Goods:

- Degree of health hazard
- Chemical and physical properties
- Amount involved
- Containment/control of spill/release
- Rate of vapor movement

The Population Threatened:

- Location
- Number of people
- Time available to evacuate or shelter in-place
- Ability to control evacuation or shelter in-place
- Building types and availability
- Special institutions or populations, e.g., nursing homes, hospitals, prisons

Weather Conditions:

- Effect on vapor and cloud movement
- Potential for change
- Effect on evacuation or protection in-place

Definitions

Protective Actions are those steps taken to preserve the health and safety of emergency responders and the public during an incident involving spills/releases of dangerous goods. People in the areas involved should be evacuated and/or sheltered in-place inside buildings.

Isolate Hazard Area and Deny Entry means keep everybody away from the area if they are not directly involved in emergency response operations. Unprotected emergency responders should not be allowed to enter the isolation zone. This "isolation" task is done first to establish control over the area of operations. This is the first step for any protective actions that may follow.

Evacuate means move all people from a threatened area to a safer place. To perform an evacuation, there must be enough time for people to be warned, to get ready and to leave an area. If there is enough time, evacuation is the best protective action. Begin evacuating people nearby and those outdoors in direct view of the scene. When additional help arrives, expand the area to be evacuated downwind and crosswind to at least the extent recommended in the guidebook. Even after people move to the distances recommended, they may not be completely safe from harm. They should not be permitted to congregate at such distances. Send evacuees to a definite place, by a specific route, far enough away so they will not have to be moved again if the wind shifts.

Shelter-in-Place means people should seek shelter inside a building and remain inside until the danger passes. **Sheltering-in-place is used when evacuating the public would cause greater risk than staying where they are, or when an evacuation cannot be performed. Direct the people inside to close all doors and windows and to shut off all ventilating, heating and cooling systems.** In-place protection may not be the best option if:

- The vapors are flammable
- If it will take a long time for the gas to clear the area
- If buildings cannot be closed tightly

Vehicles can offer some protection for a short period if the windows are closed and the ventilating systems are shut off. Vehicles are not as effective as buildings for in-place protection.

It is vital to maintain communications with competent persons inside the building so that they are advised about changing conditions. Persons protected-in-place should be warned to stay far from windows because of the danger from glass and projected metal fragments in a fire and/or explosion.

Every dangerous goods incident is different. Each will have special problems and concerns. Action to protect the public must be selected carefully. This section can help with initial decisions on how to protect the public. Officials must continue to gather information and monitor the situation until the threat is removed.

Street Clothing and Work Uniforms. These garments, such as uniforms worn by police and emergency medical services personnel, provide almost no protection from the harmful effects of dangerous goods.

Protective Clothing. Protective clothing includes both respiratory and physical protection. One cannot assign a level of protection to clothing or respiratory devises separately. The following levels were accepted and defined by response organizations such as U.S. Coast Guard, NIOSH, and USEPA:

- Level A: SCBA plus totally encapsulating chemical resistant clothing (TECP), (permeation resistant).
- Level B: SCBA plus hooded chemical resistant clothing (splash suit).
- Level C: Full or half-face respirator plus hooded chemical resistant clothing (splash suit).
- Level D: Coverall with no respiratory protection.

Positive Pressure Self-Contained Breathing Apparatus (SCBA). This apparatus provides a constant, positive pressure flow of air within the face-piece, even if one inhales deeply while doing heavy work. Use apparatus certified by NIOSH and the Department of Labor/Mine Safety and Health Administration in accordance with 42 CFR Part 84. Use it in accordance with the requirements for respiratory protection specified in OSHA 29 CFR 1910.134 (Respiratory Protection) and/or 29 CFR 1910.156 (f) (Fire Brigades Standard). Chemical-cartridge respirators or other filtering masks are not acceptable substitutes for positive pressure self-contained breathing apparatus. Demand-type SCBA does not meet the OSHA 29 CFR 1910.156(f)(1)(i) of the Fire Brigades Standard. If it is suspected that a chemical warfare agent (CW) is involved, the use of NIOSH-certified respirators with CBRN protection are highly recommended.

Chemical Protective Clothing and Equipment. Safe use of this type of protective clothing and equipment requires specific skills developed through training and experience. It is generally not available to or used by first responders. This type of special clothing may protect against one chemical; yet, be readily permeated by chemicals for which it was not designed. Therefore, protective clothing should not be used unless it is compatible with the released material. This type of special clothing offers little or no protection against heat and/or cold.

Structural Firefighters' Protective Clothing (SFPC). This category of clothing, often called turnout or bunker gear, means the protective clothing normally worn by firefighters during structural fire fighting operations. It includes a helmet, coat, pants, boots, gloves and a hood to cover parts of the head not protected by the helmet and face piece. This clothing must be used with full-face-piece positive pressure self-contained breathing apparatus (SCBA).

This protective clothing should, at a minimum, meet the OSHA fire brigades standard (29 CFR 1910.156). Structural firefighters' protective clothing provides limited protection from heat and cold, but may not provide adequate protection from the harmful vapors or liquids that are encountered during dangerous goods incidents.

Each guide in the guidebook includes a statement about the use of SFPC in incidents involving those materials referenced by that guide. Some guides state that SFPC provides limited protection. In those cases, the responder wearing SFPC and SCBA may be able to perform an expedient, that is, quick "in-and-out" operation. However, this type of operation can place the responder at risk of exposure, injury or death. The incident commander makes the decision to perform this operation only if an overriding benefit can be gained (i.e., perform an immediate rescue; turn off a valve to control a leak, etc.).

The coverall-type protective clothing customarily worn to fight fires in forests or wild lands is not SFPC and is not recommended nor referred to elsewhere in the guidebook.

XRF Radiation Safety Program

It is the policy of Balestrieri to provide a safe work place free of recognized hazards that may cause serious physical harm to the employees. The goals of a radiation safety program are:

A) Protecting the public and environment from unnecessary exposure to radiation.
B) Proper training and instruction to workers including:
   a. The ALARA program and personnel radiation monitoring.
   b. Workers knowledge of emergency procedures and radiation detection equipment.
   c. Safely and securely operating the XRF's on site.
   d. Safely and securely transporting XRF's.
   e. Maintenance and leak tests.
C) Inventory and disposal recordkeeping.
D) Self-reporting, corrections and enforcement of the program.
E) Annual audits and inspections.

Radiation Safety Officer

Stephen P Jandrowski had been designated as the Radiation Safety Officer for Balestrieri and will carry out the duties and enforce the conditions of the license including the following:

The Annual Audit

The RSO along with senior management will annually conduct and audit of the XRF safety program, as well as checking, reviewing and correcting any deficiencies. All copies of audits will be retained. The RSO will also conduct periodic internal inspections, including in person observations of worker actions with XRF's during transport and transportation.

Deficiencies Identified in Audit and Corrective Actions Planned

If any deficiencies or oversights are discovered during the year the RSO will investigate, report, summarize and take corrective actions to rectify the issue. The RSO will document the corrective actions and provide any recommendations for improvements.

Organization & Scope of Program

The RSO will ensure that the original conditions and information of the license stays current, or when needed, file for timely amendments including address changes, new ownership (in advance), bankruptcies, and notice of a new and properly trained RSP.

The RSO will review the license to ensure that XRF models match and source quantities have not been exceeded and will ensure that the Sealed Source and Device (SSD) Certificate or Sheet for each type of XRF are on file.

The RSO will check to make sure that manufacturer operation & maintenance manuals are on hand for each type of XRF and that they are used for the manner they were intended.

RSO Responsibilities

The primary responsibilities of the RSO are as follows:

- Stop activities that are considered unsafe.
- Review the license and Sealed Source and Device Registration and manufacturer's recommendations and instructions. Make sure the conditions match up regarding the model/type of XRF number of XRF's allowed, the type of operations licensed for, storage requirements, and maintenance restrictions and schedule.
- Make sure all employees are trained and training certificates are on file.
- Make sure all necessary personnel are using personnel monitoring devices (film badges, TLD's) and records are on file when applicable.
- Make sure all XRF's are locked and secured during storage and transportation.

- Make sure all trained users will have contact information on hand (including on file, in the storage area, and in XRF cases) for proper authorities (RSO, licensing agency, police) in case of accident, damage, fire or theft.
- Investigate all unusual occurrences involving the XRF (accident, damage, theft, oversights), determine the cause, identify corrective actions and implement such actions.
- Make sure XRF transfers and disposals are properly documented.
- Make sure all records are accounted for and maintained.
- Keep the license up-to-date, request renewals and amendments in a timely manner.
- Give advance notice of desire to terminate the license.

Training & Instructions to Workers

Make sure that all employees working with XRF's and preparing them for transport or transporting XRF's are properly trained.

Ensure, per Code of Federal Regulation (CFR) 19.12, that all employees expected to receive an excess of 100 mrem/year occupational dose be given special instructions. Although XRF users typically receive less than this amount it is assumed that they may exceed this limit and therefore subject to these instructions:

- Storage, transfer and uses of XRF's
- Exposure issues and ALARA
- Required safety training
- How to report overexposure concerns
- Workers know how to receive exposure reports
- Workers receive emergency procedures training
- The RSO will conduct interviews with each operator to determine if they are knowledgeable of emergency procedures
- The RSO will observe each XRF user operating the unit in the field
- The RSO will observe each XRF user transporting the unit
- The RSO will observe each XRF user checking the unit in and out of storage
- The RSO will make sure each XRF user demonstrates safe handling and security during operation, transport and storage

XRF Inventory

The RSO will complete an inventory every six months. Balestrieri only has one unit and the requirement for leak testing is also every six months, meeting the leak test requirement would also satisfy the inventory requirement.

Personnel Radiation Protection

The key component to a sound Radiation Protection Program is a solid adherence to ALARA Considerations. The RSO will make sure that ALARA Considerations (time, distance & shielding) are being practiced and incorporated into the Radiation Protection Program.

The calculation formula submitted to us from the Wisconsin Department of Health Services was executed and was determined that exposures were less than 100mrems/year thus dosimetry is not required unless work practices change.

Public Dose

- The RSO will take steps to protect the general public (non-XRF workers) from exposure to radiation.
- The RSO will make sure that XRF units are stored in a manner to keep doses to the public below 100mrem in a year.
- The RSO will make sure that XRF units are stored in a manner that prevents unauthorized use or removal.

Operating & Emergency Procedures

The RSO will develop, implement and maintain Company Operating & Emergency Procedures. Procedures should include these instructions:

- Security during transport and storage
- Keeping exposures ALARA
- Steps to take when XRF unit is damaged
- Emergency contact information

The RSO will make sure the above elements, are part of the procedures.

The RSO will make sure that the XRF in transport case has a current copy of the operating and emergency procedures including the RSO's contact information.

Leak Tests

The RSO will make sure the sealed source on each XRF unit will be leak tested on time (per the time interval stated on the license) and make sure the lead test was performed per the descriptions and requirements of the regulatory agency and the license.

The RSO will make sure all XRF units have a current leak test before being removed from storage.

The RSO will make sure leak test records are kept on file.

The RSO will make sure if any sources are found to be leaking, the unit will be pulled from service and the regulatory agency notified.

Transportation

The RSO will make sure that only undamaged, manufacturer-provided and approved, Type A package XRF cases are used during every transport.

The RSO will make sure the XRF Carrying case has a contents description label stating "Radioactive Materials, excepted Package, Instruments & Articles UN2911"

The RSO will instruct workers that the XRF case will be closed and locked for transport.

The RSO will instruct the workers to have the case secured against movement during transport.

The RSO will instruct the workers to have the XRF concealed or out of view during transport.

The RSO will ensure that any qualified transport incidents are reported to the USDOT.

Unmanned Aircraft Systems(UAS)/Drone Policy

When operating an unmanned aircraft system, Balestrieri will not only comply with the rules and regulations set forth by the FAA but will also use best practices outline in the ASTM F3178 standard.

Site Specific Plans

Nature and Scope of the Site Specific Safety and Health Plan

This guideline is only a summary of basic applicable standards. These guidelines should in no way be considered as a complete substitute for any provisions of the Occupational Safety and Health Act of 1970, or for any standards proclaimed under the act. The CFR should be consulted for a more complete explanation of the specific standards listed.

The plan is not a guarantee that all possible safety hazards have been identified or that all possible circumstances have been addressed. Specific requirements will be revised when new information is received or for on-site conditions. Any deficiencies, errors or omissions should be addressed immediately and corrections made. Any changes necessary to the plan must be documented in writing and attached to all copies of the plan.

It is the responsibility of the Project Manager to brief the workers and supervisors on the project, its potential hazards and the content and recommendations of this plan prior to beginning on site activities. The project manager will also review any or all portions of the plan as necessary during the course of the project to ensure that proper procedures are being followed.

Site Control Measures/Decontamination Procedures

The work area will be restricted to authorized personnel only. Building security and occupants will be notified. Signs will be posted notifying personnel and guests that the work area is restricted to authorized personnel only. Barriers will be erected as necessary.

Containment will be constructed for the removal of ACM and will follow the work practices, engineering controls and hygiene practices established in 29 CFR 1926.1101(e), (g) and(j). No one except workers actively engaged in the removal of ACM will be permitted in the containment areas.

Workers who enter into containment and are exposed to ACM must thoroughly decontaminate before exiting the work area. All equipment, tools or materials used in containment must be either completely decontaminated, or isolated, to prevent exposure to ACM before being removed from the containment.

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Multi-Employer Worksite Safety

Introduction and Definition

On multi-employer worksites more than one employer may be citable for a hazardous condition that violates an OSHA standard. A two-step process must be followed in determining whether more than one employer is to be cited.

Step One: The first step is to determine whether the employer is a creating, exposing, correcting, or controlling employer.

Step Two: If the employer falls into one of these categories, it has obligations with respect to OSHA requirements, and if the employer's actions were sufficient to meet those obligations. The extent of the actions required of employers varies based on which category applies. Note that the extent of the measures that a controlling employer must take to satisfy its duty to exercise reasonable care to prevent and detect violations is less than what is required of an employer with respect to protecting its own employees.

The Creating Employer

The creating employer is the employer that caused a hazardous condition that violates an OSHA standard. Employers must not create violative conditions. An employer that does so is citable even if the only employees exposed are those of other employers at the site. The creating employer must implement measures to prevent the exposure of its own and other employer's employees to hazardous exposures and/or conditions. The creating employer must take effective steps to keep all employees, including those of other employers, away from the hazardous situations.

Example: Employer host operates a factory. It contracts with company S to service machinery. Host fails to cover drums of a chemical despite company S's repeated requests that it do so. This results in airborne levels of the chemical that exceed the permissible exposure limit. Host failed to implement measures to prevent the accumulation of the air contaminant. It could have met its OSHA obligation by implementing the simple engineering control of covering the drums. Having failed to implement a feasible engineering control to meet the PEL, host is citable for the hazard.

The Exposing Employer

If the exposing employer created the violation, it is citable for the violation as a creating employer. If the violation was created by another employer, the exposing employer is citable if it:

- Knew of the hazardous condition or failed to exercise reasonable diligence to discover the condition.
- Failed to take steps consistent with its authority to protect its employees.

The exposing employer has authority to correct the hazard, it must do so. If the exposing employer lacks the authority to correct the hazard, it is citable if it fails to:

- Ask the creating and/or controlling employer to correct the hazard.
- Inform its employees of the hazard.
- Take reasonable alternative protective measures.

Finally, in extreme circumstances (such as imminent danger) the exposing employer is citable for failing to remove its employees from the job to avoid the hazard.

Example: Employer sub S is responsible for inspecting and cleaning a work area in plant P around a large, permanent hole at the end of each day. An OSHA standard requires guardrails. There are no guardrails around the hold, and sub S employees do not use personal fall protection, although it would be feasible to do so. sub S has no authority to install guardrails. However, it did ask employer P, which operates the plant, to install them. P refused to install guardrails. Sub S is an exposing employer because its employees are exposed to the fall hazard.

While Sub s has no authority to install guardrails, it is required to comply with OSHA requirements to the extent feasible. It must take steps to protect its employees and ask the employer that controls the hazard – employer P – to correct it. Although sub S asked for guardrails, since the hazard was not corrected, sub S was responsible for taking reasonable alternative protective steps, such as providing personal fall protection. Because that was not done, sub S is citable for the violation.

The Correcting Employer

A correcting employer is any employer who is engaged in a common undertaking, on the same worksite, as the exposing employer and is responsible for correcting a hazard. The correcting employer must exercise reasonable care in preventing and discovering violations and meet its obligations of correcting the hazard.

Example: Employer C, a carpentry contractor, is hired to erect and maintain guardrails throughout a large, several story project. Work is proceeding on all floors. C inspects all floors in the morning and again in the afternoon each day. It also inspects areas where material is delivered to the perimeter once the material vendor is finished delivering material to that area.

Other subcontractors are required to report damaged/missing guardrails to the general contractor, who forwards those reports to C. C repairs damaged guardrails immediately after finding them and immediately after they are reported. On this project few instances of damaged guardrails have occurred other than where material has been delivered.

Shortly after the afternoon inspection of floor 6, workers moving equipment accidentally damage a guardrail in one area. No one tells C of the damage and C has not seen it. An OSHA inspection occurs at the beginning of the next day, prior to the morning inspection of floor 6. None of C's own employees are exposed to the hazard, but other employees are exposed.

C is a correcting employer since it is responsible for erecting and maintaining fall protection equipment. The steps C implemented to discover and correct damaged guardrails were reasonable in light of the amount of activity and the size of the project. It exercised reasonable care in preventing and discovering violations; it is not citable for the damaged guardrails since it could not reasonably have known of the violation.

The Controlling Employer

The controlling employer is an employer who has general supervisory authority over the worksite, including the power to correct safety and health violations itself or require others to correct them. Control can be established by contract or in the absence of explicit contractual provisions, by the exercise of control in practice.

The controlling employer must exercise reasonable care to prevent and detect violations on the site. The extent of the measures that a controlling employer must implement to satisfy this duty of reasonable care is less than what is required of an employer with respect to protecting its own employees. This means that the controlling employer is not normally required to inspect for hazards as frequently or to have the same level of knowledge of the applicable standards or of trade expertise as the employer it has hired.

Factors that affect how frequently and closely a controlling employer must inspect to meet its standard of reasonable care include:

- The scale of the project.
- The nature and pace of the work, including the frequency with which the number or types of hazards change as the work progresses.
- How much the controlling employer knows both about the safety history and safety practices of the employer it controls and about that employer's level of expertise.
- More frequent inspections are normally needed if the controlling employer knows that the other employer has a history of non-compliance. Greater inspection frequency may also be needed, especially at the beginning of the project, if the controlling employer had never before worked with this other employer and does not know its compliance history.
- Less frequent inspections may be appropriate where the controlling employer sees strong indications that the other employer has implemented effective safety and health efforts. The most important indicator of an effective safety and health effort by the other employer is a consistently high level of compliance. Other indicators include the use of an effective, graduated system of enforcement for non-compliance with safety and health requirements coupled with regular jobsite safety meetings and safety training.

In evaluating whether a controlling employer has exercised reasonable care in preventing and discovery violations, consider questions such as whether the controlling employer:

- Conducted periodic inspections of appropriate frequency.
- Implemented an effective system for promptly correcting hazards.
- Enforced the other employer's compliance with safety and health requirements with an effective, graduated system of enforcement and follow-up inspections.

Types of Controlling Employers

A controlling employer can be by contract. To be a controlling employer, they must be able to prevent or correct a violation or to require another employer to prevent or correct the violation. This can be explicit contract authority, and can take the form of a specific contract right to require another employer to adhere to safety and health requirements and to correct violations the controlling employer discovers.

> **Example: Employer GC contracts with employer P to do painting work. GC has contract authority over employer P. Employer GC has never before worked with employer P, so employer GC conducts frequent inspections of employer P. During a number of these inspections GC finds that P has violated fall protection requirements. It points the violations out to P during each inspection but takes no further actions.**
>
> **GC is a controlling employer since it has general supervisory authority over the site, including a contractual right of control over P. GC took adequate steps to meet its obligation to discover violations. However, it failed to take reasonable steps to require P to correct hazards since it lacked a graduated system of enforcement. A citation to GC for the fall protections violations is appropriate.**

Where there is no explicit contract provision granting the right to control safety or where the contract says the employer does not have such a right, an employer may still be a controlling employer. The ability of an employer to control safety in this circumstance can result from a combination of contractual rights that together, give it broad responsibility at the site involving almost all aspects of the job. Its responsibility is broad enough so that its contractual authority necessarily involves safety. The authority to resolve disputes between subcontractors, set schedules and determine construction sequencing are particularly significant because they are likely to affect safety. (Note: Citations in this circumstance can only be issued after OSHA consults with the Regional Solicitor's office.)

> **Example: Construction manager M is contractually obligated to set schedules and construction sequencing, require subcontractors to meet contract specifications, negotiate with trades, resolve disputes between subcontractors, direct work and make purchasing decisions, which affect safety. However, the contract states that M does not have a right to require compliance with safety and health requirements. Further, subcontractor S asks M to alter the schedule so that S would not have to start work until subcontractor G has completed installing guardrails. M is contractually responsible for deciding whether to approve S's request.**
>
> **Even though its contract states that M does not have authority over safety, the combination of rights actually given in the contract provides broad responsibility over the site and results in the ability of M to direct actions that necessarily affect safety. For example, M's contractual obligation to determine whether to approve S's request to alter the schedule has direct safety implications. M's decision relates directly to whether S's employees will be protected from a fall hazard. M is a controlling employer. If M refused to alter the schedule, it would be citable for the fall hazard violation.**

Architects and Engineers

Architects, engineers and other entities are controlling employers only if the breadth of their involvement in a construction project is sufficient to bring them within the parameters as a contracted controlling employer, and gives them the responsibility of controlling construction and/or safety.

Multiple Roles

A creating, correcting or controlling employer will often also be an exposing employer. Consider whether the employer is an exposing employer before evaluating its status with respect to these other roles. Exposing, creating and controlling employers can also be correcting employers if they are authorized to correct the hazard.

Responsibilities

A controlling employer is one with general supervisory authority over the work site and with the power to correct safety and health violations or to require others to correct safety and health violations.

The controlling employer's reasonable care responsibilities include but are not limited to:

- Create a site-specific safety program.
- Enforce the safety policy for the project site.
- Provide general supervision of project activity and safety.
- Fulfill budget and schedule requirements.
- Exercise authority to correct safety hazards.
- Exercise authority to require other specialty employers to correct safety hazards.
- Conduct and document frequent and regular inspections of subcontractor site-specific work (frequent and regular inspections and/or safety meetings are established by the controlling contractor's knowledge of the subcontractors' level of experience, expertise and knowledge of their safety history and practices.)
- Conduct and document frequent and regular safety meetings with subcontractors.

The creating employer is a subcontractor who causes a hazardous condition that violates an OSHA regulation. This employer is citable even if the employees exposed to the hazard are other subcontractors' employees.

The creating employer's reasonable care responsibilities include but are not limited to:

- Frequent and regular inspections and safety meetings (usually daily) and safety meetings (usually weekly) must be conducted by specialty subcontractors on a consistent and regular basis to protect their employees from safety hazards on the project site.
- Provide an effective system to enforce the prompt correction of hazards, both recognized and foreseeable.
- If the employer does not have the authority to fix a problem, it must inform the controlling contractor/employer of the hazard and take the appropriate steps to keep all employees away from the hazardous condition until it is fixed.

The exposing employer is a subcontractor whose employees are exposed to hazards on the project site. If the exposing employer also created the violation, typically it will be cited as the creating employer. If the violation was created by another employer, the exposing employer will be cited if it neglected to protect its employees. When the exposing employer does not have the authority to correct the hazard, it is citable if it did not take reasonable protective measures for its employees.

The exposing employer's reasonable care responsibilities include but are not limited to:

- Frequent and regular inspections and safety meetings (usually daily) and safety meetings (usually weekly) must be conducted by specialty subcontractors on a consistent and regular basis to protect their employees from safety hazards on the project site.
- Provide an effective system to enforce the prompt correction of hazards, both recognized and foreseeable.
- If the employer does not have the authority to fix a problem, it must inform the controlling contractor/employer of the hazard and take the appropriate steps to keep all employees away from the hazardous condition until it is fixed.

The correcting employer are subcontractors on the same work site and are responsible for correcting a hazard. They are responsible for taking reasonable care measures to prevent and discover violations and to meet their obligations to correct the hazard.

The correcting employer's reasonable care responsibilities include, but are not limited to:

- Frequent and regular inspections and safety meetings (usually daily) and safety meetings (usually weekly) must be conducted by specialty subcontractors on a consistent and regular basis to protect their employees from safety hazards on the project site.
- Provide an effective system to enforce the prompt correction of hazards, both recognized and foreseeable.
- If the employer does not have the authority to fix a problem, it must inform the controlling contractor/employer of the hazard and take the appropriate steps to keep all employees away from the hazardous condition until it is fixed.

The criteria for these categories of employers are without regard to the contractual relationships amongst them. The lines of liability do not necessarily follow subcontract relationships.

Pre-planning

The highest contributing factor to injuries and fatalities for hazards on the job sites is the lack of pre-planning. Pre-planning a project facilitates a well-organized project with adequate safety policies and procedures in place prior to the start of work. Most safety hazards can be eliminated or controlled by thoroughly pre-planning project activities.

Identify your safety duties and responsibilities, develop a site-specific safety plan, conduct a job hazard analysis, provide adequate safety training for each work activity before the project starts, map out project staging and have a practiced rescue plan in place. Contractors are experienced at pre-planning the materials, staff, timing and equipment needed for a project; however, statistics indicating that injuries and fatalities in a construction job site point to the lack of pre-planning for safety.

Pre-planning for reasonable care includes, but is not limited to:

- Pre-plan work site protection with safety, supervisors, foremen and skilled trades.
- Incorporate work site safety protection into contract documents.
- Verify that adequate safety protection training has occurred for all site specific hazard exposures has occurred, along with certificates or written records with the type of training, date and number of hours.
- Develop site-specific safety plans and procedures for all hazard exposures involved.
- Require a safety plan and procedure for each work activity on the work site.
- Verify the safety meetings occur on a frequent and regular basis.
- Verify that all safety equipment is inspected correctly and on a frequent and regular basis.
- Pre-plan how any hazardous conditions will be corrected on the job site.

Legal Issues

When the general contractor directs a subcontractor's employees as its own, it is acting as the subcontractor's safety person. As a result of communicating directly with its subcontractor's employees versus directly with the subcontractor's management (foreman, supervisor, safety representative), the general contractor may assume the additional safety duties of its subcontractor's employees. Also, if the general contractor trains a subcontractor's employees as it would train its own employees (versus an orientation training on site-specific hazards), then the general contractor may assume additional safety duties and liabilities as if these were his own.

It is critical that the general contractor does not involve itself with the individual safety of its subcontractor's employees and is involved with overall project safety only. The general contractor may assume the safety duties and responsibilities as the subcontractor's construction workplace activities. Instead, the general contractor must leave it up to the subcontractor to determine its own means and methods of its specialty trade.

These requirements are also applicable to the project owner, engineers, architects, subcontractors, and other consultants if their actions and direction reflect those of the Controlling Employer. Depending on how controlling their actions are, the potential for them to assume safety duties as their subcontractor's employer is a distinct possibility.

It is important to understand that multi-employer liabilities arise in both regulatory and civil arenas and that any contractor meeting the definition of a creating, exposing, correcting or controlling employer also may be subject to a lawsuit for damages sustained by an injured worker. Almost by definition, the violation of fall protection standards, confined space standards and similar safety rules will give rise to this type of liability.

Notes:

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Bulbs and Ballasts

Introduction

Waste ballasts and lamps will occur in removed or retrofit fluorescent and HID (high intensity discharge) lighting fixtures. Incandescent lighting is also regulated in Wisconsin and many other states. The regulated concern in ballasts is PCB (polychlorinated biphenyls) and DEHP (diethylhexyl phthalate). The regulated concern in fluorescent and HID is mercury and in incandescent is lead.

Before working on the removal of lamps and ballasts from fixtures, make sure the power has been turned off. It is also suggested that power for incandescent be turned off, especially if the socket remains empty.

Lamps

Supplied lamp boxes or lamp fiber bins may be used for the packing of used fluorescent lamps. If you wish, you may use original lamp boxes, making sure the lamp divider inserts have been removed before using for used lamps. When a lamp container is filled, write “used mercury containing lamps” on each box or bin for fluorescent and HID lamps. On incandescent lamps write “used lead containing lamps”. Do not mix long lamps with short lamps. Use four foot containers for 4’ or 3’ lamps, but don’t mix. Use eight foot container or two four foot boxes for eight foot lamps. Use 12’ x 16’x 24’ boxes for Ubend lamps, 2’ lamps or compacts, circular and incandescent. Place counts and identification of content type also on each container. Use care when removing lamps from the fixtures and packing. If lamps are broken they are to e placed in double plastic bags and separately boxed. They are charged per pound and are rather expensive. In the event you encounter Shattershield coated lamps they are to be separately boxed, counted and identified.

Accumulated lamp containers are to be placed as close as possible to where they will be picked-up. Balestrieri subcontracts to companies for disposal. Lamps are processed utilizing specialized lamp processing machines for the safe extraction and containerization of the mercury containing materials. Mercury containing materials are then resorted for final mercury extraction.

Lamps are universal waste and are to be shipped on a Bill of Lading. If a generator requires a Manifest, it may be used.

Ballasts

After the lights have been removed from the fixtures, the cover from the ballast containing compartment must be removed. A spin-tight wrench is used to remove the ballast. The wire may be removed from the ballast, but this is not necessary. The ballasts are to be casually placed in 1 A2/Y1.2/100 or greater normally 55 gallon steel drum with lid and locking ring. When drum is full, put the lid on and securely attach the locking ring with a 15/16 inch wrench or socket. Attach the provided shipping label. Locate the filled drums as close to the pick-up location as possible.

Balestrieri subcontracts for both in state and out of state shipments. Ballast drums may be shipped on a Bill of Lading. Ballasts are considered universal waste in most states and hazardous waste in a few states.

Balestrieri subcontracts with contractors who decommission ballasts with the regulated wastes being placed in unique numbered drums. They are then sent out for incineration at approved sites. Steel and copper is sent for final recycling processing and reuse.

Certificates of recycling or destruction are issued for both lamps and ballasts.

Lamps and Ballasts Information

All lighting fixtures for fluorescent and HID, high intensity discharge (mercury vapor, metal halide, high pressure sodium) require one or more ballasts to operate. Existing fixtures, which do not have lamps in them, will still have one or more ballasts.

The ballast or ballasts will be located inside the fixture, adjacent to it, or in some situations (mainly HID) may be remotely located. This could be as far as 150 feet.

Fluorescent ballasts come in varied sizes and will affect the number of drums needed to accommodate the waste ballasts for recycling/incineration.

- Most F40 – four foot fluorescent fixtures will have one or two ballasts, although as high as four can exist. These ballasts will normally weigh 3.2 pounds to 6.0 pounds each. Using an average of four pounds, you can put a maximum of 180 ballasts per 55 gallon drum. This drum will be approaching 800 pounds total weight.
- Most F96 slimline fixtures – eight foot fixtures with 60 or 75 watt lamps will normally have one ballast, but sometimes more exist. These ballasts will normally weigh 7.5 to 8.5 pounds each. Using 8 pounds average weight, you can expect about 88 per 55 gallon drum. This drum will also be approaching 800 pounds total weight.
- Most F96HO fixtures, eight foot high output, with 95 or 110 watt lamps will normally have one ballast and on an infrequent basis more. These ballasts will normally weight 10 to 12.5 pounds each. You can expect about 64 per casually filled 55 gallon drum. This drum will be approaching 800 pounds total weight.
- Most F96VHO/SHO fixtures, eight foot very high output/super high output, with 185 or 215 watt lamps will normally have one ballast. These ballasts will normally weigh 14 to 20 pounds each. You can expect about 44 per casually filed 55 gallon drum. This drum will be approaching 800 pounds total weight.
- Fixtures, which are two or three feet in length, will have smaller ballasts about 1.5 to 1.8 pounds each. It is very common to have large quantities of these. Some of the areas they may be found is rest rooms and some display cases.

If it is easier, all of the above fluorescent ballasts may be mixed in the same drums as long as the drum is casually filled. It is acceptable to short fill the drums to make them easier to move. This would increase the number of drums needed for a job, as Wisconsin Ballast, Inc. figures on casually filed drums.

Employees may encounter two types of regulated ballasts when working on a job, PCB and DEHP. Both are suspected carcinogens (cancer causing). PCB was used into 1979. DEHP was used in most ballasts from then through 1985, and continued in eight foot and HID fixtures through 1991. When PCB was no longer used in ballasts, they were labeled NO or NON PCB. This did not happen with DEHP and on these it is necessary to watch the date stamped on the back or on the ballast mounting tabs. Most are easy to read being stamped with the month and year. Valmont and GE are more difficult as they use a code. For F40 ballasts anything stamped NA or higher alphabetically should be free of PCB and DEHP, of course even unregulated ballasts may be recycled. For F96, all types, and all types of HID you will need to look for the stamp NG or higher alphabetically to indicate no DEHP and therefore also no PCB. Wisconsin Ballast Inc. would prefer PCB and DEHP kept separate but this is not required.

HID ballasts are the most difficult to get a complete understanding of as there is not much of a fixture standard in the industry. There are four main types of HID fixtures. The groups as shown must be in their own identified drums. If mixed, the highest cost per pound will be charged.

- Those with discrete components (separate but connected, core and coil, capacitor and sometimes an igniter). This is representative of HIDs with discrete components and make up about 70% of the HID you normally encounter. Once in a while you may encounter remotely located ballasts with discrete components. The housing, which contain the discrete components, are to be loaded into 55 gallon drums to the top. These drums will not normally be very heavy, maybe up to 350 pounds. Because of their bulk they use space quickly. You may get five to about fifteen units per drum depending on the HID housings you are packing.

- Ballasts, which are encapsulated or hermetically sealed, may look like a large to giant sized fluorescent ballast. A hermetically sealed (weather resistant) may look like "post line" and "outdoor weatherproof". You must make sure that these are not in any way intentionally packed, as the drums can quickly become very heavy. The "F-can" type, which many shopping malls have in the halls, can quickly exceed 1000 pounds with even minimal intentional packing. Just throw them in the drum.
- There are also smaller encapsulated and hermetically sealed ballasts that may look like "post line" or "outdoor weatherproof" and generally weigh 30 to 60 pounds each. These are the most difficult of all ballasts to recycle/incinerate. It's normally not a problem if you do some intentional packing of these. The drum may get up to 900 pounds. These may be found in some older parking lot lighting or other areas where weather exposure is continuous.

Because of their size, HID ballasts will always require a large number of drums for the quantity being removed.

- From time to time you may run across jobs where you have capacitors to dispose of. Keep PCB capacitors and DEHP capacitors in their own identified drums. A casually filled drum will weigh about 525 pounds.

Notes:

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Confined Space

Purpose

This program establishes minimum procedures to be used for classifying confined spaces and for safe entry into those spaces.

Scope

This program applies to all of our company employees, contractors and vendors engaged in construction activities on company property, and all other individuals who are visiting or have business with our company. This program does not apply to the following:

- Construction work regulated by §1926 Subpart P—Excavations;
- Construction work regulated by §1926 Subpart S—Underground Construction, Caissons, Cofferdams and Compressed Air; and
- Construction work regulated by §1926 Subpart Y—Diving.

Responsibilities

Management is responsible for the development and review of this program on an annual basis or as when necessary updates are required. Management is also responsible for appropriate employee training.

- Management and supervisors are responsible for the enforcement of this program.
- Employees will comply with all procedures outlined in this program.
- Contractors and vendors will comply with all procedures outlined in this program.

Definitions

Acceptable entry conditions: Conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter and work within the space.

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrant(s) and who performs all attendant duties assigned in our program.

Authorized entrant: An employee who is authorized by the entry supervisor to enter a permit space.

Blanking or binding: The absolute closure of a pipe, line or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate.

Competent person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt, corrective measures to eliminate them.

Confined space: A space that:

- Is large enough and configured so that an employee can physically enter and perform assigned work;
- Has limited or restricted means of entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults and pits are spaces that may have limited means of entry); and
- Is not designed for human occupancy.

Contractor: A non-company employee being paid to perform work at our facility.

Controlling contractor: The employer that has overall responsibility for construction at the worksite. A controlling contractor that owns or manages the property is both a controlling employer and a host employer.
Engulfment: The surrounding and effective capture of a person by a liquid or finely divided solid substance that can be drawn into a permit space and can cause death by filling or plugging the respiratory system, or that can exert enough force on the body to cause death or serious bodily injury.

Entry employer: Any employer that decides whether its employees will enter a permit space. An employer cannot avoid the duties of this standard merely by refusing to decide whether its employees will enter a permit space. Note: OSHA will consider the failure to decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.

Entry permit: The written or printed document that is provided by our facility to allow and control entry into a permit space. The entry permit will contain certain information specified in this written program.

Entry supervisor: The "qualified" person (e.g., an employer, foreman or crew chief) responsible for determining whether entry conditions are acceptable at a permit space where entry is planned, authorizing entry and overseeing entry operations, and terminating entry as required. The entry supervisor can also serve as an entrant or attendant as long as that person is trained and equipped as required by this standard for each role he or she fills. The duties of the entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazardous atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of abilities to self-rescue (escape unaided from a permit space),injury or acute illness from one or more of the following:

- Flammable gas, vapor or mist in excess of 10 percent of the lower flammable level (LFL);
- Airborne combustible dust at a concentration that meets or exceeds its LFL (can be approximated where the dust obscures vision at a distance of 5 feet or less);
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in 29 CFR 1926 Subpart D, Occupational Health and Environmental Control or in Subpart Z, Toxic and Hazardous Substances; or
- Any other atmospheric condition that is "immediately dangerous to life or health" (IDLH).

Hot work: An operation capable of providing a source of ignition (for example, riveting, welding, cutting, burning and heating).

Immediately dangerous to life or health (IDLH): Any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects. Some materials—hydrogen fluoride gas and cadmium vapor, for example—may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12–72 hours after exposure. The victim may "feel normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Inerting: The process of displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. This procedure produces an IDLH oxygen-deficient atmosphere.

Isolate or isolation: The process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

Limited or restricted means for entry or exit: A condition that has the potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Line breaking: The intentional opening of a pipe, line or duct that is or has been carrying flammable, corrosive or toxic material, or an inert gas or any fluid at a volume, pressure or temperature capable of causing injury.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower flammable limit (LFL) or lower explosive limit means the minimum concentration of a substance in the air that is needed for an ignition source to cause a flame or explosion.

Non-permit-required confined space: A space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm.

Oxygen-deficient atmosphere: An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen-enriched atmosphere: An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space: A confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
- Contains any other recognized serious safety or health hazard.

Prohibited condition: Any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and the employer has provided the appropriate PPE to each employee.

Qualified person: An individual who, by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work or the project.

Representative permit space: A mock-up of a confined space that has entrance openings that are similar to, and of similar size, configuration and accessibility to, the permit space that authorized entrants enter.

Retrieval system: Equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from a confined space.

Tagout: Means the placing of a tagout device on a circuit or equipment that has been de-energized, in accordance with:

- An established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and
- Ensuring that:
    - Tagout provides equivalent protection to lockout; or
    - That lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe, stored (residual) energy.

Vendor: A non-company employee being paid to perform a service in our facility.

Ventilate or ventilation: Controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of the Safety and Health Regulations for Construction (29 CFR 1926.57).

Procedures

Space Evaluation

A qualified person will identify all permit-required confined spaces in our facility (see Appendix A). We will continue to evaluate all new equipment and process changes to ensure that no additional permit-required spaces are created.

Space Marking

All permit-required confined spaces will be conspicuously marked with a warning sign at each potential entry point. The sign will indicate “DANGER: PERMIT–REQUIRED CONFINED SPACE, DO NOT ENTER” or use other similar language.

Written Program Availability

We will maintain and update this written program. In addition to any copy received during training, employees and their representatives can request access to this program for review at any time and can receive a copy from requesting through Management.

Non-permit-required Confined Spaces

This program does not regulate entry into confined spaces that do not require a permit. However, employees are always required to evaluate the potential hazards of all jobs prior to beginning work. Employees should discuss with their supervisors or program administration any questions or concerns that arise during an evaluation.

Permit-required Confined Space Entry

Preparation of the Space

An entry supervisor will be assigned to complete the permit (see Appendix B)

The following steps will be completed and checked off as applicable on the permit:

- All connecting lines, ducts and pipes connected to chemical, gas and utility sources will be broken and capped or blanked;
- Heating devices (e.g. jackets, coils, mantels, etc.) will be rendered safe either through line breaking/blanking or electrical lockout/tagout;
- All mechanical, hydraulic and electrical hazards (e.g. agitators, machine drives, electrical lines, etc.) will be controlled as required by lockout/tagout standards;
- The space will be rinsed and/or dried if there is a buildup of hazardous or slippery material on the walls of the space;
- The space will be cooled down to a temperature of 110 degrees Fahrenheit or lower;
- Safe access to the space will be provided;
- Any open entrances will be appropriately blocked to prevent accidental entry;
- Adequate lighting will be provided either through low voltage lighting or through 110 Volt plugged into a Ground Fault Circuit Interrupter (GFCI);
- The space will be metered, in the order listed, to determine concentration levels of oxygen, flammable substances, combustible dust, toxic and other atmospheric conditions that are immediately dangerous to life or health. For vertical entries, the retrieval system will be set up at the entry point.

Permit Completion

The permit will be completed by the entry supervisor (See Appendix B).

- All information requested on the permit will completed by the entry supervisor and not applicable (NA) items will also be accounted for.
- The time of permit issuance will always be written in. Permits are valid for up to eight hours. If the job runs past eight hours, a new permit will be issued.
- Expired permits will be returned to the program administrator.

Personnel Preparation

The entry employer will ensure that workers performing tasks outside the space do not introduce hazards into a confined space. This includes coordinating with contractors and any other employers that may work around the permit space.

The company will assign an entrant(s) and attendant(s) for confined space work. Entrants and attendants must review their respective duties and responsibilities. All personnel involved with the entry and their representative can observe all aspects of the preparation.

Proper PPE will be selected and obtained for the entrant. The rescue service team and a stand-by team will also have access to an adequate supply of the required PPE.

Communication methods will be selected based on the size, location and characteristics of the space.

The entry supervisor will brief the entrant(s) and attendant(s) on all aspects of the job.

At any time, the entry supervisor, the entrant or the attendant can cancel the permit and cause the entry to be either postponed or stopped due to a safety concern.

Entry

All required equipment for entry, including communication equipment, lighting, access equipment, safety and rescue equipment, as well as the tools needed to accomplish the job, will be available at the entrance.

Continuous space atmosphere and non-isolated engulfment monitoring will be established either by the attendant or by the entrant.

The attendant will stay in the immediate area of the entrance to the space, and he or she will stay in contact with the entrant until the entrant exits the confined space.

The entry supervisor will formally approve the entry to begin. At any time during the job, the entry supervisor, entrant or the attendant can cancel the permit and cause the entry to be either postponed or stopped due to safety concerns.

The attendant will document meter readings at intervals decided by the entry supervisor. Intervals cannot be longer than one hour. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

The attendant will immediately inform the entrant of any exterior condition that could affect the entrant's safety (e.g. fire alarm, severe weather, etc.).

An entry permit may be suspended or cancelled and the space reassessed before allowing reentry when a condition that is not allowed under the entry permit arises in or near the permit space. The condition in question must be temporary and must not change the configuration of the space or create any new hazards in it.

Entry Completion

The entry permit must be closed out by listing the time of exit and any other pertinent information.

Barriers to entry must be replaced.

All broken, capped or blanked lines, ducts and pipes connected to chemical, gas and utility sources will be re-attached or reconnected.

Lockouts/tagouts will be released.

Disconnected hydraulic, mechanical and electrical equipment will be reattached.

Operating personnel for the space will be notified that it can be returned to production (if applicable).

All safety and entry equipment will be cleaned and returned to storage locations.

The cancelled permit will be returned to the program administrator.

Duties of Personnel

Entry Supervisor

The entry supervisor will:

Know and understand the hazards that may be faced during entry, including information on the signs or symptoms and consequences of the exposure.

Verify that:

- Appropriate notations have been made on the permit;

- All tests specified by the permit have been conducted; and
- All procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

Terminate the entry and cancel the permit when reasons for entering the space have been completed or when an unacceptable condition within the space or outside the space is detected.

Verify that rescue services are available and that the means of calling the rescue service are operational. The entry supervisor will ensure that the attendant knows the method for summoning help if rescue is required.

Remove unauthorized individuals who enter or attempt to enter the permit space during entry operations.

Ensure that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained whenever responsibility for a permit-space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space.

Entrant

All entrants must:

- Know how to identify the hazards they may be exposed to during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Know how to use any equipment that is provided to them for their protection or their work.
- Be familiar with the means and methods of communication so that the attendant can properly monitor their work and so the attendant can deliver evacuation warnings.
- Alert the attendant whenever they recognize warning signs or symptoms of exposure to a dangerous situation or whenever they detect a condition that would warrant immediate evacuation.

Exit from the permit space as quickly as possible whenever:

- An order to evacuate is given by the attendant or the entry supervisor;
- The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
- The entrant detects a prohibited condition; or
- An evacuation alarm is activated.

Attendant

All attendants will:

- Know the hazards that may be faced during entry or while in the space, including information on the mode, signs or symptoms, and consequences of the exposure to suspected hazards.
- Be aware of possible behavioral effects of hazard exposure in authorized entrants.
- Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants is precise at all times.
- Remain outside the permit space during entry operations until all entrants exit and the operation is closed or they are relieved by other authorized attendants. Note: When the employer's permit entry program allows attendant entry for rescue, attendants may enter a permit space to attempt a rescue if they have been trained and equipped for rescue operations.
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space when conditions warrant an immediate evacuation.
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space.
- Order authorized entrants to evacuate the permit space immediately if:
    - The attendant detects a hazardous condition;
    - The attendant detects a change in the behavior of any authorized entrant which would suggest an exposure to a hazard;
    - The attendant detects a situation outside the space that could endanger the authorized entrants; or
    - The attendant cannot effectively and safely perform all the duties required as outlined in this policy;

- Summon rescue and other emergency services if the attendant determines that authorized entrants may need assistance to escape from permit-space hazards. Employers who rely on local emergency services will arrange for responders to give the employer advance notice if they will be unable to respond for a period of time.
- Do the following when unauthorized persons approach or enter a permit space while entry is underway:
  - Warn unauthorized persons that they must stay away from the permit space;
  - Advise the unauthorized persons that they must exit immediately if they have entered the permit space; or
  - Inform the authorized entrants and the entry supervisor.
- Perform non-entry rescue (rescue attempts that do not cause the attendant to break the plane of the entry to the space) when it is determined a rescue of entrants is required.

Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Rescue Service

Our facility has made arrangements with host facility or general contractor to provide entry rescue service.

We will meet with the rescue service and review the following:

Our list of Permit-required Confined Spaces;

The hazards of the spaces;

Procedures for entry;

Equipment available on-site;

Non-entry rescue equipment such as tripod/winch and related safety equipment; and

Our training program.

Contractors

Any contractor who is engaged in a permit-required confined space entry must, at a minimum, follow this procedure. Whenever a contractor is involved in a permit-required confined space entry, a written plan for the entry will be submitted to the program administrator before performing scheduled work. The program administrator, or a designated employee who has been trained as an entry supervisor, will approve the contractor's written plans.

Training

Training will be provided for all attendants, entrants or entry supervisors at the following times:

Before the employee is assigned duties relating to permit-required confined space entry;

Before the employee's assigned duties change;

Whenever there is a change in operations that presents a hazard that the employee has not been trained on previously; or

Whenever there is an indication that the procedure is not being followed safely and/or when there are indications that employee practices or knowledge do not meet the requirements.

Training will be provided in a language and vocabulary that the employee can understand. All training will be certified in writing with the employee's name, the signature or initials of the trainer, and the date of training, in addition to an outline of materials presented. The certification will be available for inspection by employees and their authorized representatives.

Alternate Procedures

Under certain circumstances, OSHA's Confined Spaces in Construction Standard allows employers to adopt procedures for work in confined spaces that are different than those explained in this program. An overview of these procedures can be found in Appendix C.

Reclassification of Permit-required Spaces

Permit-required confined spaces can be reclassified as non-permit-required spaces as described below:

If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, then the permit space may be reclassified as a non-permit-required space for as long as the non-atmospheric hazards are eliminated.

The program administrator, using properly calibrated direct-reading instrumentation, will test for oxygen content, flammable gases and vapors, and potential toxic air contaminants. Readings will be taken in the order listed in this paragraph. Acceptable readings include:

Oxygen content: between 19.5 and 23.5 percent;

Flammable gases/vapors: below 10 percent of the lower flammable limit; and

Toxic air contaminants: levels below any air conditions defined as a "hazardous atmosphere" by this policy.

Testing will be done from the exterior of the entrance to the space. At no time will any portion of an employee's body break the plane of the entrance to the space to conduct atmospheric testing. If entry into the space is required to conduct testing or eliminate hazards, entry will be done in accordance with permit-space entry procedures outlined in this policy.

If, after testing is complete, it is determined there are no atmospheric hazards or any other hazards that could potentially cause injury or harm, the space can be reclassified as a non-permit-required space and eliminated from the permit-space entry procedures. The atmosphere will be monitored continuously during the entry. This reclassification may remain in force as long as atmospheric hazards are not present.

Revision History Record:

Revision Number	Section	Revised By	Description
0	NA	NA	Original document.

Appendix A

PERMIT-REQUIRED CONFINED SPACE INVENTORY

Permit-required Confined Space Inventory

Space	Location	Hazard

CONFINED SPACE ENTRY PERMIT

Date and time issued: _____ Expiration date and time: _____

Job site/ Space I.D.: _____ Job supervisor: _____

Work to be performed: _____

Entrant has received training ( ) Yes ( ) No

Attendant has received training ( ) Yes ( ) No

Supervisor has received training ( ) Yes ( ) No

Attendant personnel: _____

_____

_____

Atmospheric Checks (Testing Results)

Oxygen level: _____	**Oxygen levels are safe**—they are between 19.5 and 23.5 percent.	( ) Yes	( ) No
Flammable gas, vapor or mist level: _____	**Flammable gas, vapor or mist levels are safe**—they are not over 10 percent of LFL.	( ) Yes	( ) No
Airborne combustible dust level: _____	**Airborne combustible dust levels are safe**—they do not meet or exceed LFL.*	( ) Yes	( ) No
Other toxic and hazardous substance level: _____	**Other toxic and hazardous substance levels are safe**—they do not exceed PEL.	( ) Yes	( ) No
	Other atmospheric conditions are safe—there is no other atmospheric condition that is immediately dangerous to life or health.	( ) Yes	( ) No

If "No", describe: _____

_____

_____

Tester's signature _____ Date and time of testing _____

* Concentration can be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

Space Preparation (Blanking, Lockout, Tagout, etc.)

Hazard	Preparation/Isolation	Date Completed

Ventilation

Mechanical	( )	N/A	( )	Yes	( ) No
Natural ventilation only	( )	N/A	( )	Yes	( ) No

Means of detecting an increase in atmospheric hazard levels if the ventilation system malfunctions:

Atmospheric Checks AFTER Isolation and Ventilation (Testing Results)

Oxygen level: _____	**Oxygen levels are safe**—they are between 19.5 and 23.5 percent.	( ) Yes	( ) No
Flammable gas, vapor or mist level: _____	**Flammable gas, vapor or mist levels are safe**—they are not over 10 percent of LFL.	( ) Yes	( ) No
Airborne combustible dust level: _____	**Airborne combustible dust levels are safe**—they do not meet or exceed LFL.*	( ) Yes	( ) No
Other toxic and hazardous substance level: _____	**Other toxic and hazardous substance levels are safe**—they do not exceed PEL.	( ) Yes	( ) No
	Other atmospheric conditions are safe—there is no other atmospheric condition that is immediately dangerous to life or health.	( ) Yes	( ) No

If "No", describe:

Tester's signature _____ Date and time of testing _____

* Concentration can be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

Communication Procedures

Rescue Team Contact Procedure

Procedure reviewed by: Review date:

Equipment Check (Equipment is Available and Functional)

Direct reading, calibrated meter	( )	N/A	( )	Yes	( )	No
Ventilation equipment	( )	N/A	( )	Yes	( )	No
Safety harness and lifelines for entry personnel	( )	N/A	( )	Yes	( )	No
Retrieval device	( )	N/A	( )	Yes	( )	No
Communications	( )	N/A	( )	Yes	( )	No
Access equipment	( )	N/A	( )	Yes	( )	No
Protective clothing	( )	N/A	( )	Yes	( )	No
All electric equipment listed for area classification	( )	N/A	( )	Yes	( )	No

Periodic Atmospheric Tests (by Substance Type)

Oxygen	_____	%	Test time: _____	Oxygen	_____	%	Test time: _____
Oxygen	_____	%	Test time: _____	Oxygen	_____	%	Test time: _____
Flammable	_____	%	Test time: _____	Flammable	_____	%	Test time: _____
Flammable	_____	%	Test time: _____	Flammable	_____	%	Test time: _____
Combustible	_____	%	Test time: _____	Combustible	_____	%	Test time: _____
Combustible	_____	%	Test time: _____	Combustible	_____	%	Test time: _____
Toxic	_____	%	Test time: _____	Toxic	_____	%	Test time: _____
Toxic	_____	%	Test time: _____	Toxic	_____	%	Test time: _____

Certification

We have reviewed the work authorized by this permit and the information contained herein. Affected employees, entrants, attendants and supervisors have received and understand written instructions and safety procedures. Entry cannot be approved if any items are marked in the "No" column. This permit is valid ***only if*** all appropriate items are completed.

Permit prepared by: (Supervisor) _____

All entry procedures have been followed: _____

Entry supervisor: _____ Date: _____

Entrant: _____ Date: _____

Attendant: _____ Date: _____

Appendix B

ENTRY PERMIT

THIS PERMIT CAN BE CANCELLED AT ANY TIME BY THE ENTRY SUPERVISOR, THE ENTRANT OR THE ATTENDANT IN THE EVENT OF A SAFETY CONCERN.

This permit is to be kept at the job site. Return the expired permit to the program administrator at the conclusion of the job

Appendix C

ALTERNATE PROCEDURES

ALTERNATE PROCEDURE ELIGIBILITY

Under certain circumstances, OSHA's Confined Spaces in Construction Standard allows employers to adopt procedures for work in confined spaces that are different than those explained in this program. An overview of these procedures can be found in Appendix C. Alternate procedures are allowed only if all of the following conditions are met:

1. The employer can demonstrate that all physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;
2. The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain that the permit space is safe for entry, and, in the event the ventilation system stops working, entrants can exit the space safely;
3. The employer develops monitoring and inspection data that supports the demonstrations required above;
4. If an initial entry of the permit space is necessary to obtain the data required above, the entry is performed in compliance with this program;
5. The employer documents the determinations and supporting data required above and this information is made available to each employee (or to that employee's authorized representative) who enters the permit space under the terms of the alternate procedure standard; and
6. Entry into the permit space under the terms of the alternate procedure standard is performed in accordance with the requirements of the alternate procedure standard.

ALTERNATE PROCEDURE IMPLEMENTATION

Employers that opt to implement an alternate procedure for work in confined spaces in construction must meet the eligibility criteria mentioned above and:

- Before a cover is removed, eliminate any condition that makes it unsafe to remove an entrance cover;
- Guard the space by placing a railing immediately next to the opening when entrance covers are removed. Another temporary barrier may be used if the barrier prevents an accidental fall through the opening and protects each employee working in the space by preventing foreign objects from entering the space;
- Test the internal atmosphere for oxygen content, flammable gases, flammable vapors and potential toxic air contaminants (in that order) before an employee enters the space. Testing must be done with a calibrated direct-reading instrument. Employers must give any employee who enters the space (or the employee's representative) the opportunity to observe the pre-entry testing previously mentioned;
- Never permitting a hazardous atmosphere within the space whenever any employee is inside it;
- Use continuous forced air ventilation. The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space. Forced air ventilation must be used to eliminate any hazardous atmosphere before an employee enters the space. In addition, forced air ventilation must be directed to ventilate the immediate areas where an employee is or will be present within the space and must continue until all employees have left the space.
- Monitor the atmosphere within the space, unless the entry employer can demonstrate that either there is no commercial equipment available for continuous monitoring or that periodic monitoring is sufficient;
    - If continuous monitoring is used, the employer must ensure that the monitoring equipment has either an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape;
    - If continuous monitoring is not used, periodic monitoring is required. All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Employers must allow any employee who enters the space (or the employee's representative) the opportunity to observe the pre-entry testing previously mentioned;
- If a hazard is detected during entry, employers must:

  - Ensure that each employee leaves the space immediately;
  - Evaluate the space to determine how the hazard developed; and
  - Implement measures to protect employees from the hazard before any subsequent entry takes place;
- Provide employees with a safe method of entering and exiting the space. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer, in writing, prior to use; and
- Verify that the space is safe for entry and that the pre-entry measures required by law have been taken, through a written certification that contains the date, the location of the space and the signature of the person providing the certification. The certification must be made before entry and must be made available to each employee entering the space or to that employee's authorized representative.

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Torching and Welding

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Torching and Welding Procedures

Hot work using acetylene torches or welding equipment involve the generation of high heat, sparks or molten metal as possible ignition sources, noxious or toxic fumes and high intensity ultra-violet light radiation. The presence of flammable or combustible materials increases the risk of fire. It is important to keep the work area free of all flammable or combustible materials, except those necessary for the job. Welding blankets should be used to cover potential combustible materials. Fire extinguishers must be on hand. See the fire prevention and protection and hot work sections of this plan for details.

If the history of the building is such that it is assumed that there is the possibility of high concentrations of lint, soot or other dusts that may be combustible. If such particulate matter is present in the air in adequate concentrations, it represents a significant flash fire or explosion hazard. Explosive concentrations of particulate matter are not easily detectable with conventional flammability meters. These meters are designed to detect gases and vapors, not dusts or lint. Generation of dust must be controlled.

Cutting or welding on the metal shaft may generate noxious or toxic fumes or vapors. The effects of exposure to these fumes or vapors may be immediate or may be delayed. If the coating materials contain certain heavy metals such as cadmium, the effect can even be fatal. Exhausting the fumes outside and the use of a local exhaust system is very important in controlling these possible hazards. If at all possible, the coating should be removed through mechanical means such as grinding or wire brushing. These methods are less likely to generate hazardous atmospheres. Respiratory protection is recommended. High efficiency particulate cartridges (HEPA) on a tight-fitting, half-face air purifying respirators are the minimal acceptable level of respiratory protection.

Ultra-violet light can be irritating and damaging to the human eye. Eye protection for torching and welding is essential. Torching operations require a minimum of a number five (5) shade in the goggles or mask. Welding operations require a number fourteen (14) shade in a standard welding shield.

Sparks can cause severe skin burns. Torch operators or welders must wear flame-retardant garments, with long sleeves and long pant legs. The person actually doing the cutting or welding should wear leather welding jackets and gloves.

Fire Prevention and Protection Plan/Hot Work Permits and Procedures

Balestrieri will maintain fire protection and prevention equipment on the job site at all times while work is in progress.

- Fire-fighting equipment will be conspicuously located and maintained at all times.
- Fire safety/hazard recognition and correction will be part of the daily safety inspection. Prior to initiating any hot work, the work area will be carefully re-inspected for fire safety risks or potential hazards.
- Fire-fighting equipment will be selected according to the hazards anticipated and in accordance with 29 CFR 1926 Subpart L.
- A fire alarm system for notifying on-site personnel, hotel management and guests will be established. A method for notifying the local fire department will also be established.
- All on-site personnel will be trained in the use of the on-site alarm system, emergency procedures, evacuation routes, fire safety and use of portable fire extinguishers.
- Every effort will be made to prevent fires or conditions which contribute to fire development or ignition.
- All electrical equipment, wiring, etc., will be in good working order, well maintained, used and installed in accordance with 29 CFR 1926 Subpart K.

- Smoking or open ignition sources will be prohibited in locations, which constitute a fire hazard. This shall include all containment areas, staging areas and areas designated by the hotel as "No Smoking" areas.
- Equipment used in hazardous locations will be intrinsically safe and approved for use with flammable gases or vapors.
- Flammable or combustible materials will be stored in a secure, well-ventilated protected area and segregated or separated from oxidizers, corrosives or other incompatible materials.
- Storage of flammable or combustible liquids must comply with the procedures outlined in 29 CFR 1926.152. This includes proper labeling of containers, use of storage cabinets for small containers, storage only in designated areas and away from aisles, stair an passages, following bonding and grounding procedure when filling containers and using only approved containers.
- Gas cylinders used for cutting or welding must be properly secured in an upright position at all times.

Cutting and welding operations must follow these guidelines:

- Obtain a hot work permit from the work supervisor. The permit must specify:
    - The type of hot working being performed;
    - The location, date and estimated time of the work activities;
    - Fire protection measures/equipment on-site;
    - Names of persons performing the work;
    - Names of the fire watch personnel.
- A checklist covering inspections of the work area and fire protection equipment, removal of flammable or combustible materials, the methods for shielding flammable or combustible materials which cannot be removed and the type of alarm and emergency notification equipment and procedures available.
- Specify the type of work to be performed, where and when it will be performed and approximately how long it will last.
- The work area must be cleared of all unnecessary combustible or flammable materials. Wastes or debris should be removed from the area. Any materials, which cannot be removed, must be covered or shielded from possible ignition sources. CAUTION: The chase surrounding the shaft could have significant amounts of soot or lint dust, which is combustible. The chase must be protected from stray sparks or molten metal.
- A fire watch must be posted with adequate fire extinguishers to control or extinguish any fire that may start. If an extinguisher is used to extinguish a fire, it must be recharged or replaced before resuming hot work.
- If the potential for a flammable atmosphere may exit, monitoring with an explosimeter will be required prior to and during the hot work.
- Where the work is done in a confined space, confined entry procedures will also apply.
- Permits are only valid for a specified period of time. No "blanket" permits covering multiple shifts or days are allowed.

Personal Protective Equipment

Personal protective equipment will be selected in accordance with the company's personal protective equipment plan and respiratory protection plan in accordance with 29 CFR 1910.132and 1910.134/ 1926.1l01(h) respectively. Equipment will be selected according to the hazards present and using the guidelines established by OSHA.

Respiratory protection for welding and cutting operations will include a local exhaust for venting hazardous gases, vapors and fumes. In addition, the worker shall wear a tight fitting air-purifying respirator with HEPA filters. For cutting and welding, flame retardant garments shall be worn with a welding jacket leather or Nomex) and suitable eye protection (# 5 shade for cutting, #l4 shade for welding).

Respiratory protection for asbestos work will be selected according to monitoring results and table 1 in 29CFR 1926.1101(h). Disposable garments such as non-woven synthetics are appropriate for asbestos abatement. These garments should be discarded as asbestos waste during the decontamination process.

Air Monitoring

During torch cutting and welding operations, a combustible/flammable gas meter will check the atmosphere prior to starting work and continuously monitor the atmosphere during the cutting or welding.

Notes:

Demolition and Cleanup

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Demolition and Cleanup

Balestrieri takes seriously the importance of proper preparatory operations for all demolition jobs in order to adequately protect the health and safety of their employees and the public. This preparation includes the overall planning of the job, the methods to be used, the equipment necessary to do the job, inspection of personal protective equipment to be used on the job, and the measures to be taken to perform the work safely.

Demolition work involves many of the same hazards associated with construction work. However, demolition also poses additional hazards due to unknown factors such as deviations from the structure's original design, materials hidden within structural members, and unknown strengths or weaknesses of damaged materials. Employees of Balestrieri must be aware of these types of hazards and the safety precautions available to control these hazards.

Preliminary Tasks

A survey is made by the owner for determination of asbestos or other hazardous materials and provided to Balestrieri prior to consideration of any demolition project.

A written engineering survey must be performed on each structure being considered for demolition to determine the condition of the framing, floors and walls and to assess the possibility of an unplanned collapse of any portion of the structure is to be provided to Balestrieri by the owner. Steps must be taken to brace or shore the walls and floors of structures which have been damaged and which employees must enter. Inspection and maintenance of all stairs, passageways and ladders must take place and all stairways must be properly illuminated.

Notification must be made to utility companies by the owner, and all electric, gas, water, steam, sewer and other service lines outside the building to have these lines shut off and/or disconnected. The owner will then inform Balestrieri when this has been accomplished.

Determination must be made by the owner as to any hazardous chemicals, gases, explosives and flammable materials which have been used in any pipes, tanks or other equipment on the property. The owner will provide Balestrieri with the results of this determination. Steps must then be taken to purge the hazardous chemicals, gases, explosives or flammable materials by the owner before Balestrieri begins work on the project.

Before work can begin, wall openings must be guarded to a height of 42 inches. Floor openings are to be covered and secured with material able to withstand the loads likely to be imposed. Debris to be dropped through holes in the floor without the use of chutes, must be completely enclosed with barricades at 42 and 21 inches high and toe boards installed if needed. Barricades need to be 15 feet from the projected edge of the opening above. Floor openings used for material disposal must not be more than 25% of the total floor area. Use enclosed chutes with gates on the discharge end to drop material to the ground. Design and construct chutes that will withstand the loads likely to be imposed without failing.

Post signs at each level of structures, warning of the hazard of falling materials. Protect entrances to multi-story structures with sidewalk sheds or canopies for a minimum of 8 feet. Canopies must be at least 1 feet wider than the structure entrance and be able to hold a load of 150 lbs/sq. ft. Storage of material and debris must not exceed the allowable floor load.

Removing Walls and Masonry Sections

Demolition of exterior walls and floors must begin at the top of the structure and proceed downward. Masonry walls must not be permitted to fall on the floors of a building in masses that would exceed the safe carrying capacities of the floors. No wall section, one story in height or higher, shall be permitted to stand alone without lateral bracing, unless such a wall was originally designed and constructed to stand without such lateral support, and is safe enough to be self-supporting. All walls must be left in a stable condition at the end of each work shift. Employees shall not work on the top of a wall when weather conditions create a hazard.

Structural or load-supporting members on any floor must not be cut or removed until all stories above such a floor have been removed. In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Walkways or ladders must be provided to enable workers to safely reach or leave any scaffold or wall. Walls, which serve as retaining walls to support earth or adjoining structures, must not be demolished until the supporting earth has been properly braced or until adjoining structures have been properly underpinned. Walls, which will serve as retaining walls against which debris will be piled, must not be used unless they are capable of supporting the imposed load. Dismantle steel construction column length by column length and tier by tier.

Mechanical Demolition

No workers shall be permitted in any area when using a crane's headache ball or clamp shell to remove debris. Only those workers necessary to perform such operations must be permitted in this work area at any time. The weight of the demolition ball must not exceed 50 percent of the crane's rated load. The crane boom and loadline must be as short as possible. The ball must be attached to the loadline with a swivel-type connection to prevent twisting of the loadline and it must be attached by positive means in such a manner that the weight cannot become accidentally disconnected.

When pulling over walls or portions thereof, all steel members affected must have previously been cut free. All roof cornices or other such ornamental stonework must be removed prior to pulling walls over. During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, walls or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing or other effective means.

Notes:

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Excavation Work

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Excavation Work

Construction workers make up only six percent of the total workforce, but they are involved in more than 20 percent of all work-related fatalities. Trenching accidents directly related to excavation work account for almost 200 deaths annually. Construction workers are buried, and they die from suffocation. It is almost impossible to escape once a cave-in occurs because soil weighs about 100 pounds per square foot.

Investigations indicate that improper planning, failure to recognize potential safety problems, and/or the lack of a formal excavation plan is the primary accident cause. Unsafe placement of spoil pile, operating equipment too close to the edge of a trench, improper shoring, failure to provide safe access and egress to the work area and lack of adequate emergency rescue equipment are major contributing factors. In many cases, workers are not aware of the hazard potential or are not properly trained to identify safety issues.

Before Excavation Begins

All workers must understand the nature of the work to be performed, the procedures to be followed and the potential hazards to be encountered before any work begins. Electrical, water and sewer easements must be investigated and their locations properly identified.

Precautions to prevent accidental contact must be taken.

All objects outside the excavation area that could cause a cave-in must be supported or moved a safe distance away.
Barrier guards, signs or flashing lights also must be provided to protect the excavation site.
Access to the area must be restricted to workers.

When workers are required to enter an excavated area that is more than four (4) feet deep, confined space safety rules must be followed. These rules require preliminary monitoring in the work area if breathable air contamination or a hazardous atmosphere is suspected.

When contamination exists, monitoring results must be posted at the work site and an entry supervisor must issue a work permit. The permit must outline the work to be performed, potential hazards and approved work procedures.

All confined space work team members must be identified. Team members include an attendant who enforces the work permit, entrants who do the work inside the workspace, a rescue team that is on stand-by status in the event of an emergency and an atmosphere evaluator who monitors contamination in the workspace.

The permit must be posted at the work site. Stand-alone rescue equipment also must be immediately available, and rescue team members must be trained in emergency rescue techniques. The attendant cannot perform rescue operations, all rescuers must be respirator-certified. At least one person must be trained in cardiopulmonary resuscitation techniques.

Special Safety Issues

Equipment should be operated only by trained workers.

No work should be performed on the faces of sloped or benched excavations above workers without protecting workers at the lower levels.

Drainage must be provided whenever work is performed in excavations where water is accumulating or can accumulate.

Stairways, ladders and/or ramps must be provided in all trenches that are four (4) feet deep or deeper. Means of access/egress must be positioned so they are no more than twenty-five (25) feet from any worker inside the work area. Earthen ramps are acceptable for egress only if a worker can use them while walking in an upright position.

Guardrails must be provided on walkways or bridges that cross excavations that are more than six (6) feet deep.

Reflectorized or warning vests must be worn by all workers when vehicular traffic is present or in close proximity to the excavation site. It also may be necessary to provide traffic control in busy work areas.

Excavated Materials

All excavated materials must be set back at least two (2) feet from the excavation area to prevent possible cave-ins. When the proper setback cannot be provided, materials should be hauled away. Excavation equipment should not be operated or stored where it can create a potential cave-in problem.

Safe egress or rescue operations should not be blocked by materials or equipment stored outside the work area. A clear path of egress from the work area must always be maintained.

Work Site Inspections

Work site inspections must be conducted by a competent person on a daily basis before work begins. Inspections also are required throughout the work shift, as needed, to ensure proper safety conditions are maintained. Other inspections must be conducted after each rainstorm or hazardous occurrence.

The competent person must have training in soil analysis, the use of protective systems, and rescue procedures. The competent person must understand OSHA safety requirements and have the authority to stop work immediately when a hazard develops.

Trench/Excavation Daily Check List

This check list is mandatory for all trenching/excavating activities Balestrieri performs.

- Excavations and Protective Systems inspected by Competent Person daily, before start of work.
- Proper slope (29 CFR 1926 Subpart P) for most soil descriptions.
- Surface encumbrances supported or removed.
- Employees protected from loose rock or soil.
- Ladder in place (properly secured) within 25’ of the workers.
- Spoils, materials and equipment set back a minimum of 2’ from edge of excavation.
- Barriers provided at all remote excavations, wells, pits, shafts, etc.
- Walkways and bridges over excavations 6’ or more in depth equipped with guardrails.
- Warning system established and used when mobile equipment is operating near edge of excavation.
- Employees prohibited from working or walking under suspended loads.
- Employees prohibited from working on faces of sloped or benched excavations above other employees.
- Warning vests or other highly visible PPE provided and worn by all employees exposed to vehicular traffic.
- Hard hats worn by all employees.
- Prior to starting other contractors shall be notified/made aware of the trench activities and hazards.
- Competent Person has authority to remove workers from excavation immediately.

Notes:

Fall Protection

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Fall Protection

Each year, falls consistently account for the greatest number of fatalities in the construction industry. Falls may result from a number of factors, including unstable working surfaces, misuse of fall protection equipment and human error. Studies have shown that the use of guardrails, fall arrest systems, safety nets, covers and travel restriction systems can prevent many of the deaths and injuries that result from falls.

Balestrieri is dedicated to the protection of its employees from on-the-job injuries. All employees of Balestrieri have the responsibility to work safely on the job. It is the policy of Balestrieri to take all practical measures possible to prevent employees from being injured by falls from heights. We will take necessary steps to eliminate, prevent and control fall hazards. We will comply fully with the OSHA Fall Protection standard (CFR 1926, Subpart M, Fall Protection).

The purpose of this plan is to:

- Supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on the job and;
- Ensure that each employee is trained and made aware of the safety provisions, which are to be implemented by this plan prior to the start of erection.

This plan is designed to enable employers and employees to recognize the fall hazards on this job and to establish the procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking/working surfaces. Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the superintendent of the concern and the concern addressed before proceeding.

Safety policy and procedure on any one project cannot be administered, implemented, monitored and enforced by any one individual. The total objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by every individual involved with the project from management down to the last employee. Each employee must understand their value to the company; the costs of accidents, both monetary, physical and emotional; the objective of the safety policy and procedures; the safety rules that apply to the safety policy and procedure and what their individual role is in administering, implementing, monitoring, and compliance of their safety policy and procedures. This allows for a more personal approach to compliance through planning, training, understanding and cooperative effort, rather than by strict enforcement. If for any reason an unsafe act persists, strict enforcement will be implemented.

It is the responsibility of executive management to implement this fall protection plan. Field superintendents are responsible for continual observational safety checks of their work operations and to enforce the safety policy and procedures. The superintendent also is responsible to correct any unsafe acts or conditions immediately. It is the responsibility of the employee to understand and adhere to the procedures of this plan and to follow the instructions of the superintendent. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employees. Management must approve any changes to this fall protection plan.

Fall Hazard Evaluation and Identification

A fall hazard is anything in the workplace that could cause an unintended loss of balance or bodily support and result in a fall. Fall hazards cause accidents such as the following:

- A worker walking near an unprotected leading edge trips over a protruding board.
- A worker slips while climbing an icy stairway.
- A makeshift scaffold collapses under the weight of four workers and their equipment.
- A worker carrying a sheet of plywood on a flat roof steps into a skylight opening.

Fall hazards are preventable. You can identify them and eliminate or control them before they cause injuries.

The superintendent on each jobsite will be responsible for identifying fall hazards on their jobsite. The superintendent will evaluate each situation or work procedure where employees may be exposed to a fall of 4 feet or more. The superintendent will be responsible for developing a plan to eliminate the exposures, if possible, or to select the appropriate fall protection systems and/or equipment.

How to Evaluate Fall Hazards

The purpose of evaluating fall hazards is to determine how to eliminate or control them before they cause injuries. Below are important factors to consider in conducting an evaluation.

Involve Others. You may need others to help you evaluate fall hazards. Involve those who may be exposed to fall hazards and their supervisors; they'll help you identify the hazards and determine how to eliminate or control them. Involving others also strengthens your safety-and-health program.

Determine how workers will access elevated surfaces to perform their tasks. Will workers be using portable ladders, supported scaffolds, aerial lifts or suspension platforms to reach their work areas? Which ones will they use? How and where will they use the equipment?

Identify tasks that could expose workers to falls. Use a set of work-site plans to review the entire construction project. Evaluate each phase of the project from the group up. Ensure that all walking/working surfaces have the strength to support workers and their equipment and then identify all tasks that could expose workers to falls. A walking/working surface is any surface, horizontal or vertical, on which one walks or works.

Identify Hazardous Work Areas

Determine if workers' tasks could expose them to the following fall hazards:

- Holes in walking/working surfaces that they could step into or fall through.
- Elevated walking/working surfaces ten feet or more above a lower level.
- Skylights and smoke domes that workers could step into or fall through.
- Wall openings such as those for windows or doors that workers could fall through.
- Trenches and other excavations that workers could fall into.
- Walking/working surfaces from which workers could fall onto dangerous equipment.
- Hoist areas where guardrails have been removed to receive materials.
- Sides and ledges of walking/working surfaces such as established floors, mezzanines, balconies and walkways that are six feet or more above a lower level and not protected by guardrails at least 39 inches high.
- Ramps and runways that are not protected by guardrails at least 39 inches high.
- Leading edges – edges of floors, roofs and decks – that change location as additional sections are added.
- Wells, pits or shafts not protected with guardrails, fences, barricades or covers.

Determine how frequently workers will do tasks that expose them to falls.

The more frequently a worker is exposed to a fall hazard, the more likely it is that the worker could fall.

Determine whether workers need to move horizontally, vertically or in both directions to do their tasks.

How workers move to perform tasks can affect their risk of falling. Knowing how they move to perform tasks can help you determine how to protect them.

Determine the number of workers exposed to fall hazards.

Generally, the more workers that are exposed to a fall hazard, the more likely it is one could fall.

Identify walking/working surfaces that could expose workers to fall hazards.

Examples: floors, roofs, ramps, bridges, runways, formwork, beams, columns, trusses and rebar.

Determine fall distances from walking/working surfaces to lower levels.

Generally, workers must be protected from fall hazards on walking/working surfaces where they could fall ten feet or more to a lower level. However, workers must be protected from falls of six feet or more from any of the following:

- Holes and skylights in walking/working surfaces.
- Wall openings that have an inside bottom edge less than 39 inches above a walking/working surface.
- Established floors, mezzanines, balconies and walkways with unprotected sides and edges.
- Excavations with edges that are not readily seen because of plant growth or other visual barriers.
- Wells, pits, shafts and similar excavations.
- Workers must also be protected from falling onto or into dangerous equipment.

Ensure that existing guardrails and covers meet OSHA requirements.

Guardrails must be designed and built to meet the requirements of 1926.502(b). Covers must meet the requirements of 1926.501(i).

Identify fall hazards that can be eliminated.

Eliminating a fall hazard is the most effective fall protection strategy. Ways to eliminate fall hazards:

- Perform construction work on the ground before lifting or tilting it to an elevated position.
- Install permanent stairs early in the project so that workers don't need to use ladders between floors.
- Use tool extensions to perform work from the ground.

Identify fall hazards that can't be eliminated

If you can't eliminate fall hazards, you need to prevent falls or control them so that workers who may fall are not injured.

- Ways to prevent falls include covers, guardrails, handrails, perimeter safety cables and personal fall-restraint systems.
- Ways to control falls include personal fall-arrest systems, positioning-device systems and safety-net systems. Use these fall-protection systems only when you can't eliminate fall hazards or prevent falls from occurring.

Determine whether anchorages are necessary

If workers use personal fall-arrest or restraint systems, they'll need secure anchorages for their lifelines or lanyards. Anchorages for personal fall-arrest systems must be able to support at least 5,000 pounds per attached worker or be designed with a safety factor of at least two – twice the impact force of a worker free-falling six feet. Anchorages for personal fall-restraint systems must be able to support at least 3,000 pounds per attached worker or be designed with a safety factor of at least two – twice the peak anticipated dynamic load.

Consider other factors that could increase risk of falls

Consider the environment. Will workers' tasks expose them to overhead power lines? Will they need to use scaffolds, ladders or aerial lifts on unstable or uneven ground? Will they be working during hot, cold or windy weather? Consider ergonomics. Will workers need to frequently lift, bend or move in ways that put them off balance? Will they be working extended shifts that could contribute to fatigue.

Examples of Situations Requiring Fall Protection

The following are examples of situations were fall protection would be needed. This listing is by no means complete and there are many other situations where a fall of 6 feet or more is possible. It should be noted that ladders and scaffolding are not included in this list because they are covered by other OSHA standards and other requirements of our safety program.

Wall Openings

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 meters) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 meter) above the walking/working surface must be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

Holes

Personal fall arrest systems, covers or guardrail systems shall be erected around holes (including skylights) that are more than 6 feet (1.8 meters) above lower levels.

Leading Edges

Each employee who is constructing a leading edge 6 feet (1.8 meters) or more above lower levels shall be protected by guardrail systems, safety net systems or personal fall arrest systems.

Excavations

Each employee at the edge of an excavation 6 feet (1.8 meters) or more deep shall be protected from falling by guardrail systems, fences, barricades or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet (1.8 meters) or more above the excavation.

Formwork and Reinforcing Steel

For employees, while moving vertically and/or horizontally on the vertical face of rebar assemblies built in place, fall protection is not required when employees are moving. OSHA considers the multiple hand holds and foot holds on rebar assemblies as providing similar protection as that provided by a fixed ladder. Consequently, no fall protection is necessary while moving point to point for heights below 24 feet (7.3 meters). An employee must be provided with fall protection when climbing or otherwise moving at a height more than 24 feet (7.3 meters), the same as for fixed ladders.

Hoist Areas

Each employee in a hoist area shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system.

Overhand Bricklaying and Related Work

Each employee performing overhand bricklaying and related work 6 feet (1.8 meters) or more above lower levels shall be protected by guardrail systems, safety net systems or personal fall arrest systems, or shall work in a controlled access zone. All employees reaching more than 10 inches (25 cm) below the level of a walking/working surface on which they are working shall be protected by a guardrail system, safety net system, or personal fall arrest system.

Precast Concrete Erection and Residential Construction

Each employee who is 6 feet (1.8 meters) or more above lower levels while erecting precast concrete members and related operations such as grouting of precast concrete members and each employee engaged in residential construction, shall be protected by guardrail systems, safety net systems or personal fall arrest systems.

Ramps, Runways, and Other Walkways

Each employee using ramps, runways and other walkways shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems.

Low-slope Roofs

Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50 feet (15.24 meters) or less in width, the use of a safety monitoring system without a warning line system is permitted.

Steep Roofs

Each employee on a steep roof with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels shall be protected by guardrail systems with toe-boards, safety net systems or personal fall arrest systems.

Controlled Access Zones

A controlled access zone is a work area designated and clearly marked in which certain types of work (such as overhand bricklaying) may take place without the use of conventional fall protection systems—guardrail, personal arrest or safety net—to protect the employees working in the zone.

Controlled access zones are used to keep out workers other than those authorized to enter work areas from which guardrails have been removed. Where there are no guardrails, masons are the only workers allowed in controlled access zones.

Controlled access zones, when created to limit entrance to areas where leading edge work and other operations are taking place, must be defined by a control line or by any other means that restrict access. Control lines shall consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

- Flagged or otherwise clearly marked at not more than 6-foot (1.8 meters) intervals with high-visibility material;
- Rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches (1 meter) from the walking/working surface and the highest point is not more than 45 inches (1.3 meters)--nor more than 50 inches (1.3 meters) when overhand bricklaying operations are being performed—from the walking/working surface;
- Strong enough to sustain stress of not less than 200 pounds (0.88 kilonewtons). Control lines shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- Control lines also must be connected on each side to a guardrail system or wall.

When control lines are used, they shall be erected not less than 6 feet (1.8 meters) nor more than 25 feet (7.6 meters) from the unprotected or leading edge, except when precast concrete members are being erected. In the latter case, the control line is to be erected not less than 6 feet (1.8 meters) nor more than 60 feet (18 meters) or half the length of the member being erected, whichever is less, from the leading edge.

Controlled access zones when used to determine access to areas where overhand bricklaying and related work are taking place are to be defined by a control line erected not less than 10 feet (3 meters) nor more than 15 feet (4.6 meters) from the working edge. Additional control lines must be erected at each end to enclose the controlled access zone. Only employees engaged in overhand bricklaying or related work are permitted in the controlled access zones.

On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones will be enlarged as necessary to enclose all points of access, material handling areas and storage areas.

On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

Fall Protection Systems

When there is a potential fall of 6 feet or more, we will utilize one or more of the following means of providing protection:

Guardrail Systems

Guardrail systems must meet the following criteria. Toprails and midrails of guardrail systems must be at least one-quarter inch (0.6 centimeters) nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for toprails, it must be flagged at not more 6 feet intervals (1.8 meters) with high-visibility material. Steel and plastic banding cannot be used as toprails or midrails. Manila, plastic or synthetic rope used for toprails or midrails must be inspected as frequently as necessary to ensure strength and stability.

The top edge height of toprails or (equivalent) guardrails must be 42 inches (1.1 meters) plus or minus 3 inches (8 centimeters) above the walking/working level. When workers are using stilts, the top edge height of the toprail or equivalent member, must be increased an amount equal to the height of the stilts.

Screens, midrails, mesh, intermediate vertical members or equivalent intermediate structural members must be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches (53 centimeters) high. When midrails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking/working level. When screens and mesh are used, they must extend from the top rail to the walking/working level and along the entire opening between top rail supports. Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches (48 centimeters) apart.

Other structural members, such as additional midrails and architectural panels, shall be installed so that there are no openings in the guardrail system more than 19 inches (48 centimeters).

The guardrail system must be capable of withstanding a force of at least 200 pounds (890 newtons) applied within 2 inches of the top edge in any outward or downward direction. When the 200 pound (890 newtons) test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches (1 meter) above the walking/working level.

Midrails, screens, mesh, intermediate vertical members, solid panels and equivalent structural members shall be capable of withstanding a force of at least 150 pounds (667 newtons) applied in any downward or outward direction at any point along the midrail or other member.

Guardrail systems shall be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.

The ends of top rails and midrails must not overhang terminal posts, except where such overhang does not constitute a projection hazard.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section must be placed across the access opening between guardrail sections when hoisting operations are not taking place.

At holes, guardrail systems must be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall have not more than two sides with removable guardrail sections. When the hole is not in use, it must be covered or provided with guardrails along all unprotected sides or edges.

If guardrail systems are used around holes that are used as access points (such as ladder ways), gates must be used or the point of access must be offset to prevent accidental walking into the hole.

If guardrails are used at unprotected sides or edges of ramps and runways, they must be erected on each unprotected side or edge.

Personal Fall Arrest Systems

These consist of an anchorage, connectors and a body belt or body harness and may include a deceleration device, lifeline or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

- Limit maximum arresting force on an employee to 900 pounds (4 kilonewtons) when used with a body belt;
- Limit maximum arresting force on an employee to 1,800 pounds (8 kilonewtons) when used with a body harness;
- Be rigged so that an employee can neither free fall more than 6 feet (1.8 meters) nor contact any lower level;
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters); and
- Have sufficient strength to withstand twice the potential impact energy of an employee free-falling a distance of 6 feet (1.8 meters) or the free fall distance permitted by the system, whichever is less.

The use of body belts for fall arrest is prohibited and a full body harness is required.

Personal fall arrest systems must be inspected prior to each use for wear damage and other deterioration. Defective components must be removed from service. O-rings and snaphooks must have a minimum tensile strength of 5,000 pounds (22.2 kilonewtons). O-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds (16 kilonewtons) without cracking, breaking or suffering permanent deformation.

Snaphooks shall be sized to be compatible with the member to whom they will be connected or shall be of a locking configuration.

Unless the snaphook is a locking type and designed for the following connections, they shall not be engaged (a) directly to webbing, rope or wire rope; (b) to each other; (c) to a O-ring to which another snaphook or other connector is attached; (d) to a horizontal lifeline; (e) to any object incompatible in shape or dimension relative to the snaphook, thereby causing the connected object to depress the snaphook keeper and release unintentionally.

OSHA considers a hook to be compatible when the diameter of the O-ring to which the snaphook is attached is greater than the inside length of the snaphook when measured from the bottom (hinged end) of the snaphook keeper to the inside curve of the top of the snaphook. Thus, no matter how the O-ring is positioned or moved (rolls) with the snaphook attached, the O-ring cannot touch the outside of the keeper, thus depressing it open. As of January 1, 1998, the use of non-locking snaphooks is prohibited.

On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

Horizontal lifelines shall be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two. Lifelines shall be protected against being cut or abraded.

Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet (0.61 meters) or less shall be capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kilos) applied to the device with the lifeline or lanyard in the fully extended position.

Self-retracting lifelines and lanyards that do not limit free fall distance to 2 feet (0.61 meters) or less, rip stitch lanyards and tearing and deforming lanyards hall be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kilonewtons) applied to the device with the lifeline or lanyard in the fully extended position.

Ropes and straps (webbing) used in lanyards, lifelines and strength components of body belts and body harnesses shall be made of synthetic fibers.

Anchorages shall be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two, i.e. capable of supporting at least twice the weight expected to be imposed upon it. Anchorages used to attach personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms and must be capable of supporting at least 5,000 pounds (22.2. kilos) per person attached.

Lanyards and vertical lifelines must have a minimum breaking strength of 5,000 pounds (22.2 kilos).

Positioning Device Systems

These body belt or body harness systems are to be set up so that a worker can free fall no farther than 2 feet (0.6 meters). They shall be secured to an anchorage capable of supporting a least twice the potential impact load of an employee's fall or 3,000 pounds (13.3 kilos), whichever is greater. Requirements for snap-hooks, O-rings and other connectors used with positioning device systems must meet the same criteria as those for personal fall arrest systems.

Safety Net Systems

Safety nets must be installed as close as practicable under the walking/working surface on which employees are working and never more than 30 feet (9.1 meters) below such levels. Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage and other deterioration. Safety nets shall be installed with sufficient clearance underneath to prevent contact with the surface or structure below.

Items that have fallen into safety nets including—but not restricted to, materials, scrap, equipment and tools—must be removed as soon as possible and at least before the next work shift.

Warning Line Systems

Warning line systems consist of ropes, wires or chains and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot (1.8 meters) intervals with high-visibility material;
- Rigged and supported so that the lowest point including sag) is no less than 34 inches (0.9 meters) from the walking/working surface and its highest point is no more than 39 inches (1 meter) from the walking/working surface.
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 newtons) applied horizontally against the stanchion, 30 inches (0.8 meters) above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof or platform edge;
- The rope, wire or chain shall have a minimum tensile strength of 500 pounds (2.22 kilonewtons) and after being attached to the stanchions, must support without breaking the load applied to the stanchions as prescribed above.
- Shall be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over.

Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 meters) from the roof edge parallel to the direction of mechanical equipment operation and not less than 10 feet (3 meters) from the roof edge perpendicular to the direction of mechanical equipment operation.

When mechanical equipment is not being used, the warning line must be erected not less than 6 feet (1.8 meters) from the roof edge.

Covers

Covers located in roadways and vehicular aisles must be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected. All other covers must be able to support at least twice the weight of employees, equipment and materials that may be imposed on the cover at any one time.

To prevent accidental displacement resulting from wind, equipment or workers' activities, all covers must be secured. All covers shall be color coded or bear the markings "HOLE" or "COVER."

Protection From Falling Objects

When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of potential falling objects. No materials or equipment except masonry and mortar shall be stored within 4 feet (1.2 meters) of working edges. Excess mortar, broken or scattered masonry units and all other materials and debris shall be kept clear of the working area by removal at regular intervals.

During roofing work, materials and equipment shall not be stored within 6 feet (1.8 meters) of a roof edge unless guardrails are erected at the edge, and materials piled, grouped or stacked near a roof edge must be stable and self-supporting.

Safety Monitoring Systems

When no other alternative fall protection has been implemented, the employer shall implement a safety monitoring system. Employers must appoint a competent person to monitor the safety of workers and the employer shall ensure that the safety monitor:

- Is competent in the recognition of fall hazards;
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices;
- Is operating on the same walking/working surfaces of the workers and can see them;
- Is close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.

Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

All workers in a controlled access zone shall be instructed to promptly comply with fall hazard warnings issued by safety monitors.

Enforcement

Constant awareness of and respect for fall hazards and compliance with all safety rules are considered conditions of employment. The jobsite superintendent, as well as individuals in the safety department, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

Accident Investigations

All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident occurring, this plan shall be reviewed to determine if additional practices, procedures or training need to be implemented to prevent similar types of falls or incidents from occurring.

Required Training for Employees

Workers who could be exposed to fall hazards must be trained to recognize the hazards and to know the procedures that minimize the hazards. Training will be given to employees on an annual basis and documentation is kept of such training in the form of sign-in sheets.

Balestrieri shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

Employees will be trained in the following areas:

- The nature of fall hazards in the work area
- The correct procedures for erecting, maintaining, disassembling and inspecting fall protection systems
- The use and operation of controlled access zones and guardrail, personal fall arrest, safety net, warning line and safety monitoring systems
- The role of each employee in the safety monitoring system when the system is in use
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
- The correct procedures for equipment and materials handling and storage and the erection of overhead protection; and,
- Employees' role in fall protection plans.

Inspecting and Maintaining Equipment

When ladders, scaffolds, aerial lifts and fall-protection systems are used – careful attention must be paid to the condition of the equipment. Equipment must be inspected frequently, kept clean and stored properly.

Below are inspection tables for fall-protection systems:

Inspecting Harness, Lifeline and Anchorage

COMPONENT	WHAT TO LOOK FOR
Harness webbing	Frayed edges, broken fibers, pulled stitches, cuts, burns and chemical damage.
Harness D-rings	Cracks, breaks and rough or sharp edges; the D-ring should pivot easily.
Harness buckles	Excessive wear, frayed or cut fibers, broken stitching.
Harness grommets	Loose, bent or broken grommets and punched holes not made by the manufacturer.
Lifelines	Wear or deterioration.
Anchorages and anchorage connectors	Look for abrasion and damaged threads or swages. Inspect stitching and loops on synthetic slings for cuts, cracks or frayed and broken stitching. Look for excessive kinks or damaged steel fibers.
Snaphooks	Look for cracks, excessive wear and corrosion. The snaphooks should open easily and close firmly. Keeper locks must prevent the keeper from opening when it's closed.

Inspecting Lanyards

COMPONENT	WHAT TO LOOK FOR
Wire rope lanyard	Cuts, frayed strands or excessive wear.
Web lanyard	Cuts, discoloration, cracks, frayed or broken stitching.
Rope lanyard	Frayed or cut fibers. The entire length of the rope should have the same diameter.
Shock-absorbing lanyard	Cuts, discoloration, cracks, frayed or broken stitching. Remove a lanyard from service if any part of the warning label is exposed.

Other Fall Protection Items

COMPONENT	WHAT TO LOOK FOR
Self-retracting lifelines	Look for cuts, frayed strands or excessive wear in the line and damage to the housing. If the unit needs service, check the manufacturer's recommendations. Don't try to repair it.
Guardrail systems	Frequently inspect manila, plastic or synthetic rope used for top rails or midrails to ensure that the rope meets the minimum strength and rail height requirements.
Safety-net systems	Inspect safety nets for damage or deterioration weekly and after any event that could damage them. Remove defective components from service.
Ladders	A competent person must inspect ladders periodically. They must also be inspected after any event that could damage them.
Scaffolds	A competent person must inspect a scaffold and its components after it has been erected, before each shift and after any event – including severe weather – that could damage it. The inspection should include the foundation
Suspension scaffolds	A competent person must inspect suspension ropes before each shift and after any event that could damage them. Inspect and tighten wire rope clips to the manufacturer's recommendations at the start of each shift. Inspect manila or synthetic rope used for top rails or midrails frequently to ensure that it meets the minimum strength and rail height requirements.
Crane and derrick-suspended personnel platforms after the trail lift	Immediately after a trail lift, a competent person must inspect the rigging, personnel platform and the base that supports the crane or derrick.
Crane and derrick-suspected personnel platforms. After proof testing.	A competent person must inspect the platform and rigging immediately after they have been proof-tested.

Cleaning Equipment

Wash synthetic rope and body harnesses in soapy water to remove dirt, rinse them with clean water. Air-dry at room temperature. Don't use cleaning solvents as solvents can damage synthetic material.

Don't lubricate moving parts unless the manufacturer requires it. Lubricants attract dirt.

Don't remove information labels and warnings. Make sure they are still legible after cleaning.

Storing Equipment

Follow manufacturer's instruction for storing equipment.

Store equipment in an area that is clean, dry and moisture-free. Avoid excessive heat, light, oil and corrosive chemicals.

Definitions

Anchorage means a secure point of attachment for lifelines, lanyards or deceleration devices.

Body belt (safety belt) means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline or deceleration device.

Body harness means straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Buckle means any device for holding the body belt or body harness closed around the employee's body.

Connector means a device, which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

Controlled access zone (CAZ) means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems or safety net systems and access to the zone is controlled.

Dangerous equipment means equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment and other units), which as a result of form or function may be hazardous to employees who fall onto or into such equipment.

Deceleration device means any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration distance means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the locations of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall and the location of that attachment point after the employee comes to a full stop.

Equivalent means alternative designs, materials or methods to protect against a hazard, which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods materials or designs specified in the standard.

Failure means load refusal, breakage or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Free fall means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free fall distance means the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline/lanyard elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail system means a barrier erected to prevent employees from falling to lower levels.

Hole means a gap or void 2 inches (5.1 cm) or more in its least dimension in a floor, roof or other walking/working surface.

Infeasible means that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

Lanyard means a flexible line of rope, wire rope or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline or anchorage.

Leading edge means the edge of a floor, roof or formwork for a floor or other walking/working surface (such as the deck), which changes location as additional floor, roof, decking or formwork sections are placed, formed or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline) and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Low-slope roof means a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

Lower levels means those areas or surfaces to which an employee can fall. Such areas or surfaces include but are not limited to ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Mechanical equipment means all motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts.

Opening means a gap or void that is 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Overhand bricklaying and related work means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connector, a body belt or body harness and may include a lanyard, deceleration device, lifeline or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning device system means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

Rope grab means a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking or both.

Roof means the exterior surface on the top of a building. This does not include floors or formwork which because a building has not been completed, temporarily becomes the top surface of a building.

Roofing work means the hoisting, storage, application and removal of roofing materials and equipment, including related insulation, sheet metal and vapor barrier work but not including the construction of the roof deck.

Safety-monitoring system means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-retracting lifeline/lanyard means a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which after onset of a fall, automatically locks the drum and arrests the fall.

Snaphook means a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and when released, automatically closes to retain the object. Snaphooks are generally one of two types: the locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or the non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snaphook as part of personal fall arrest systems and positioning device systems is prohibited.

Steep roof means a roof having a slope greater than 4 in 12 (vertical to horizontal).

Toe board means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Unprotected sides and edges mean any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp or runway where there is no wall or guardrail system at least 39 inches (1.0m) high.

Walking/working surface means any surface, whether horizontal or vertical on which an employee walks or works, including but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles or trailers, on which employees must be located in order to perform their job duties.

Warning line system means a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt or safety net systems to protect employees in the area.

Work area means that portion of a walking/working surface where job duties are being performed.

Notes:

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Heavy Metals

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Heavy Metals

The purpose of this program is to protect employees from the hazards associated with heavy metals such as lead, cadmium and arsenic and chemicals containing these metals.

Responsibilities

The company's executive management is responsible for:

- Developing and implementing a company-wide heavy metals program.
- Monitoring compliance with the OSHA Standards for:
    - Arsenic (29 CFR 1910.1018)
    - Cadmium (29 CFR 1910.1027)
- Providing general lead and other heavy metals safety training.
- Maintaining appropriate MSDS for these chemicals.
- Conducting exposure assessments and evaluating exposure control measures as necessary.
- Investigating accidents and near-miss incidents.
- Maintaining employee exposure records.

Field Superintendents' Responsibilities:

- Ensuring compliance with this program in the work area.
- Developing standard operating procedures that address the specific safety measures to be implemented when coming in contact with these materials.
- Coordinating the provision of medical examinations, exposure monitoring and recordkeeping as required.
- Ensuring that employees with potential exposure receive the appropriate training before working in an environment that contains these chemicals.
- Notifying executive management and/or the safety manager when there is a change in equipment processes or controls which may result in additional exposure to these chemicals.

Employees' Responsibilities:

- Know the provisions of this program.
- Report accidents and near-miss incidents, possible overexposures or unsafe conditions to your supervisor.
- Wear and utilize personal protective equipment (PPE), utilize engineering controls and follow administrative controls when recommended and provided.

Hazard Data

Lead

Lead can enter your body through inhalation and ingestion. Lead containing materials can be found in lead based paints, batteries, leaded solders, and demolition materials. Some organic lead compounds, such as tetraethyl lead, can be absorbed through the skin but for inorganic lead compounds, this is not a common route of exposure. Absorbed lead is carried through the blood stream and is stored in various organs and tissues. Even if you don't experience immediate symptoms, lead stored in tissues can be causing irreversible damage.

Acute Exposures. If large enough doses are absorbed in a short period of time, encephalopathy (disease of the brain) can develop. This may lead to coma and death. Occupational exposures to this level of magnitude are rare.

Chronic Exposures. Chronic overexposures to lead may damage your blood-forming, nervous, urinary and reproductive systems. Overexposure to lead can cause kidney disease or anemia. Lead adversely affects the reproductive systems of both men and women. In men, lead exposure may cause decreased sex drive, impotence and sterility. In women, it can cause decreased fertility and abnormal menstrual cycles. Lead can also harm a developing fetus causing birth defects, mental retardation, miscarriages and stillbirths.

Symptoms of exposure to lead include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and severe abdominal pain. Paralysis, detected by a characteristic "wrist drop" or "foot drop" is another sign of exposure.

Cadmium

Cadmium can be inhaled or ingested. Local skin and eye irritation may occur if contact with cadmium compounds occurs.

Acute Exposures. High exposures may cause mild irritation of the upper respiratory tract, a sensation of throat construction and a metallic taste in the mouth and/or cough. Up to ten (10) hours later, exposed persons may notice a progressive shortness of breath, chest pain and flu-like symptoms (weakness, fever, headache, chills, and sweating and muscular pain). Acute pulmonary edema may also develop.

Chronic Exposures. Repeated long-term exposure to cadmium may result in kidney damage and an increased risk of lung or prostate cancer. There is reported evidence that cadmium causes teratogenic effects (fetal damage) in laboratory test animals.

Arsenic

Arsenic can be inhaled or ingested. Skin and eye irritation may occur if contact with arsenic compounds occurs. Some arsenic compounds, such as Arsenic trichloride, are readily absorbed through the skin.

Acute Exposures. Short-term exposures to high concentrations of arsenic may cause irritation of the respiratory tract and ulceration of the nasal septum. If arsenic is ingested, symptoms may include burning lips, throat constriction, severe stomach pain, nausea and projectile vomiting. Skin exposure may cause dermatitis.

Chronic Exposures. Long-term exposures to arsenic may cause lung cancer, skin cancer, liver cancer or cancers of the larynx or lymphoid systems. Repeated exposures may cause nerve damage with burning, numbness and weakness of the arms and legs. There is reported evidence that arsenic causes teratogenic effects (fetal damage) in laboratory test animals.

Permissible Exposure Limits (PELs)

OSHA has issued the following guidelines for employee exposures to reduce the potential for adverse health effects:

Chemical	Action Level	PEL
Lead	30 µ g/m3*	50 µ g/m3
Cadmium	2.5 µ g/m3	5 µ g/m3
Inorganic Arsenic	5 µ g/m3	10 µ g/m3

**Micrograms per cubic meter of air.*

If exposures above any of the Action Levels are detected, Balestrieri will begin employee training, medical monitoring and other specific actions required by each of the respective OSHA standards.

Employee Exposure Assessments

Whenever lead, cadmium or arsenic compounds are found in work areas, air monitoring will be conducted to determine employee exposures. Measurements of employee exposures will be representatives of a full shift and will be taken for each job classification in each work area.

Air monitoring will also be conducted promptly in a work area if employees are experiencing signs or symptoms of exposure. If addition air monitoring is above the action level, then air monitoring will be conducted every six months until two consecutive results are below the action level. Written notifications of the air monitoring results, as well as corrective actions, are provided to the employees. Air monitoring will be repeated in an area each time there is a change in equipment, processes or controls, which may result in additional exposure.

Engineering Controls

Balestrieri strives to provide engineering and work practice controls to reduce exposures to or below the permissible exposure limit, except to the extent that such controls are not feasible.

Where engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit, job-specific controls will be implemented to reduce exposures to the lowest levels achievable and shall be supplemented by the use of respirators in accordance with government guidelines. Employee rotation is not required as a control strategy before respiratory protection is instituted.

Job-specific written control programs shall include the following:

- A description of each operation in which inorganic arsenic is emitted (i.e. machinery used, material processed, controls in place, crew size, operating procedures and maintenance practices).
- Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic.
- Monitoring data.

Personal Protective Equipment (PPE)

Respirators

Respirators will be provided to all employees. Respirator use and type will be determined by air monitoring results. Employees must be medically cleared to wear a respirator and fit-tested and trained before using a respirator. Training and fit testing will be done every six (6) months for those employees exposed to lead or arsenic and annually for employees exposed to cadmium.

Protective Clothing

In a regulated area, the following equipment will be provided to you and you must wear coveralls or similar full-body clothing, gloves, shoes or coverlets and aprons. Protective equipment should include face shields or vented goggles, where eye irritation may occur. Safety glasses must be worn under face shields.

Hygiene

To prevent the accidental ingestion of lead, cadmium or arsenic; eating, drinking and smoking are prohibited in the work area. In addition, employees must wash their hands after coming in contact with these chemicals.

In regulated areas, showers, washing facilities and changing rooms will be provided. Employees must wash their face and hands prior to eating and must shower at the end of the work shift. Protective clothing must never be removed from the changing room.

Signage - Regulated Area

Areas where the airborne levels of lead, cadmium or arsenic are found to exceed the PEL's will be designated as regulated areas. Access to these areas will be limited to persons trained to recognize the hazards of these chemicals. All entrances and access ways will be posted with signs bearing the following information:

WARNING **Lead Work Area** **Poison** **No Smoking or Eating** **Authorized Personnel Only**	**DANGER** **Cadmium** **Cancer Hazard** **Can Cause Lung and Kidney Disease** **Authorized Personnel Only** **Respirator Required in this Area** **No Smoking or Eating**	**DANGER** **Inorganic Arsenic** **Cancer Hazard** **Authorized Personnel Only** **No Smoking or Eating** **Respirator Required**

Medical Surveillance

Employees, who are found to have an exposure that exceeds the action level for at least thirty (30) days per year or to have been exposed for more than ten (10) years will be notified and will be included in a medical surveillance program. These employees will complete a medical questionnaire annually and receive a physical examination. The physical may include urine and blood tests or x-rays, depending upon the exposure. These medical benefits, which include the blood sampling, monitoring, and physical examination, will be provided to the employee at no cost. Balestrieri also follows the OSHA procedures of medical removal protection benefits according to OSHA 29 CFR 1926.62 (k)(2).

Whenever an employee has developed signs or symptoms associated with exposure to lead, cadmium or arsenic, an employee must receive medical attention.

Balestrieri will monitor employees' exposure. Employees will receive an explanation of the measurement procedure and a copy of record results. Requests for access to employee medical records will be granted.

Employee Information and Training

Every employee working in an environment that contains lead, cadmium or arsenic must receive training on the hazards of these chemicals. Supervisors should review the following with employees:

- Requirements of the appropriate OSHA standard
- Explanation of this program
- Contents of the Material Safety Data Sheet (MSDS) for lead, cadmium or arsenic
- Description of the medical surveillance program
- Signs and symptoms of exposure
- Instructions to report any signs or symptoms that may be attributable to exposure.
- Description of the operations in the work area where these chemicals are present.
- Work practices to reduce exposure, including engineering and administrative controls, along with PPE required.

This training will be conducted whenever a new hazard is introduced into the work area and whenever an employee demonstrates behavior that indicates a lack of understanding for this program.

Notes:

Infection Control

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Infection Control

Hospital and other health care facility construction and renovation projects pose particular risks to employees of Balestrieri due to accidental exposure to medical waste and/or infectious materials. Site specific plans for these projects will include communication with the officials of the facility for specifics on exposure to contaminates described in this section and will outline specific exposure possibilities and procedures to be followed to minimize the risk of transmission of contaminates. Every Balestrieri employee will be advised regarding which areas are prohibited. Balestrieri employees will, at all times when working in a health care facility, wear identification badges above the waistline, in a location that is clearly visible to patients, visitors and staff of the health care facility.

The health care facility is responsible for removing all medical waste and infectious material from an area where Balestrieri employees will be working. This may require Balestrieri to perform the work at a time when the area is free of contaminates, such as during a night shift. The health care facility is responsible for informing Balestrieri where patient areas for highly infectious patients are located. This would include any area where tuberculosis patients are.

Balestrieri employees are not to move, remove and/or have any contact with hazardous medical waste and/or infectious material. This section is meant to outline procedures for accidental contact and/or contamination from hazardous medical waste and/or infectious material. Infection Control is important for the protection of the public and for all Balestrieri employees. Contact precautions are designed to reduce the risk of transmission of micro-organisms by direct and/or indirect contact.

Bloodborne pathogens are organisms that cause diseases. These diseases are spread by contact with blood or body fluids contaminated with blood. Diseases caused by bloodborne pathogens of particular concern are:

- Human Immunodeficiency Virus (HIV)
- Hepatitis B Virus (HBV)
- Hepatitis C Virus (HCV)

HIV, HBV, and HCV are carried in the blood, semen, vaginal secretions and body fluids. Body fluids also can carry other infectious pathogens. Balestrieri employees have the option to receive the Hepatitis B vaccine at no cost, and are trained to treat all blood and body fluids as potentially infectious and to take steps to protect themselves.

Tuberculosis is an infectious disease that is caused by bacteria that can be passed from person to person through the air. A person with tuberculosis can spray droplets infected with the bacteria by coughing, sneezing or laughing. The bacteria can stay in the air for a long time.

Balestrieri trains all employees on bloodborne pathogens before each project and within 1 year of previous training. In addition all employees are trained on infection control practices prior to working at health care facilities. All training records are kept for at least 3 years. This training includes, but is not limited to:

- Hygiene – employees are to report to work neat and clean and wearing proper attire.
- Hand Washing – hand washing is essential in preventing the spread of communicable diseases. Employees are to wash their hands:
    - Before and after the work shift.
    - When hands are soiled.
    - Before and after toilet use.
    - After wiping or blowing the nose.
    - Upon entering or leaving an isolation or controlled area.
    - Before and after eating.
    - After glove removal.

  - Any other time the employee feels it is necessary.
  - After contact with a source of microorganisms.

- Entering Restricted Areas – ICU, immunology, oncology, patient rooms.
  - Check the sign on the door before you enter.
  - If you have any questions or concerns regarding the risk to patients or yourself due to the type of work to be performed, contact the nurse assigned to the patient.
  - It is good policy to consult with the area manager prior to starting any work.
  - The sign on the door explains what precautions are required prior to entering the room.
  - All supplies for safety are located outside the room (gloves, masks, etc.).
- Performing work in Surgical Area
  - All gowning procedures must be adhered to.
  - Foot coverings must be removed when leaving the area and replaced upon return.
  - Absolutely no eating or drinking is permitted in any of the surgical areas except where designated.
- Trained to never take any unnecessary risks when working where medical waste, blood and/or body fluids are present.
- Trained to never clean up medical waste, blood and/or body fluids.
- Report any medical waste and/or infectious material spills to specially trained staff of the medical care facility for clean up prior to working in the contaminated area.
- Proper disposal of any medical waste, infectious material and/or clean-up material.
- Reporting any potential contact with communicable disease while on the site to the supervisor.
- Notifying supervisor if employee has a communicable disease.
- Notifying supervisor if employee has any open sores or cuts.

Direct contact transmission from medical waste and/or infectious materials involves skin-to-skin contact and physical transfer of micro-organisms directly from one person to another person. Indirect contact transmission involves transfer of an infectious agent through a contaminated intermediate object, person or air. Examples of direct and indirect contact transmission sources include but are not limited to:

- Blood
- Body fluid secretions and excretions except sweat, regardless of whether they contain visible blood.
- Non-intact skin.
- Mucous membrane.
- Airborne microorganisms

Standard precautions are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection. Employees should have access to personal protective equipment as needed, which include but are not limited to:

- Gloves
- Goggles and masks
- Protective body suits
- Gowns
- Other protective devices designed to reduce the risk of accidental puncture/exposure

All Balestrieri employees have access to a copy of the exposure control plan. Procedures to be followed after actual and/or possible exposure to contaminates include but are not limited to:

- Wearing gloves at all times when handling blood, blood products and bandages, skin tissue, body secretions, mucous membranes or non-intact skin. Remove gloves after use and before touching non-contaminated items.
- Washing hands after touching blood, body fluids, secretions, excretions and touching contaminated items. This procedure should be followed regardless of the use of gloves.
- Wearing protective equipment such as gowns, protective body suits, masks and eye protection if aerosolization or splashes of blood or body secretions are likely to occur.
- Wash off immediately with soap and water if accidental contact with contaminates occur.
- Clean contaminate spills with a detergent followed by a bleach wipe down.
- Place all contaminated items and washing materials in plastic bags and dispose of as hazardous waste.
- Any employee exposed to any contaminates described in this section are to notify their supervisor immediately for follow up treatment. If the supervisor is not available, the exposed employee should immediately go to the emergency room of the facility.

Patients

Medical care facility construction and renovation poses particular risks to patients with compromised immune systems who may inhale airborne dust particles. Balestrieri must perform their work in a manner that will minimize the risk of fungal infections to high-risk patients.

During open ceiling work or work that produces any amount of airborne debris in and adjacent to patient care areas, patient traffic routes and public areas must have a floor to ceiling dust containment structure. Additional measures may be required in areas with severely immunocompromised patients, such as:

- HEPA filters
- Sticky walk-off mats
- Isolation of the HVAC system

If ceiling tile needs to be removed to access work above the ceiling, the tile must be replaced immediately upon completion of the work. No tile is to be left open after the end of the work shift.

All construction debris and demolition materials are to be removed from the site immediately in a tightly covered container via a route that avoids patient care and public areas.

Work in the patient area should be done in a manner which is as quiet as possible. Balestrieri employees will communicate quietly with each other and there will be no yelling. No radio and/or CD players should be used in the work area. The supervisor of Balestrieri employees must work with the health care facility to coordinate for planned loud work in any patient area prior to the work being performed. Any work compromising the complete function of a patient room or treatment area must be approved by the patient care managers for that area.

All construction areas are to be thoroughly cleaned upon completion of the work shift.

Notes:

Notes:

Mercury

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Mercury

Balestrieri employees may, in their normal working environment, be exposed to mercury.

Mercury containing equipment consists of devices, items or articles that contain varying amounts of elemental mercury that is integral to their functions, including several types of instruments that are used throughout the electric utility industry and other industries and municipalities.

Some commonly recognized devices containing mercury include:

- Thermostats
- Barometers
- Manometers
- Mercury switches, such as light switches.

Those who handle mercury waste are subject to the management standards under 40 CFR 273. Balestrieri follows both federal and state regulations for disposal of hazardous waste, including mercury waste.

Mercury is a liquid metal that is environmentally persistent and bioaccumulates in the food chain. Mercury is present in both organic and inorganic forms. Mercury is listed in state and federal regulations as a hazardous waste.

All forms of mercury are toxic. Mercury poisoning can result from inhalation, ingestion and injection or absorption through the skin. Mercury metal and mercury compounds are highly hazardous if inhaled and/or ingested. Dimethyl mercury rapidly penetrates intact skin. Depending on the type of mercury and dose, symptoms may appear relatively quickly (acute disease) or take a number of years to appear (chronic disease.). Elemental or airborne mercury that is deposited in water bodies becomes methylmercury, which is much more toxic. Additionally, in the ambient environment, mercury readily bioaccumulates up the food chain.

Various forms of mercury and their effects and hazards include:

- Mercury vapor (elemental mercury) is readily absorbed through inhalation and can also pass through intact skin. After absorption, the blood carries elemental mercury to the central nervous system where it is oxidized. The oxidation product produces injury. Persons heavily exposed to elemental mercury will develop characteristic symptoms, such as worsening tremors of the hands, shyness, insomnia and emotional instability. Mercury vapors can reach very high levels when the liquid is heated. Such levels will cause adverse effects in humans almost immediately if workplace controls are inadequate. Research apparatus and other laboratory equipment such as thermometers, vacuum pumps and manometers may contain mercury.
- Mercury salts, (mercuric nitrate) are highly toxic and corrosive. They accumulate mostly in the kidney, causing renal damage.
- Organomercury compounds attack the central nervous system causing tremors, impaired vision and hearing and paralysis. These compounds may also cause birth defects. The effects from exposure to excessive levels of airborne mercury or skin contact with mercury compounds may not be noticeable for months or years.
- Mercury fulminate is a detonator used in explosives.
- Mercury oxide is an oxidizer. It can cause organic materials to start burning in the same manner as any strong oxidizer.
- Dimethyl mercury, an extremely toxic material, is a colorless, sweet-smelling liquid. It is a severe fire hazard, with a flash point of -4 degrees C. This material rapidly penetrates the skin resulting in severe to fatal exposure from very minor quantities. Extreme caution is required when working with this material and when selecting personal protective equipment. All workers must have a current material safety data sheet for this product.

A worker's exposure to mercury should be less than the threshold limit values (TLVs), the exposure limits established by the American Conference of Governmental Industrial Hygienists (ACGIH). Following are the established limits:

- Mercury metal vapor 0.025 mg/m 3
- Mercury salts 0.025 mg/m 3
- Aromatic organic compounds 0.1 mg/m 3
- Alkyl compounds 0.01 mg/m 3

The following controls should be available for activities involving exposure to mercury:

- Adequate ventilation or vapor-containment systems.
- Mercury spill-control kits. These should be in all work areas where >1.0 MI of mercury is used (except for small sealed items such as thermometers and sphygmongmanometers). Spill control kits should be replaced or restocked following each use. Employees shall contain and control spills and summon a hazardous materials emergency response team for clean up and disposal.
- Catch basins and pans made of smooth impervious material and with edge lips. Steep edge lips are more effective than gentle rises in trapping spilled mercury. Catch basins should be large enough to contain the greatest amount of mercury that could spill and be positioned to catch mercury droplets escaping from any plausible direction. (It may be useful to place absorptive mats on seamless plastic sheets in or under the catch pans to capture mercury leaks from the equipment.) Droplets of mercury can then be collected by simply wrapping up the plastic with the mat still inside and disposing of it as mercury waste,
- To avoid the spread of contamination, never sweep mercury contaminated material or blow it off of surfaces with compressed-air nozzles.

Employees should have adequate training before undertaking work where mercury is involved. The required training includes, but is not limited to:

- Safe use of mercury.
- Mercury hazards.
- Cleanup of mercury spills.
- Required personal protective equipment, including respirator training.
- Procedures for summoning emergency response services.

Basic procedures employees should use when involved in an area where mercury is present:

- Always wear the appropriate PPE, including face masks, foot coverings and respirators.
- Never eat or drink in an area where mercury is present.
- Avoid skin and eye contact.

Immediate steps to be taken for a mercury spill include:

- Block off any area where droplets of spilled mercury are visible using tape or rope and post signs.
- Avoid walking on or touching any surface contaminated with mercury.
- Promptly notify the hazardous materials emergency response team.
- Personal protective equipment must be put on immediately.

Employees who become contaminated with mercury should:

- Immediately wash the affected area with soap, water and a scrub brush and clean well under the fingernails. Place items used in the washing effort into plastic bags and dispose of as hazardous waste.
- Inform medical personnel the type, quantity and physical state of mercury involved.
- Remove and place all contaminated clothing in a plastic bag to be disposed of as hazardous waste.

Elemental mercury spills can cause serious problems because:

- Mercury is dense. Large drops shatter into numerous small droplets that can move at great speed across long distances.
- Droplets and vapors tend to congregate in crevices. Porous materials can become contaminated and may have to be disposed of as mercury waste because they are too difficult to decontaminate.
- Metal objects are weaker after contamination with mercury and may be unsuitable for further use. Items soiled by spilled mercury often cannot be decontaminated and therefore, should be disposed of as mercury contaminated hazardous waste.

Disposal

Mercury waste is to be disposed of the same way as all hazardous waste. All items containing mercury should be put into waste disposal drums provided at the site and labeled. The label should read:

WARNING: CONTAINS MERCURY

VAPOR HARMFUL AT ROOM TEMPERATURE

MAY BE FATAL IF HEATED IN THE OPEN

DO NOT BREATH VAPOR

USE WITH ADEQUATE VENTILATION

AVOID SKIN CONTACT

Balestrieri contracts for disposal of hazardous waste. Each work site will be provided with the proper drums for disposal and employees are to follow the directions for each specific work site on the specific hazardous waste disposal procedures.

Notes:

Managing Health Hazards Associated with Pest Excrement

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Managing Health Hazards Associated with Pest Excrement

Bird and bat excrement, commonly referred to as droppings or feces, accumulates under trees near human habitations and on structures and machinery:

- Creating an environment favorable to the development of disease organisms harmful to humans and domestic animals.
- Causing corrosion.
- Creating objectionable odor and appearance.

This technical guide:

- Impeding human activities.
- Describes the potential health hazards associated with bird and bat droppings.
- Outlines procedures for the safe and effective management of bird and bat droppings.
- Is intended for use by persons interested in identifying and managing health hazards created by bird and bat droppings.

Disease Organisms Commonly Found in Bird and Bat Excrement

General

The high nutrient content of accumulated bird and bat excrement provides an excellent growth medium for organisms of potential human health concern. This guide primarily addresses the prevention of two illnesses caused by those organisms: cryptococcosis and histoplasmosis.

Cryptococcosis is usually associated with pigeon droppings at elevated roost sites; histoplasmosis with bird and bat droppings on soil under roosts. However, the infective stages of both organisms may be found in any accumulation of dry droppings and associated organic matter. Personnel should also be aware of the possible dangers of other disease organisms associated with bird and bat excrement.

Disease Organisms Associated with Bird and Bat Droppings

Mycosis, a fungal infection resulting in disease, is usually incurred by inhaling dusts, especially organic (decaying vegetation) dusts and dusts enriched with bird or bat droppings, which contain massive amounts of the disease organisms. These fungal organisms are ubiquitous in the environment and exposure to them is impossible to avoid. However, most humans are resistant to the amounts they encounter during normal activities.

The risk of contracting fungal infections is greatly increased by certain predisposing conditions such as an immuno-compromised state (e.g., HIV infection, immuno-suppressing medication, cancer, etc.), antibiotic therapy, surgical trauma, skin injury and chronic disease (see also http://www.cdc.gov/ncidod/diseases/crypto/crypto.hem (National Center for Infectious Diseases).

The fungal disease organisms found in bird and bat droppings are listed below, including the source of the organisms, the methods of contraction and the health effects.

Cryptococcosis (Torulosis, European Blastomycosis)

Source. Organic dusts, especially those contaminated with pigeon or bat droppings, are the most important source of the fungus, "cryptococcus informant", in the environment. "neoformans" has been found in as many as 84 percent of samples taken from old roosting sites. Up to 50-million colony forming units of C. Neoformans have been found per gram of pigeon droppings.

Contraction. Cryptococcosis is acquired by inhaling the yeast-like vegetative cells of the organism. These cells measure 1-3 microns in diameter and are easily airborne.

Health Effects. Clinical manifestations of pulmonary infection are not characteristic and may be absent. The infection may disseminate to the central nervous system, resulting in cryptococcal meningitis (inflammation of the membranes of the brain and spinal cord), which is difficult to diagnose and fatal if not properly and promptly, treated.

Histoplasmosis

Source. The causative agent of histoplasmosis, "Histoplasma capsulatum", a dimorphic fungus (mold), is found in soils throughout the world. It flourishes by overwhelming other soil organisms when high relative humidity and optimum temperatures are present in soil that has been enriched by accumulated bird droppings for 3 or more years. It has also been found in bird and bat droppings not in contact with the soil. Once established in soil enriched by bird or bat droppings, "capsulatum" is difficult to eliminate even after the nutrient source is removed (Krzysik 1989).

Contraction. Humans are infected by inhalation of the spores of this fungus, which can be carried by wind and dust.

Health Effects. Most infections produce no symptoms or only a mild influenza-like illness. However, pneumonia, blindness and even death from a chronic infection are possible.

Psittacosis (Ornithosis, Parrot Fever).

Source. A rickettsial-like organism, "chlamydia psittaci", causes psittacosis. Approximately 150 cases are reported annually in the United States.

Contraction. This disease is contracted by inhaling "C. psittaci" which is found in feathers and droppings from infected birds. Since the organism becomes less infectious with time, active roosts are of greatest concern. While the disease most often occurs in bird handlers, persons cleaning up bird excrement could contract the disease as well.

Health Effects. Psittacosis is characterized by fever, headaches, and muscle pain, with or without obvious respiratory symptoms. Untreated cases, especially in older patients, can progress to pneumonia and/or generalized toxemia resulting in death.

Other Fungal Diseases. Paracoccidioidomycosis is a serious mycosis among workers in contact with the soil in tropical and sub-tropical regions from Mexico to Brazil. Although little is known about it at present, it is probably acquired by inhaling soil or fungus-laden dust. Other fungal diseases found in soil and/or decaying organic matter--such as aspergillosis, coccidioidomycosis, blastomycosis, and sporotrichosis--are less likely to cause disease in humans.

Rabies

Unlike the diseases listed above, rabies (a rhabdovirus) is not a fungal disease. However, rabid bats may be encountered during cleanup operations.

Source. Rabies is contracted when the virus-laden saliva of an infected animal is introduced into the body by a bite or scratch (very rarely through mucous membranes or a fresh break in the skin). Airborne rabies infection has been demonstrated only in one cave in Texas where millions of bats had roosted for many years.

Contraction. The danger of rabies infection by inhalation is slight, but the danger from handling bats is much greater, especially since infected bats may be present during a cleanup operation. Cleanup personnel should be cautioned to handle bats only with nets and gloves.

Health Effects. The onset of rabies often begins with a sense of apprehension, headache, fever, malaise and indefinite sensory changes. The disease progresses to paralysis, throat muscle spasms when attempting to swallow (causing fear of water or hydrophobia), delirium and convulsions. Death is often from respiratory paralysis. Rabies can be prevented by vaccination during the disease's incubation period. Once symptoms appear, however, death is almost always inevitable.

Representative Cases of Cryptococcosis and Histoplasmosis

Case Studies

As an example of the health threat of mycotic organisms inhabiting bird and bat droppings, four documented cases of human infection are presented here.

Cryptococcosis in a Farm Mechanic

A farm mechanic worked on machinery in a grain-drying building where live pigeons were present. The mechanic developed cryptococcal meningitis and was hospitalized for 8 weeks. The pigeon droppings from the grain-drying building were found to have 24.4 x lO6 colony-forming units per gram. Eventually he recovered fully.

Cryptococcosis Misdiagnosis

Failure to diagnose cryptococcosis can result in fatalities. A 46-year-old man developed a chronic neurologic syndrome after dismantling a steeple. He was treated for tuberculous meningitis and the symptoms went into remission (as they may do for a disseminated infection). One year later he was hospitalized with chronic inflammation of the brain and diagnosed as having cryptococcal meningitis. Treatment at that time with amphotericin B and flucytosine was unsuccessful.

Histoplasmosis Outbreak at an Arkansas Courthouse

Pigeon droppings had accumulated to a depth of one foot on the catwalk around an Arkansas courthouse tower. Cleanup workers shoveled the dry droppings off the catwalk, allowing them to fall four stories to the ground. Air conditioners picked up the falling spore-laden dust and distributed it within the building. Of the 84 employees inside, 52 percent developed fever, cough, chest pain, myalgia, and/or laboratory evidence of histoplasmosis. Twenty-four other cases of histoplasmosis occurred among construction workers and people who visited the courthouse during the cleanup; one individual contracted the disease after visiting for only 10 minutes. Of those exposed that escaped illness, 87.5 percent had been previously infected. However, five people with evidence of previous infection did become ill. It is probable that their previous infection afforded only partial immunity.

Histoplasmosis Outbreak Due to Disturbing a Bird Roost

The potential for histoplasmosis to disseminate downwind is clearly illustrated by an outbreak that occurred in Iowa when the dry soil under a starling roost was bulldozed. People up to one mile away contracted histoplasmosis and the bulldozer operator died after a 7-week illness.

Assessment and Decontamination of Bird and Bat Droppings

Risk Assessment

(1) "Cryptococcus neoformans" is primarily found in pigeon droppings and less often in soil and organic debris. The risk of contracting cryptococcosis is not related to the age of the excrement.

(2) "Histoplasma capsulatum" usually develops only at bird roosts that have existed for 3 years or more. It is uncommon at pigeon roosts. Although "H. capsulatum" grows well in excrement-enriched soil, it cannot form spores under the acidic conditions of fresh droppings. An active bird roost may only produce a few spores. However, when the droppings have dried and/or been leached by rain, massive amounts of spores can be released, especially if the soil is disturbed under dusty conditions. Once established, "H. capsulatum" will remain in the soil under a roost for many years after the birds have abandoned it.

Sampling for Disease Organisms. Sampling is not recommended due to the difficulty, time and expense involved. Laboratory processing of samples may require up to 8 weeks, test procedures are not totally reliable (the disease organisms may be present but not detected) and interpretation of the results is difficult. Sampling is generally not necessary if the cleanup precautions outlined in this guide are followed.

Decontamination

"Cryptococcus neoformans" is sensitive to alkali. Areas of suspected contamination can be treated with an alkaline wash consisting of 500 grams of hydrated lime and 18 grams of sodium hydroxide per 12 liters of water. Commercial disinfectant products of similar alkalinity may also be used.

Decontamination of droppings and associated soil for control of "histoplasma capsulatum" is not recommended. Decontamination with formalin presents a health hazard and no other effective material is available. Decontaminated soil is subject to reinfestation as long as the nutrients that enabled the fungus to establish itself are still available. Information on decontamination with formalin is included in Appendix C for those situations, such as construction sites, where extensive and/or prolonged soil disturbance with attendant exposure risks may occur.

Cleanup and Removal of Bird and Bat Droppings

Cryptococcosis and histoplasmosis infections typically occur by inhaling the pathogenic spores through the nose and mouth. Therefore, bird droppings are most dangerous when they are dry and subject to becoming airborne as a fine dust, particularly when disturbed by sweeping or scraping. Although germicides could be applied to accumulated droppings prior to cleanup, their effectiveness is not proven. Safe cleanup is based on protection from spore inhalation and minimization of spore dispersal. If at all possible, coordinate cleaning efforts with the installation of a modern bird proofing system. Assume that a health hazard is present whenever bird and bat droppings are disturbed and observe the following precautions:

Protection of Workers from Infective Organisms.

(1) **Preliminary Consultation.** Prior to disturbing accumulated droppings, inform the occupational medicine physician of the proposed activity and consult with an industrial hygienist for advice on personal safety measures such as protective clothing and the proper selection, use and fitting of respirators.

(2) **Breathing Protection**. When working with accumulated droppings, wear a NIOSH-approved full-face respirator with high efficiency particulate air (HEPA) filters capable of excluding particles of 0.3-micron size or a supplied air respirator with full-face piece. Dust and particle masks will not provide adequate protection and are not approved for this use.

(3) **Protective Clothing.** Wear disposable coveralls, gloves, boots and hats to protect personal clothing from contamination with infective organisms. Seal the glove/sleeve and boot/leg interfaces with duct tape before entering the worksite. Before leaving the work site, vacuum the protective coveralls, boots and gloves using a HEPA vacuum, then walk to an excrement free area, remove the protective clothing and place it in plastic bags prior to removing respiratory protection. Treat disposable clothing believed to be contaminated with disease agents as an infectious waste.

(a) No disposable work clothing and respirators should be removed, placed in a plastic bag and sealed. These items must be disinfected in the bag before final cleaning and reuse. Workers must not wear their own personal street clothing under the disposable coveralls.

(b) If the disposable coveralls or other protective clothing are torn, the worker(s) must shower prior to putting on their street clothes. It is recommended that workers shower and thoroughly wash their hair at the end of their shift.

Application of Water

Although droppings are usually easier to clean up when they are dry and crusted, saturating them with water prior to removal is recommended to prevent the debris and any pathogens from becoming airborne. This should be done with a low-velocity mist spray. Using high pressure and/or a concentrated stream, such as from a hose nozzle, may scatter the droppings before they can be adequately wetted. However, hosing may be used for removing small amounts of recently deposited droppings from sidewalks and pavement. A portable, hand pressurized sprayer is satisfactory for applying limited amounts of water.

Nonmetallic Tools

On historic structures use only non-metallic tools such as plastic spatulas and brushes with natural fiber or nylon bristles to remove droppings. Do not use tools that can easily damage building surfaces, such as coarse wire brushes.

Public Protection.

Do not perform bird excrement removal on public buildings during normal working hours. If possible, schedule the removal for weekends or other periods of minimum building use. Protect interior air by closing all heating and cooling system air intakes during the cleanup (shut down the entire system if possible). Unless droppings are inside the building itself, perform all work from the outside of the building. Provide barricades and signage to keep the public clear of the work site during all operations.

Disposal

(1) Double bag the droppings and associated soil in 3 mil or thicker plastic bags, close the bags securely, and transport them directly to a landfill to be buried. If the droppings have been proven to contain cryptococcus neoformans and/or histoplasma capsulatum they may be incinerated. Do not place the bags in a dumpster or leave at a collection point for later pickup as they could be torn during handling and release their potentially infectious contents. Wear protective clothing and equipment when collecting the bird and bat droppings for final disposal.

(2) You may clean up small amounts of fresh droppings by scraping or hosing with water.

The best technique to prevent infection with “cryptococcus neoformans” or “histoplasma apsulatum” is to provide proper respiratory protection to exposed workers and to properly handle the droppings as described in this guide.

Sampling to Determine Health Hazard

Sample Processing

Droppings, soil, etc. may be sampled to determine whether or not they are infested with "cryptococcus neoformans" or "histoplasma capsulatum" prior to initiating cleanup. A comprehensive sampling protocol, which includes site safety and health protection, should be developed for each site to be sampled.

The samples must be processed by a laboratory that has experience culturing such fungi. For information on laboratories that may be able to perform isolations for these organisms, contact: Centers for Disease Control (CDC), U.S. Public Health Service, Center for Infectious Diseases, Division of Mycotic Diseases, 1600 Cliston Road, Atlanta, GA 30333, (404) 639-3158

Contact the processing laboratory to ascertain the number of samples needed, how to collect and submit them, and other sampling protocol details. The sampling process will vary depending on the situation and is beyond the scope of this technical guide. However, the procedures outlined below may be used as an aid in preliminary planning.

Fair Representation

Care must be exercised to ensure that a fair representation of the material is collected. Typically, 6-ounce samples are required, ranging from a minimum of 2 per 100-square feet to a maximum of about 40 for areas of one acre or more. Each 6-ounce sample should be a composite of material from various locations within the sample site.

For example, if one sample is to represent a 50-square foot quadrant, the 6 ounces should be collected from various locations within that sample quadrant. To prevent cross contamination, each individual sample must be collected with a separate sterile tongue depressor or spoon and placed into its own clean plastic bag. Each sample should be labeled on the outside of the bag. A map should also be prepared that identifies the site and the sample locations within the site.

Decontamination of Excrement and Contaminated Soil

Introduction

Situations may be encountered where site decontamination is necessary to protect personnel not directly involved in cleanup or removal of the bird or bat excrement.

The removal or disturbance of pathogen-contaminated bird droppings, bat droppings or soil contaminated with bird droppings can present a health hazard to those doing the work and the general population downwind of the operation. The safety of workers and the general population can be assured only by killing the causative agents of human diseases prior to activities, which could cause these organisms to become airborne.

The decontamination procedures described herein are hazardous to the personnel doing the work and any persons nearby. The procedures also destroy beneficial organisms in the treated soil. Decontamination should be undertaken only when exposure to the pathogens in excrement or soil cannot be minimized by other means.

Selection of Decontaminant

The CDC recommends the use of formalin solutions for killing all viable stages of cryptococcus neoformans and histoplasma capsulatum. At this time, formalin is the decontaminant of choice. It is the only material that has been proven through laboratory analysis and field experience to effectively kill these pathogens in the environment. In addition to killing these agents on contact, formalin vapors also penetrate cracks and crevices, thereby reaching areas, which may not have otherwise been contacted. However, soil treated with formalin is readily recolonized by "H. capsulatum" due to elimination of competing organisms.

Use of Formalin to Decontaminate Bird and Bat Droppings or Soil

Formulation of Disinfectant

In order to be effective, the formalin solution must completely saturate the material being decontaminated. This is prepared by diluting commercially available formaldehyde (which contains 37-40 percent by weight of formaldehyde gas in water, stabilized with 10-15 percent methanol) with water to create a 5-percent, by volume, formalin solution.

Environmental Temperature Considerations

Decontamination should be conducted when the temperature of the material being decontaminated is between 62° F and 90° F. Formalin is less effective at temperatures outside of this range.

Application Rates

(1) The CDC recommends the following application rates. One third of these quantities of 5- percent formalin solution is to be applied during each of three treatments:

   (a) Vertical walls - one gallon per 150-square feet.

   (b) Horizontal surfaces (except when bird droppings are on soil): one gallon per 6-square feet

   (c) Bird droppings on soil: one gallon per 1-square foot.

(2) It is important to realize that these quantities are guidelines. The proper amount of formalin to use is that which completely saturates the contaminated material, and this will vary depending on the situation. However, exercise care to avoid formalin runoff.

Application Procedure

The most effective formalin saturation of infected material occurs if the formalin is applied in three separate applications.

(1) In areas where the accumulation of bird droppings is shallow, formalin should be applied on three successive days.

(2) Where bird excrement is deep, the formalin should be applied on alternate days to enhance the probability of contact with all of the infected material.

(3) It may be necessary to turn, probe or aerate the droppings/soil between the second and third applications to gain complete saturation. Perform any manipulation of the infected material in a manner that will liberate as few organisms into the air as possible. Spray formalin during the manipulation to help limit the number of viable organisms that may become airborne and increase saturation. Even building surfaces with very little or no bird droppings visible may be contaminated and should, therefore, be treated. Disinfect contaminated equipment by soaking in 5-percent formalin for 15 minutes.

Disinfection of Soil

Pathogenic organisms have been recovered from a soil depth of 6 to 8 inches. Therefore, if soil is contaminated with “histoplasma capsulatum”, it should be saturated with formalin to this depth.

State Regulations

Consult state regulatory authorities to determine if there are state restrictions on formalin application.

- Protection of workers from formaldehyde and infective organisms

  (1) Pre-cleanup consultations.

  (2) Consult an occupational medicine physician for guidance on medical surveillance of cleanup personnel.

  (3) Consult an industrial hygienist prior to disturbing deposits of bird and bat droppings for advice on matters of personal safety such as protective clothing and the proper selection, use, and fitting of respirators.

  (4) Contact an industrial hygienist to determine formalin breathing zone concentrations so appropriate respirator selection may be made.

  a) Breathing zone concentrations that do not exceed 7.5-parts per million (ppm) formaldehyde, use a full face-piece chemical cartridge respirator with a formaldehyde cartridge(s) and high-efficiency filter(s) capable of excluding particles of 0.3-micron size (29 CFR 1910.1048).

  b) For concentrations up to 75 ppm, provide one of the following: a full-face gas mask with industrial-size formaldehyde canister and filter capable of excluding particles of 0.3-micron size, or a type C supplied-air respirator, pressure demand or continuous flow type, with a full face piece, hood or helmet (29 CFR 1910.1048).

  c) For breathing zone concentrations greater than 75 ppm formaldehyde or unknown concentration, provide a self-contained breathing apparatus (SCBA) with positive pressure full face piece (29 CFR 1910.1048).

  d) Unless the canister contains a NIOSH-approved end-of- service-life indicator to show when breakthrough occurs, canisters used in atmospheres up to 7.5 ppm (10 x PEL) shall be replaced every 4 hours and industrial-sized canisters used in atmospheres up to 75 ppm (100 x PEL) shall be replaced every 2 hours or at the end of the work shift, whichever is sooner (29 CFR 1910.1048).

Protection During Decontamination

(1) The National Institute for Occupational Safety and Health (NIOSH) recommends that "formaldehyde be handled in the workplace as a potential occupational carcinogen" and that "as a prudent public health measure, engineering controls and stringent work practices be employed to reduce occupational exposure to the lowest feasible limit" (appendix A, reference 16). Formaldehyde vapor is intensely irritating to the eyes, nose and throat. It may cause skin irritation and is harmful if swallowed.

(2) To protect against formalin contamination, wear formalin-impervious hat, coat, pants, boots and gloves. Immediately remove non-impervious clothing that becomes contaminated. Wash immediately when skin becomes contaminated. Provide a "quick drench eyewash" unit at the work site.

(3) When collecting the bird and bat droppings for final disposal, protective clothing and equipment is necessary to protect personnel against the possibility that decontamination was not completely successful or the possibility that formalin is still present:

(a) If formalin is present in quantities that could wet garments, formalin-impervious clothing and appropriate respiratory protection (paragraph C-4 a) must be worn.

(b) If formalin is not present, disposable coveralls, boots and hats should be worn to protect from contamination of personal clothing with infective organisms.

(4) After work, remove protective clothing at the work site prior to removing respirator protection. If the protective clothing is believed to be contaminated with disease agents, treat it as an infectious waste.

Determining Decontamination Effectiveness

Generally, evaporation and inactivation of formalin occurs in 2 to 4 days. Prior to physically collecting and disposing of the droppings, collect samples of the droppings/soil and have them retested to make sure that the decontamination was effective. In order to ensure that all the formalin has dissipated, wait for one week after the last formalin application before taking post treatment samples.

a) If decontaminated pigeon droppings are reinoculated with "cryptococcus neoformans", the organism could recolonize them before the laboratory results are received. Therefore, if there is confidence that the decontamination was done correctly and birds cannot be excluded from the treated area, it would be prudent to commence the cleanup immediately rather than wait for the completion of laboratory tests to confirm that decontamination was successful.

b) Following the cleanup, sample decontaminated building surfaces to ensure there are no infective organisms present before using the building.

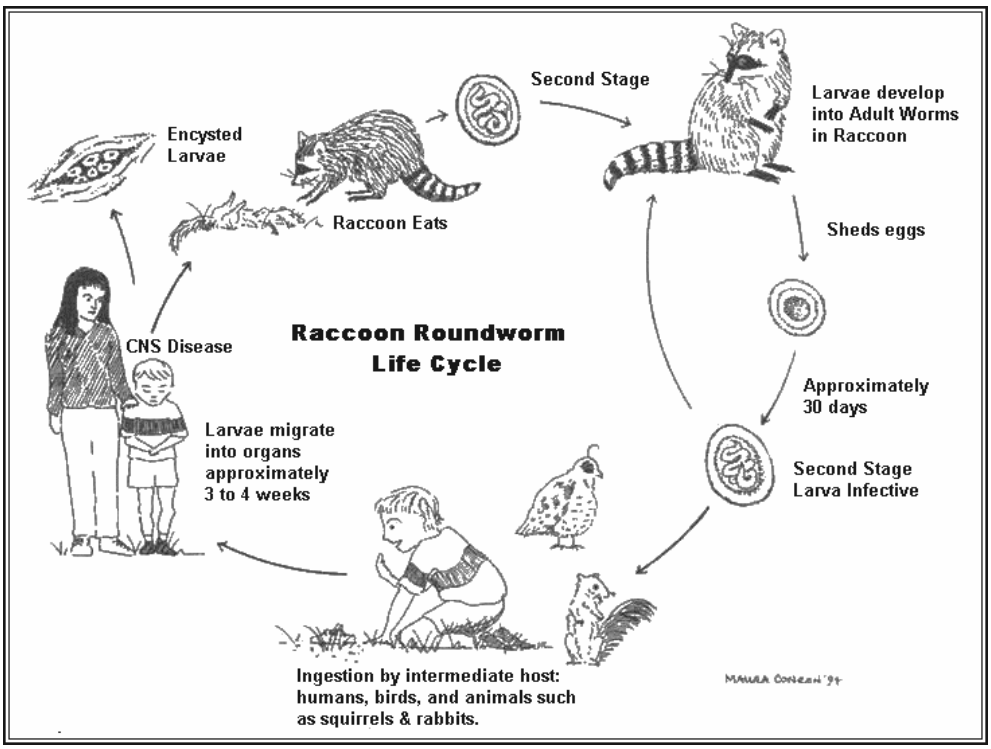
c) "Histoplasma capsulatum" can also reinfect decontaminated soil if the bird roost is not removed. However, the rate with which decontaminated soil is typically reinfected is slow enough to allow for testing of the soil to determine the effectiveness of the decontamination procedures.

d) Soil that has been treated is not permanently sterilized and normal vegetation and microorganisms will recolonize the area.

Disposal

After decontamination with formalin solution, the bird and bat droppings should be double bagged and disposed of in a sanitary landfill.

Raccoon Roundworm (Baylisascaris Procyonis)



Raccoon Roundworm

Raccoons are the normal host for the parasitic nematode or roundworm known as Baylisascaris procyonis. It is the common large roundworm found in the small intestines of raccoons. Cotton rats are believed to be a possible intermediate host. Adult raccoons are susceptible only to larvae from rodent tissue while young raccoons are susceptible to infection by egg ingestion where larva hatches in small intestine with migration apparently limited to the wall of small intestine. This roundworm is zoonotic, meaning it can pass from animal to animal (or human). In the raccoon, these worms normally produce no symptoms in the infected host raccoon, other than possibly intestinal obstruction and apparently do little or no harm to adult raccoons. In the Midwest, prevalence is 70% for adult and 99% for baby raccoons according to the University of Missouri College of Veterinary Medicine. Adult worms measure 15 to 20 cm in length and 1 cm in width, tan-white in color, cylindrical and tapered at both ends. The eggs are ovoid, brown, with finely pitted outer shell, measure 70 x 55 microns and are passed in one-cell stage. The eggs embryonate into larva outside of host.

Transmission

The disease is spread through the eggs contained in the feces of an infected raccoon, by ingesting either raccoon feces or things that have been in contact with raccoon feces. Adult female roundworms produce thousands to millions of eggs per day. After the eggs are shed in feces, they embryonate into a larval stage in about 3-4 weeks. They remain viable in the environment for months to over 5-6 years. When ingested, the larvae migrate and reach lengths of 1.5 to 2.0 mm.

Signs and Symptoms

Clinical and pathological symptoms occur when an abnormal host (an animal other than the raccoon) becomes infected. It can cause a very rare disease called visceral larva migrans (VLM) in humans and other animals, as well as ocular larva migrans (OLM) and neural larva migrans (NLM). If ingested by an abnormal host, the eggs penetrate the small intestine (which they apparently do not do in raccoons) and undergo an aberrant migration through the body. The eggs hatch, and the larvae migrate to the brain, eyes and other organs. The parasite has been implicated in cases of serious eye disease or central nervous system disorders and infection can cause death or paralysis depending on the location in the body and number of worms.

Human toxocarosis via pets vs. baylisascaris

It should be noted that visceral larva migrans and ocular larva migrans in humans (and other animals) can also be caused by feces of other animals - most notably pet dogs and cats. Human infection with the toxiocaris larvae of canine or feline roundworms is known collectively as toxocariasis. All cases of toxocariasis come from pets, according to the Texas Department of Health, Division of Zoonosis Control, which states an estimated 10,000 new cases of roundworm infection occur in children every year, most often as a result of eating dirt contaminated with animal feces. Most human infections are mild enough to go unnoticed and apparently produce no permanent damage. However, sometimes infection results in severe and even fatal disease. Common symptoms include abdominal pain, headache, weakness, lethargy and wheezing. Due to the public health significance, it is important to distinguish baylisascaris from toxocara. Not to minimize the risk, but in many states raccoons are being systematically euthanized because of the panic over perceived danger of transmission of the raccoon roundworm to humans as a result of two documented cases (one a fatality) to date, including a case in 1998 where a child in Pacific Grove, California was infected by eating bark on firewood that had been contaminated by raccoon feces. Over 177 local wild raccoons were systematically executed before a lawsuit by the city's concerned citizens brought the killings to a halt. Eradication of raccoons will not prevent the very rare disease visceral larva migrans in humans. However, education and some common sense might.

Prevention

Contact with wild raccoons or exposure to their feces should be avoided. Hunters, trappers and wildlife rehabilitators should wash their hands after handling raccoons. Wild raccoons should be discouraged from inhabiting buildings or other areas used by humans. Prevention also consists of never touching or inhaling raccoon feces, using rubber gloves and a mask when cleaning cages (or attics, etc.) which have been occupied by raccoons, burying or burning all feces, keeping children and pets away from raccoon cages and enclosures, and disinfecting cages and enclosures between litters. All cages and nest boxes used for housing raccoons should not be used for any other animals. They should remain strictly for raccoon use. Do frequent fecal screens on all raccoons in your possession. If positive, your wildlife vet may recommend de-worming your raccoon via treatment with an anthelmintic such aspPanacur (brand of fenbendazole) at .1 cc per pound of body weight each week until release or other accepted treatment. Remember that raccoons may have fecal matter on their paws and bodies and take appropriate safeguards. In order to guard against human toxocariasis, have all pets (dogs and cats particularly) dewormed under a vet's supervision and take the same precautions with their feces.

Treatment

While there is no known treatment for VLM or NLM, there are several drugs that can treat the parasite in raccoons. They include piperazine, pyrantel pamoate, or fenbendazole. Following is an abstract from a study testing the efficacy of six anthelmintics against luminal stages of baylisascaris procyonis in naturally infected raccoons (Procyon lotor) [JOURNAL. Bauer, C; Gey, A. Veterinary Parasitology, v.60, n.1-2, 1995:155-159] "Abstract: The efficacy of six anthelmintics against natural infections of Baylisascaris procyonis in raccoons (n = 7 per drug) was determined in a series of critical tests. The drugs were given via moist cat food as a single dose or once daily for three consecutive days. Raccoons treated with pyrantel embonate (1 times 20 mg base kg-1 bodyweight (bwt.)), ivermectin (1 times 1 mg kg-1 bwt.), moxidectin (1 times 1 mg kg-1 bwt.), albendazole (3 times 50 mg kg-1 bwt.), fenbendazole (3 times 50 mg kg-1 bwt.) or flubendazole (3 times 22 mg kg-1 bwt.) expelled 1-198, 2-24, 2-14, 3-80, 2-70, or 2-35 B. procyonis stages, respectively, within the faeces. No roundworm was detected in any raccoon at post mortem examinations 7 days after the end of treatment. These results suggest that any of the six anthelmintics can be used at the dose rates tested in a deworming program for captive raccoons."

Notes:

Notes:

Polychlorinated Biphenyl (PCB)

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Polychlorinated Biphenyl (PCB)

Balestrieri employees may, in the course of their normal working environment, be exposed to PCBs.

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979. They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical; heat transfer; hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications.

Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include:

- Transformers and capacitors.
- Other electrical equipment including voltage regulators, switches, reclosers, bushings and electromagnets
- Oil used in motors and hydraulic systems
- Old electrical devices or appliances containing PCB capacitors
- Fluorescent light ballasts
- Cable insulation
- Thermal insulation material including fiberglass, felt, foam, and cork
- Adhesives and tapes
- Oil-based paint
- Caulking
- Plastics
- Carbonless copy paper

The PCBs used in these products were chemical mixtures made up of a variety of individual chlorinated biphenyl components, known as congeners. Most commercial PCB mixtures are known in the United States by their industrial trade names. The most common trade name is Aroclor.

Health Effects of PCBs

PCBs have been demonstrated to cause a variety of adverse health effects. PCBs have been shown to cause cancer in animals. PCBs have also been shown to cause a number of serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, endocrine system and other health effects. Studies in humans provide supportive evidence for potential carcinogenic and non-carcinogenic effects of PCBs. The different health effects of PCBs may be interrelated as alterations in one system may have significant implications for the other systems of the body.

Prior to the 1979 ban, PCBs entered the environment during their manufacture and use in the United States. Today PCBs can still be released into the environment from poorly maintained hazardous waste sites that contain PCBs, illegal or improper dumping of PCB wastes, leaks or releases from electrical transformers containing PCBs and disposal of PCB-containing consumer products into municipal or other landfills not designed to handle hazardous waste. PCBs may also be released into the environment by the burning of some wastes in municipal and industrial incinerators.

Once in the environment, PCBs do not readily break down and therefore may remain for long periods of time cycling between air, water and soil. PCBs can be carried long distances and have been found in snow and sea water in areas far away from where they were released into the environment.

Employees should have adequate training before undertaking work where PCBs are involved. The required training includes, but is not limited to:

- Safe handling of items containing PCBs.
- PCB hazards
- Cleanup of PCB spills
- Required personal protective equipment, including respirator training.
- Procedures for summoning emergency response services

Basic procedures employees should use when involved in an area with PCBs present include, but are not limited to:

- Always wear the appropriate PPE, including face masks, foot covering and respirators.
- Never eat or drink in an area where PCBs are present.
- Avoid skin and eye contact

Immediate steps to be taken for a PCB spill include:

- Block off any area where the PCB contamination occurred, using tape or rope and post signs.
- Avoid walking on or touching any surface contaminated with PCBs.
- Promptly notify the hazardous materials emergency response team.
- Personal protective equipment must be put on immediately

Employees who become contaminated with PCBs should:

- Immediately wash the affected area with soap, water, and a scrub brush and clean well under the fingernails. Dispose of items used in the washing effort in a plastic bag to be disposed of as hazardous waste.
- Inform medical personnel the type, quantity and physical state of the PCB exposure.
- Remove and place all contaminated clothing in a plastic bag to be disposed of as hazardous waste

Disposal

PCBs are to be disposed of the same way as all hazardous waste. Balestrieri subcontracts for disposal of PCB containing waste for both in state and out of state shipments. Drums with labels are provided and are shipped with a bill of lading. Drums are to be placed as close as possible to where they will be picked-up. Employees are to follow the prescribed procedures for disposal specific to the job site.

Notes:

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Scaffold Safety Program

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Scaffold Safety Program

Purpose

Balestrieri Environmental has developed a program for scaffold safety to ensure a safe work environment and to protect the health and safety our employees. This program is written in accordance with the requirements of Occupational Safety and Health Administration (OSHA) 29 CFR 1926 Subpart L.

Scope

This policy pertains to all Balestrieri Environmental employees and establishes safety requirements for the proper construction, inspection, maintenance, operation, and use of scaffolds on Balestrieri Environmental jobsites.

Policy

All scaffolds used in construction, renovation, repair (including painting and decorating), and demolition shall be erected, dismantled and maintained in accordance with this program.

Authority and Responsibility

Balestrieri Environmental is responsible for:

1. Reviewing this program to ensure compliance with current regulations;
2. Reporting any questionable conditions that are discovered to the responsible department; and
3. Ensuring all affected employees are trained in accordance with this program.

Superintendents are responsible for:

1. Ensuring all affected employees follow the prescribed practices within this program;
2. Designating a competent person;
3. Designating a qualified person to design and supervise during the erection, use and disassembling of scaffolding; and
4. Ensuring all inspection.

Employees affected by this program are responsible for complying with the practices within the Scaffolding Program.

The competent person shall be trained in accordance with the Occupational Safety and Health Administration and responsible for:

1. Directing employees who erect, dismantle, move or alter scaffolding;
2. Determining if it is safe for employees to work from a scaffold during storms or high winds, and ensure that a personal fall arrest system is in place;
3. Training employees involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolding to recognize associated work hazards;
4. Inspecting scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect the structural integrity, and to authorize prompt corrective action;
5. Inspecting ropes on suspended scaffolds prior to each work shift and after every occurrence which could affect the structural integrity, and to authorize prompt corrective actions;
6. For suspension scaffolds, evaluating direct connections to support the load to be imposed;

7. For erectors and dismantler's, determining the feasibility and safety of providing fall protection and access; and
8. For scaffold components:
    a. Determining if a scaffold will be structurally sound when intermixing components from different manufacturer's; and
    b. Determining if galvanic action has affected the capacity when using components of dissimilar metals.

Qualified persons shall be responsible for:

1. Designing and loading scaffolds in accordance with design specifications;
2. Training employees working on the scaffolds to recognize the associated hazards and understand procedures to control or minimize those hazards; and
3. For suspension scaffolds:
    a. Designing platforms on two-point adjustable suspension types that are less than 36 inches wide to prevent instability;
    b. Making swaged attachments and spliced eyes on wire suspension ropes; and
    c. Designing components in accordance with design specifications.

General Requirements for Scaffolds

Competent Person

Projects which require employees to use scaffolds must designate a "competent person" to oversee erecting, securing, and dismantling of scaffolds. The competent person must understand the rules, and regulations as they pertain to the scaffold he/she oversees, as well as conduct scaffold inspections and manage daily activities involving scaffold use.

Capacity/Loads

Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.

Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance the Occupational Safety and Health Administration (OSHA) 29 CFR

1926.451 "General Requirements for Scaffolds" and 29 CFR 1926.452 "Additional

Requirements Applicable to Specific Types of Scaffolds".

Stationary scaffolds over 125 feet in height and rolling scaffolds over 60 feet in height shall be designed by a professional engineer. All equipment shall be inspected to see that it is in good condition and is serviceable. Damaged or deteriorated equipment shall not be used.

Platforms

Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows;

- Platforms shall be entirely planked and decked with space not more than one inch wide between the platforms and uprights;
- The platform shall not deflect more than 1/60 of the span when loaded;
- All platforms shall be kept clear of debris or other obstructions that may hinder the working clearance on the platform;
- Wood planks shall be inspected to see that there are graded for scaffold use, are sound and in good condition, straight grained, free from saw cuts, splits and holes;
- Platforms and walkways shall be at least 18 inches in width. When the work area is less than 18 inches wide, guardrails and/or personal fall arrest systems shall be used;
- Where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches unless the platforms are nailed;
- The front edge of all platforms shall not be more than fourteen inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used;
- A platform greater than 10 feet in length shall not extend over its support more then 18 inches, unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end;
- Wood surface shall not be covered with opaque finishes, other than the edges for making identification;
- Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating shall not obscure the top or bottom wood surfaces; and
- Each end of the platform unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least six inches.

Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components made of dissimilar metals shall not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component.

Criteria for Support Scaffolds

Supported scaffolds are platforms supported by legs, outriggers beams, brackets, poles, uprights, posts, frames, or similar rigid support. The structural members, poles, legs. posts, frames, and uprights, must be plumb and braced to prevent swaying and displacement.

Supported scaffolds with a height to base width ratio of more than 4:1 must be restrained by guying, tying, bracing or an equivalent means.

The following placements must be used for guys, ties, and braces;

- Install guys, ties, or braces at the closest horizontal member to the 4:1 height and repeat vertically with the top restraint no further than 4:1 height from the top;
- Vertically — every 20 feet or less for scaffolds less than three feet wide and every twenty-six feet or less for scaffolds more than three feet wide; and
- Horizontally — at each end; at intervals not to exceed 30 feet from one end.
- Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation and shall include the following;
- Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement;
- Unstable objects shall not be used to support working platforms;
- Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use; and
- Fork-lifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied.

Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

Access Requirements

Access shall be provided when scaffold platforms are more than 24 inches above or below the point of access. Direct access is acceptable when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surfaces. Cross braces shall not be used as a means of access.

Type of accesses which are permitted:

- Portable ladders tied off to the structure;
- Hook-on ladders;
- Attachable ladders
- Stairways;
- Stair towers;
- Ramps and walkways; or
- Integral prefabricated frames.

When erecting or dismantling supported scaffolds, a safe means of access shall be provided when a competent person has determined the feasibility and analyzed the site conditions.

Use Requirements

The use of shore scaffolds and lean-to-scaffolds is strictly prohibited. All employees are prohibited from working on scaffolds covered with snow, ice or other slippery materials. Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or a wind screen.

Scaffold and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence with could affect a scaffold's structural integrity. Any part of a scaffold damaged or weakened such that its strength is less than that required in the section 1926.451(a) shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired. Any defects found on the scaffold are mandated to be tagged and employees should abide by the tags found on defective scaffolds. Unsafe equipment or conditions must be tagged out by a competent person, and must be complied with. Scaffolding systems are to only be modified by qualified and competent personnel.

Scaffolds shall not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement, or for mobile scaffolds

Clearance Distances between Scaffolds and Power Lines

The following table provides the clearance distances between scaffolds and power lines, or any other conductive material, while being erected, used, dismantled, altered or moved.

Table I

Insulated Line Voltage	Minimum Distance	Alternative
Less than 300 volts 300 to 50 kv More than 50 kv	3 feet 10 feet 10 feet General Rule: 0.4 inches for each 1 kv over 50kv	Two times the length of the line insulator, but never less than 10 feet
Uninsulated Line Voltage	**Minimum Distance**	**Alternative**
Less than 50 kv More than 50 kv	10 feet 10 feet plus General Rule: 0.4 inches for each 1 kv over 50kv	Two times the length of the line insulator, but never less than 10 feet

EXCEPTION: Scaffolds and materials may be closer to power lines than specified where such clearance is necessary for performance of work and only after the utility company or electrical system operator has de-energized or relocated the lines.

Fall Protection and Guardrails

Fall protection includes guardrail systems and personal fall arrest systems.

Fall Protection

Personal fall arrest systems include harnesses, components of the harness/belt such as Dee-rings, and snap hooks, lifelines, and anchorage point. Employees working on scaffolds ten (10) feet or more above ground/floor level shall use fall protection in accordance with Balestrieri Environmental Fall Protection Program.

Guardrails

All scaffolds more than six feet above the lower level shall protect employees with guardrails on each open side of the scaffold. Guardrails shall be installed along the open sides and ends before releasing the scaffold for use by the employees, other than erection or dismantling crews. Refer to Appendix A of the OSHA Standard 1925.451 for specific requirements for the construction of guardrails.

Guardrails are not required when:

- The front end of all platforms are less than 14 inches from the face of the work; and
- When employees are plastering and lathing 18 inches or less from the front edge.

Materials such as steel or plastic banding shall not be used for top rails or midrails.

The following chart illustrates the type of fall protection required for specific scaffolds;

Table 2

Types of Scaffold	Fall Protection Required
Aerial Lifts	Personal fall arrest system
Boatswain's chair	Personal fall arrest system
Catenary scaffold	Personal fall arrest system
Crawling board	Personal fall arrest system, or a guardrail system or by a ¾ inch diameter grab-line or equivalent handhold securely fastened beside each crawling board
Float scaffold	Personal fall arrest system
Ladder jack scaffold	Personal fall arrest system
Needle beam scaffold	Personal fall arrest system
Self-contained scaffold	Both a personal adjustable scaffold arrest system and guardrail system
Single-point and two-point suspension scaffolds	Both a personal fall arrest system and guardrail system
Supported scaffolds	Personal fall arrest system or guardrail system
..	Personal fall arrest system or guardrail
All other scaffolds not specific above	systems that meet the required criteria

Falling Objects

To protect employees from falling hand tools, debris, and other small objects, install toe boards, screens, guardrail systems, debris nets, catch platforms, canopy structures, or barricades. In addition, each employee must wear a hard hat.

Training

All employees who perform work on a scaffold shall be trained annually by a person qualified to recognize the hazards associated with the type of scaffold being used and the procedures to control or minimize those hazards.

Employees who work, erect, dismantle, move, operate, repair, maintain, or inspect scaffolds shall be trained in the following;

- Nature of electrical, fall hazards and falling object hazards in the work area;
- The correct procedures for dealing with electrical hazards;
- Proper use of scaffolds;
- Proper handling of materials on scaffolds;
- Proper erecting, maintaining and disassembling of fall protection systems;
- Proper construction, use, placement and care in handling of scaffolds; and
- Maximum intended load and load-carrying capacities of scaffolds used.

Employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold shall be trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable;

- The nature of scaffold hazards;
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question; and
- The design criteria, maximum intended load-carrying capacity and intended use of the scaffold.

Retraining

Retraining shall be conducted when there is reason to believe that the employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds.

Retraining is required in at least the following situations;

- Where changes at the worksite present a hazard about which an employee has not been previously trained; or
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or
- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

Scaffold Checklist

Are your scaffolders properly certificated?

You must make certain that anyone constructing, or directly supervising the workers constructing any scaffold from which a person or materials could fall more than 4 meters, has a valid certificate of competency appropriate to that type of scaffold.

This also applies to any alterations to the scaffold or dismantling of the scaffold. Insist that the scaffolders show you their certificates. Keep an up-to-date site register of certificate holders.

Is the scaffold strong enough for the loads?

Bricklayers, stonemasons, concreters and demolition workers need heavy-duty scaffolds, which can safely support up to 675 kg per platform per bay. Carpenters and general trades may need at least medium duty scaffolds, which can safely support up to 450 kg per platform per bay. Light duty scaffolds are limited to 225 kg per platform per bay.

In estimating loads on scaffold platforms, a person is assumed to weigh 80 kg. Check the supplier's information for the type of scaffolding systems you are using.

Is the scaffold stable?

Scaffolds can collapse if they are built on soft ground without timber soleplates to properly distribute the load, if they are too close to trenches or excavations, if they are not properly braced and tied to the supporting structure or if they are badly out of level.

Does the scaffold protect the workers and other people?

Planks should be genuine scaffold planks in good condition, of uniform thickness (to prevent trip hazards) and secured against uplift. Platforms should be fully decked across their full width and free of gaps. All platforms higher than 2 meters should have guardrails, midrails and toe boards (or brick guards) fixed to each open side and end. Where debris from the work can cause danger, it may be necessary to sheet the scaffold in shade cloth. Never use hessian because it can very easily catch fire.

Is there safe access to every scaffold platform?

Properly constructed temporary stairways or ladder access is needed to all working platforms. Climbing up and down the scaffold framework is very dangerous. Ladders should be securely fixed to prevent movement, pitched at a gradient not less than 1 in 4 nor more than 1 in 6, and they should extend at least 900 mm above the platform so they can be safely climbed.

Are scaffolds a safe distance from power lines?

No part of a metal scaffold should be closer than 4 meters from any live power lines.

Are your scaffolders working safely?

While it is under construction, the scaffold should be isolated from other workers and the general public. Scaffolders' tools should be stowed in holders on their scaffold belt. Scaffolders should work from a full deck of planks whenever possible. They should fix a guardrail for their own protection as they go, leaving it in place until that part of the scaffold is dismantled. Scaffolders working underneath should wear safety helmets. On large jobs, they should have the scaffolding equipment crane lifted, or they should use a winch or gin wheel to reduce manual handling risks.

Are your scaffold users working safely?

Workers must use the scaffold safely. They must not overload the platforms or store material in a dangerous way where it could be knocked off the scaffold. Clear access should be maintained along the full length of platforms. They should not climb on guardrails to get extra height. They should not make the scaffold unsafe by removing planks, ties or guardrails.

Are your scaffolds being regularly inspected?

You must not allow work to start from a scaffold until the construction of the scaffold is complete. Get the scaffolder in charge of the work to fill in a handover certificate and keep it on site until the scaffold has been dismantled. Make sure a certificated scaffolder or other competent person inspects all alterations or additions to the scaffold. Have a thorough inspection done at least every month and keep a copy of the inspection record on site. Get any necessary repairs to the scaffold done before it is put back into use.

Notes:

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Traffic Flagging

1538 Country Club Parkway, Elkhorn, Wisconsin 53121-3999 *(262) 743-2800 • (262) 743-2810 (fax)*

www.Balestrierigroup.com *Toll Free (800) 453-2965*

Green Bay Wisconsin	*Madison Wisconsin*	*Milwaukee Wisconsin*	*Chicago Illinois*	*Rockford Illinois*

Traffic Flagging

Make Sure They See You

- Motorists must be able to see you. Wear your safety required fluorescent vest.
- As a flag person, you should understand what your work operation involves – so that you know what to anticipate when directing traffic.
- Employees should be properly dressed. Footwear is important. Pavement can get very hot or very cold – depending upon the weather. Sturdy safety-toed work boots are mandatory.
- Depending on state requirements, paddles or flags of the correct size must be used. Flags should be at least 24" square.
- There is only one right way to signal traffic, while there are many wrong ways. See below for standardized signals.
- Only designated flag persons should be directing traffic. These individuals must be alert to traffic conditions and the construction operation at all times.
- Never turn your back on traffic.
- Flag persons should be courteous but firm with the public at all times.

Flagging Procedures

The following methods of signaling should be used:

To Stop Traffic

The flagger shall face traffic and extent the flag horizontally across the traffic lane in a stationary position so that the full area of the flag is visible hanging below the staff. For greater emphasis, the free arm may be raised with the palm toward approaching traffic.

When it is Safe of Traffic to Proceed

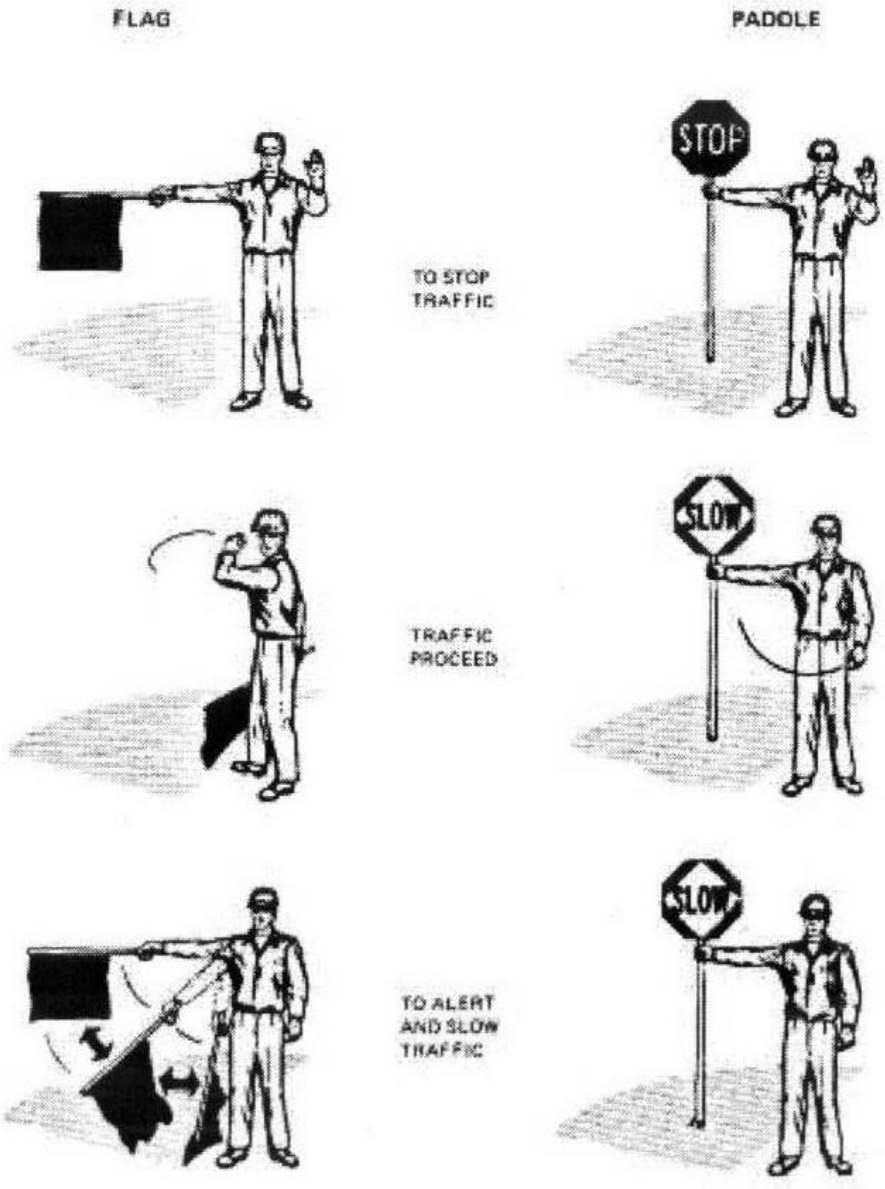
The flagger shall stand parallel to the traffic movement, and with the flag arm lowered from view of the driver, motion traffic ahead with the free arm. Flags shall not be used to signal traffic to proceed.

Where it is Desired to Alert or Slow Traffic

Where it is desired to alert or slow traffic by means of flagging, the flagger shall face traffic and slowly wave the flag in a sweeping motion of the extended arm from the shoulder level to straight down without raising the arm above a horizontal position.

If a sign paddle is used, it shall be held in a stationary position with the arm extended horizontally away from the body. For added emphasis, the flagger may slowly raise and lower the free hand with the palm down.

The use of the flag and sign paddle are illustrated below:



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Hexavalent Chromium

1538 Country Club Parkway, Elkhorn, Wisconsin 53121-3999 *(262) 743-2800 • (262) 743-2810 (fax)*
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Green Bay Wisconsin	Madison Wisconsin	Milwaukee Wisconsin	Chicago Illinois	Rockford Illinois

Hexavalent Chromium

Chromium hexavalent (Cr(VI)) compounds, often called hexavalent chromium exist in several forms. Industrial uses of hexavalent chromium compounds include chromate pigments in dyes, paints, inks, and plastics; chromates added as anticorrosive agents to paints, primers, and other surface coatings; and chromic acid electroplated onto metal parts to provide a decorative or protective coating. Hexavalent chromium can also be formed when performing "hot work" such as welding on stainless steel or melting chromium metal. In these situations the chromium is not originally hexavalent, but the high temperatures involved in the process result in oxidation that converts the chromium to a hexavalent state.

The primary means of human exposure to hexavalent chromium and chromate salts are inhalation, ingestion, and skin contact. Hexavalent chromium can be inhaled when hexavalent chromium dust, mist, or fumes are in the air. Airborne particles of chromium dust can also contaminate hands, clothing, beards, food, and beverages.

Employees who are working near chrome electroplating; those who are welding and hot working stainless steel, high chrome alloys and chrome-coated metal; applying and removing chromate-containing paints and other surface coatings are affected as well.

Workplace exposure to hexavalent chromium may cause lung cancer from breathing airborne hexavalent chromium; irritation or damage to the nose, throat, and lung (respiratory tract) if hexavalent chromium is breathed at high levels; and, irritation or damage to the eyes and skin if hexavalent chromium contacts these organs in high concentrations.

Exposure to hexavalent chromium can also occur when employees are working with wet Portland cement. Wet Portland cement can damage the skin because it is caustic, abrasive, absorbs moisture and contains trace amounts of hexavalent chromium.

All forms of hexavalent chromium are regarded as carcinogenic to workers. The risk of developing lung cancer increases with the amount of hexavalent chromium inhaled and the length of time the worker is exposed.

Breathing in high levels of hexavalent chromium can cause irritation to the nose and throat. Symptoms may include runny nose, sneezing, and coughing, itching and burning sensation. Repeated or prolonged exposure can cause sores to develop in the nose and result in nosebleeds. If the damage is severe, the nasal septum develops a hole in it. Some employees become allergic to hexavalent chromium so that inhaling chromate compounds can cause asthma symptoms such as sneezing and shortness of breath.

Some employees can also develop an allergic skin reaction, called allergic contact dermatitis. Once an employee is sensitized, that person's immune system overreacts to small amounts of hexavalent chromium. The skin swells and a red, itchy rash that becomes crusty and thickened with prolonged exposure. Contact with non-intact skin can lead to chrome ulcers. These are small crusted skin sores with a rounded border. They heal slowly and leave scars.

OSHA has taken steps to protect employees from health hazards caused by exposure to Hexavalent chromium by setting the following standards:

- Limit eight-hour time-weighted average hexavalent chromium exposure in the workplace to 5 micrograms or less per cubic meter of air.

- Perform periodic monitoring at least every six months if initial monitoring shows employee exposure at or above the action level (2.5 micrograms per cubic meter of air calculated as an eight hour time-weighted average).

- Provide appropriate personal protective clothing and equipment when there is likely to be a hazard present from skin or eye contact, including appropriate respiratory protection.

- Implement good personal hygiene and house-keeping practices to prevent hexavalent chromium exposure.

- Prohibit employee rotation as a method to achieve compliance with the exposure limit (PEL).

- Make available medical examination to employees within 30 days of initial assignment, to those exposed in an emergency situation, to those who experience signs or symptoms of adverse health effects associated with hexavalent chromium exposure, to those who are or may be exposed at or above the action level for 30 or more days a year, and at termination of employment.

Balestrieri employs engineering methods and work practice controls that are effective in controlling worker exposure to hexavalent chromium which include, but are not limited to:

- Evaluate exposures for all potential job tasks involving hexavalent chromium
- Supervisor, foreman and worker training as required under OSHA 29 CFR 1910.134; 1910.1026, 1915.1026 and 1926.1126
- Information and training about where and how exposure to hexavalent chromium occurs
- Explanation and training on the health hazards associated with hexavalent chromium
- Provides and trains employees on protective clothing and equipment which include but are not limited to:
    - Protective clothing
    - Hand protection
    - Eye, face and headwear protection
    - Protective footwear
- Explanation and training on engineering controls and work practices for the worker's job assignment to control exposure to hexavalent chromium which include, but are not limited to:
    - Minimizing splashing
    - Minimizing air agitation
    - Minimizing exposure from drying parts with compressed air
    - Containment and Enclosure procedures
    - Training on personal protective clothing and equipment, including respirators that comply with 29 CFR 1819.134
    - Training on Local Exhaust Ventilation procedures
    - Training on General Dilution Ventilation procedures
    - Training on washing facilities and changing rooms, disposal of protective clothing and cleaning and/or disposal of exposed equipment
    - Description and training on measures employees can take to protect themselves from hexavalent chromium exposure, such as modification of smoking, personal hygiene practices, and appropriate work practices.
- Explanation and training on engineering controls and work practices for the worker's job assignment to control exposure to hexavalent chromium when working with Portland cement also include but are not limited to:
    - Provide proper well fitting gloves, tall waterproof boots, and proper eye protection for workers who may come into contact with wet Portland cement with instruction for proper use which includes but is not limited to:
        - Wash hands and dry with clean cloth or paper towels before putting on gloves
        - Wash hands every time gloves are removed
        - Instruction on keeping the insides of gloves dry
        - Wear long sleeve shirts with the sleeves duct-taped to the gloves to prevent wet cement from getting inside the gloves
        - Wash off the outside of the gloves before removing them

    - Instruction on taking gloves off by holding arms down, remove one using the other gloved hand, and then remove the second glove with the removed glove
    - Handle only the inside of the removed gloves
    - Instruction on washing the used gloves if they are to be reused
    - Instruction on disposal of heavily contaminated gloves
    - Instruction on use of waterproof boots that are high enough to prevent wet cement from getting inside
    - Instruction on tucking pants inside boots and wrapping duct tape around the top of the boots to prevent wet cement from entering
    - Instructions on keeping work cloths separate from street cloths
    - Training on use of proper eye protection when working with Portland cement
- Training on Hazard Signs under 29 CFR 1910.1200
- Require visitors to use the appropriate protective equipment
- Explanation and training on emergency procedures
- Explanation and training on the Medical Surveillance Program
- Testing and Recordkeeping for Medical Surveillance Program

Employees are warned that eating, drinking, smoking, chewing tobacco or gum is prohibited in regulated areas, and such items are not to be stored in a regulated area.

Employees who have skin contact with hexavalent chromium must wash the exposed area thoroughly with soap and water and report the contact to their supervisor.

All surfaces must be maintained free of accumulations of hexavalent chromium and all spills and releases of hexavalent chromium-containing material must be cleaned up promptly. Dry shoveling, sweeping, and brushing may be used only when HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure to hexavalent chromium have been tried and found ineffective. Effective wet shoveling, sweeping, and brushing are allowed.

The use of compressed air to remove hexavalent chromium when no alternative method is feasible, but only when used with a ventilation system designed to capture the dust cloud created by the compressed air.

Waste, scrap, debris and any other materials contaminated with hexavalent chromium and consigned for disposal must be collected and disposed of in labeled, sealed, impermeable bags or containers.

Balestrieri follows federal regulations for employee exposure limits, and employees are monitored for hexavalent chromium exposure.

Notes:

Notes:

Acknowledgement – EMPLOYEE COPY (Retain in book)

- I acknowledge that I have received and read the Balestrieri Safety and Health Program and understand its provisions.
- I understand that Balestrieri may modify or eliminate the terms described in the employee handbook at any time, with or without prior notice.
- I understand that it is my responsibility to participate in any and all safety training required by Balestrieri.
- I understand that violation of any procedures and training covered in this manual may result in suspension and/or termination.

Disclaimer

This Safety Manual is intended as the most current safety policies, rules and regulations of Balestrieri who reserves the right to change policies, rules and regulations at any time. Employees will be notified of any policy, rule or regulation changes, additions or deletions.

Balestrieri reserves the right to make changes in this manual for the purpose of modifying, revising and updating company policy and this manual. Notice of changes will be posted on the bulletin boards, some will be provided in writing to the employees and said changes will become a part of this manual.

This Safety Manual supersedes all previous safety policies, rules and procedures given to employees. Only an officer of Balestrieri may alter this manual.

Management Commitment to Safety and Health

If you have any questions or need assistance reviewing this document please contact Cynthia K. Balestrieri, Vice President (262) 743-2800.

Employee Name:_____Clock#_____

Employee Signature_____Date_____

Notes:

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