Lead Awareness Program

I. Background

Lead is an element that occurs naturally in the soil and the air. Because of its chemical properties and characteristics- corrosion resistance, low melting point, density and malleability - lead became a desirable and commonly used product. In ancient times, lead was extensively used and as a result, lead poisoning was a common ailment. Lead exposure continues to pose serious health problems today.

II. Health Effects

Because lead is so widely used and prevalent in the environment, lead can be inhaled, ingested, and, occasionally, absorbed through the skin. Most industrial exposure is from breathing inorganic lead dust and fumes. Eating, drinking and smoking on the work site or carelessly handling contaminated objects can result in unintentional exposure to lead.

Once lead enters the body, it is stored in the blood, body organs and bones. Lead is a potent neurotoxin and carcinogen, and affects the brain and nervous system, reproductive capabilities, the kidneys, the digestive system, and the ability to make blood. Common symptoms of acute lead poisoning are loss of appetite, nausea, vomiting, stomach cramps, constipation, difficulty in sleeping, fatigue, moodiness, headache, joint or muscle aches, and anemia. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems. Because of its toxicity, Occupational Safety and Health Administration outlines practices for reducing lead exposure and for protecting the health of workers. Under the US Department of Labor, Occupational Safety and Health Administration (OSHA) Lead Exposure in Construction (29 CFR 1926.62) and Lead Exposure in General Industry (29 CFR 1910.1025) is defined as a time-weighted average exposure of 50 $\mu g/m^3$ as measured over the course of an eight-hour workday. If concentrations are higher, appropriate respirators must be worn by employees to keep their exposure below 50 $\mu g/m^3$ of air. Pagoda Electrical, Inc. also must provide clean showers, change rooms and lunchrooms for their employees. The standard also specifies monitoring requirements, methods for reducing lead exposure, medical surveillance of employees to evaluate whether they are absorbing excessive lead, and medical removal protection in cases of overexposure.

III. Purpose

The purpose of this program is to establish specific Pagoda Electrical, Inc. policy concerning occupational exposure to lead and in the management of construction and maintenance activities involving lead. Proper lead management will help

safeguard the health and safety of Pagoda Electrical, Inc. workers and other personnel and minimize potential negative impacts to the environment. This is a statement of official Pagoda Electrical, Inc. policy to establish the process for compliance OSHA Regulations.

IV. Policy

Pagoda Electrical, Inc. has developed this Lead Management Program to reduce occupational and environmental exposure to lead. Pagoda Electrical, Inc. is dedicated to providing safe and healthful work facilities for employees, and complying with federal and state occupational health and safety standards. All Company employees share responsibility for minimizing their exposure to lead.

This Lead Management Program shall be implemented at all Pagoda Electrical, Inc. facilities where potential exposure to lead may occur.

This Lead Management Program shall be reviewed and evaluated for its effectiveness periodically, and updated as necessary.

V. Requirements of the Lead OSHA Standard

The "lead standard," developed by the Occupational Safety and Health Administration, outlines practices for reducing lead exposure and for protecting the health of workers. No Pagoda Electrical, Inc. employee shall be exposed to lead at or above concentrations of 50 micrograms per cubic meter of air ($\mu g/ m^3$) averaged over an 8 hour period, OSHA's permissible exposure limit (PEL). In all industries, lead concentrations of 50 $\mu g/m^3$ of air through adequate ventilation and work practice controls. If concentrations are higher, appropriate respirators must be worn by employees to keep their exposure below 50 $\mu g/m^3$ of air. Pagoda Electrical, Inc. also must provide clean showers, change rooms and lunchrooms for their employees. The standard also specifies monitoring requirements, methods for reducing lead exposure, medical surveillance of employees to evaluate whether they are absorbing excessive lead, and medical removal protection in cases of overexposure.

If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

Maximum permissible limit (in μg/ m^3)=400 divided by hours worked in the day. Lead standard requirements are based on airborne concentrations of lead in the workplace. It should be remembered, however, that ingested lead dust can cause problems, even in work areas where airborne lead is below the PEL. If lead exposure in the workplace is a possibility, Pagoda Electrical, Inc. must train workers about the health effects of lead and the requirements of the lead standard, and monitor for airborne lead concentrations during each shift, in each work area, and job classification.

If monitoring shows lead levels above 30 μg/m^3 of air (OSHA's action limit) but below 50 μg/m^3 of air (PEL), Pagoda Electrical, Inc. also must-

- repeat monitoring every six months,
- repeat training annually,
- provide medical surveillance, including blood sampling for lead and zinc protoporphyrin, medical exams and consultation,
- provide medical removal protection for employees with excessively elevated blood lead levels.

If monitoring shows lead above μg/m^3, Pagoda Electrical, Inc. must -

- repeat monitoring every three months,
- post warning signs in work areas where lead exposure exceeds the PEL,
- install local exhaust ventilation or institute other engineering or work practice measures to limit employee exposure so that it does not exceed the PEL,
- provide effective respiratory protection for employees and training in its use, until the PEL can be reached through engineering or work practice controls,
- provide protective clothing and equipment, including overalls, gloves, goggles, and shoes, and make sure employees use them,
- provide clean showers, changing rooms and separate storage for street clothes and soiled work clothes and make certain employees shower and change before leaving the work site,
- install a lunchroom with air conditioning and positive pressure and make sure employees wash before eating, drinking or smoking (**Do not** allow these activities in work areas), and
- provide medical surveillance and medical removal protection.

Chelation is a medical treatment used to remove lead from the blood. Treatment for lead poisoning is to be done only under the supervision of a physician. It is not to be used routinely to keep blood lead at acceptable levels.

All items above summarize major requirements of OSHA's lead standard (29 CFR 1910.1025). Pagoda Electrical, Inc. should know and comply with ALL provisions of the standard.

VI. General Protective Practices

Pagoda Electrical, Inc. shall provide employees with adequate training, facilities, and equipment so that, whenever possible, they are able to avoid breathing or eating lead fumes or dust. All employers should be required to follow these safety practices to protect themselves.

Employees will be trained on and are expected to follow the following Company policies and will not hesitate to ask for clarification if they are unsure of their own responsibilities:

- Use the ventilation systems. Be aware of how these systems work and make sure they are working correctly.
- Keep work areas clean. Do not use compressed air to remove lead dust. Instead, use a high efficiency particulate air (HEPA) vacuum.
- Do not eat, drink or smoke in work areas. Use a properly constructed lunchroom or other separate area free of lead dust or fumes.
- Thoroughly wash hands and face before eating.
- Use the correct respirator. Make sure it is clean, in good repair and fits properly.
- Store street clothes in separate locker from where work clothes are stored.
- Shower, wash hair and change into clean clothes and shoes before leaving the workplace. Lead dust on work clothes can contaminate an employee's home and affect his or her children. (If an employee exhibits elevated blood lead levels, his or her children also should be tested).
- Eat a well-balanced diet; proper nutrition can reduce lead absorption. Fasting can increase the body's rate of absorption.

VII. Definitions

Abatement - is a comprehensive process to eliminate exposure to lead which includes preparation, containment, cleanup, disposal, and testing and involves lead-based paint.

Action Level (AL) - means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 $\mu g/m^3$) averaged over an 8-hour time-weighted average (TWA) period. At this level Pagoda Electrical, Inc. implements control measures to reduce exposures.

Administrative Controls - are written policies such as site safety plans and Standard Operating Procedures (SOPs) which remove or prevent exposure to physical, biological, or chemical hazards.

Air Purifying Respirator (APR) - is a respirator with an air purifying filter cartridge that removes specific contaminants from the ambient air.

Assistant Secretary - means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Blood Lead Level (BLL) - is a measure of the amount of lead in an employee's blood.

Chelation - is a medical treatment used to remove lead from the blood.

Clearance - is an on-site limited investigation to determine whether abatement or lead activities have been completed.

Components - include individual building components such as a door or window sill.

Containment - is the process for protecting both workers and the environment by controlling exposures to lead dust and debris created during abatement.

Director - means the Director, National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health, Education, and Welfare, or designee.

Dust Wipes - are samples collected and analyzed to determine the lead dust concentration.

Engineering Controls - are measures such as fences, safety guards, and ventilation systems to contain, control, or reduce exposure to lead dust and debris.

Exposure - means inhalation or absorption of a concentration of a contaminant.

Final Inspection - is an inspection by a qualified inspector or an industrial hygienist to determine whether abatement and cleanup are complete.

High Efficiency Particulate Air (HEPA) - describes a filter capable of removing from air particles larger than 0.3 microns at 99.97% efficiency or greater.

Lead - means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

Lead-based Paint - is a surface coating containing by weight more than 0.5% lead., or more than 0.7 milligram per square centimeter. Before sampling, Pagoda Electrical, Inc. employees will assume that paint applied before January 1, 1993 is lead-based.

Lead-contaminated Dust - contains at least the following amounts of lead for each building component: 40 μg/ft^2 on interior floor surfaces, 250 μg/ ft^2 on interior window surfaces, and 800 μg/ ft^2 on exterior floor and window surfaces.

Lead Management - is an abatement strategy by which lead is left in place and encapsulated or covered to reduce exposure.

Lead Related Construction - means any construction activity that may result in significant exposure to lead. It involves work trigger tasks or building materials containing over 0.06% lead by weight.

Local Exhaust - capture a contaminant at or near its source.

Micrograms (μ) - is one millionth of a gram.

Negative Exposure Assessment (NEA) - means a demonstration that employee exposures during an operation are expected to be consistently below the PEL.

Parts per Million (PPM) - is the proportional weight of one part of lead per weight of the total amount of material expressed as lead weight/million parts weight material.

Personal Exposure Monitoring - is the air monitoring of an employee breathing zones to determine the amount of contaminant to which they are exposed.

Permissible Exposure Limit (PEL) - Are legal exposure levels set by OSHA. Exposure to lead above 50 $\mu g/m^3$ requires that Pagoda Electrical, Inc. take special precautions to ensure employee safety.

Personal Protective Equipment (PPE) - includes gloves, coveralls, respirators, and other items designed to reduce exposure to specific hazards.

Regulated Areas - are established areas within which protective measures are taken and which are posted with warning signs.

Trigger Tasks - are specified tasks performed when lead is present and that trigger basic protective measures.

Zinc Protoporphyrin (ZPP) - Is a compound found in red blood cells. and has been used as a *screening* test for lead poisoning and for iron deficiency. It is a test which indicates the effect of lead on the blood-forming system and which is required when a BLL is performed.

VIII. Locations of Lead Containing Materials

Pagoda Electrical, Inc. has established and implemented a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, by means of engineering and work practice controls. *See Appendix 1 for Pagoda Electrical, Inc. site specific program and list of possible locations.*

Occurrence: Locations of lead containing materials such as leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials. Component in manufacture of older paints, older plumbing hardware, ammunition, solder, metals, storage batteries, sound and vibration absorbers, lead gasoline, obsolete insecticides (lead arsenate), lead crystal and flint glass.

Preventing lead exposure in workers: Precautions shall be taken for work involving shipbuilding; iron processing; painting, resurfacing, and demolition of bridges, towers and other steel structures; battery manufacturing and recycling; radiator manufacturing and repair; scrap metal; firing ranges; fishing weight production; leaded glass manufacturing; lead ore production and smelting.

When employees are working on multi-contractor worksites, employees shall be protected from exposure to lead due to the inadequate containment of such jobs. Pagoda Electrical, Inc. shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment prior to any employee commencing work and being assigned to the area.

IX. Exposure Monitoring and Sampling

Where a determination has been made that lead containing surfaces or materials may be present at the work site, air monitoring shall be conducted during work activities which are representative of the exposure for each job classification at the work site to represent the initial exposure assessment.

Employee exposure is that exposure which would occur if the employee were not using a respirator. Pagoda Electrical, Inc. shall collect full shift (for at least 7 continuous hours) personal samples including at least one sample for each shift for each job classification in each work area. Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

Exposure monitoring will be performed by the Safety and Health Manager for maintenance work performed by Pagoda Electrical, Inc. employees. Exposure monitoring for private contractors' employees will be performed by an independent industrial hygiene consultant coordinated by the contractor.

Monitoring and Sampling and analysis will be performed in accordance with NIOSH Method 7082, Sampling Airborne Particulate for Lead. Analysis will be conducted by an American Industrial Hygiene Association accredited laboratory. Results in excess of the Action Level (AL) will require additional employee protection measures in accordance with either OSHA 29 CFR 1926.62 or OSHA 29 CFR 1910.1025, depending how the work is classified, that is, construction or general industry.

As required by the Safety and Health Manager, area samples may be taken during large scale maintenance work to determine if lead particulates are infiltrating into occupied spaces. Sampling and analysis will be performed as described above. Results in excess of the Action Level (AL) of 30 µg/m3 will require additional employee protection measures as outlined in Personal Hygiene Practices, Respiratory Protection, and Appendix D of this Plan.

Copies of the results of all industrial hygiene monitoring must be forwarded to the Safety and Health Manager. Affected employees must be notified in accordance with applicable regulations.

Frequency of Monitoring

If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated (except as provided in the paragraph on 'Additional Monitoring', following). If the initial determination or subsequent monitoring reveals employee **exposure to be at or above the action level but below the permissible exposure** limit, Pagoda Electrical, Inc. shall repeat monitoring at least every 6 months.
Pagoda Electrical, Inc. shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time Pagoda Electrical, Inc. may discontinue monitoring for that employee.

If the initial monitoring reveals that employee exposure is above the permissible exposure limit Pagoda Electrical, Inc. shall repeat monitoring quarterly. Pagoda Electrical, Inc. shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the PEL but at or above the action level at which time Pagoda Electrical, Inc. shall repeat monitoring for that employee at the frequency specified in paragraph above (except as provided in the paragraph on 'Additional Monitoring', following).

Additional monitoring

Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever Pagoda Electrical, Inc. has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this paragraph shall be conducted.

Employee monitoring notification

Within five (5) working days of completing an exposure/monitor assessment, Pagoda Electrical, Inc. will notify each employee in writing of his/her monitoring/assessment results. Pagoda Electrical, Inc. procedure for this notification process is that Pagoda Electrical, Inc. will post all air monitoring results for employees to review within five (5) working days.

Whenever the results indicate that the employee's exposure, without regard to respirators, exceeds the permissible exposure limit, Pagoda Electrical, Inc. shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce further exposure to or below the permissible exposure limit.

Methods of Compliance

Compliance program.

Pagoda Electrical, Inc. has established and implemented a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, by means of engineering and work practice controls. *See Appendix 1 for Pagoda Electrical, Inc. site specific program.*

Pagoda Electrical, Inc. written plan for these compliance programs include the following:

(A) A description of each operation in which lead is emitted; e.g. machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;
(B) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead;
(C) A report of the technology considered in meeting the permissible exposure limit;
(D) Air monitoring data which documents the source of lead emissions;
(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;
(F) An administrative control schedule
(G) Other relevant information.

Written programs must be revised and updated at least every 6 months to reflect the current status of the program. (Note: ISN RAV, OSHA Regs. 1926(e)(2)(v) and 1910.1025(e)(3)(iv) has annually. CalOSHA 1532.1 has 6 months)

ENGINEERING CONTROLS. Engineering controls, such as ventilation, and good work practices are the preferred methods of minimizing exposures to airborne lead at the worksite. The engineering control methods that can be used to reduce or eliminate lead exposures can be grouped into three main categories: (1) substitution; (2) isolation; and (3) ventilation. Engineering controls are the first line of defense in protecting workers from hazardous exposures.

Substitution.

a. Substitution includes using a material that is less hazardous than lead, changing from one type of process equipment to another, or even, in some cases, changing the process itself to reduce the potential exposure to lead.
b. Examples of substitution include:

- **Use of a less hazardous material**: applying a nonleaded paint rather than a coating that contains lead.
- **Change in process equipment**: using less dusty methods such as vacuum blast cleaning, wet abrasive blast cleaning, shrouded power tool cleaning, or chemical stripping to substitute for open abrasive blast cleaning to reduce exposure to respirable airborne particulates containing lead.
- **Change in process**: performing demolition work using mobile hydraulic shears instead of a cutting torch to reduce exposure to lead fumes generated by heating lead compounds. ……
- **Isolation** is a method of limiting lead exposure to those employees who are working directly with it. A method which isolates lead contamination and thus protects both nonessential workers, bystanders, and the environment is to erect a sealed containment structure around open abrasive blasting operations.

The containment structure should/must therefore be provided with negative-pressure exhaust ventilation to reduce workers' exposure to lead, improve visibility, and reduce emissions from the enclosure.

Ventilation.

a. Ventilation, either local or dilution (general), is probably the most important engineering control available to the safety and health professional to maintain airborne concentrations of lead at acceptable levels. Local exhaust ventilation, which includes both portable ventilation systems and shrouded tools supplied with ventilation, is generally the preferred method. If a local exhaust system is properly designed, it will capture and control lead particles at or near the source of generation and transport these particles to a collection system before they can be dispersed into the work environment.

b. Dilution ventilation, on the other hand, allows lead particles generated by work activities to spread throughout the work area and then dilutes the concentration of particles by circulating large quantities of air into and out from the work area. For work operations where the sources of lead dust generation are numerous and widely distributed (e.g., open abrasive blasting conducted in containment structures), dilution ventilation may be the best control.

c. Examples of ventilation controls include the following:

- Power tools that are equipped with dust collection shrouds or other attachments for dust removal and are exhausted through a HEPA vacuum system.
- Vacuum blast nozzles (vacuum blasting is a variation on open abrasive blasting). In this type of blasting, the blast nozzle has local containment (a shroud) at its end, and containment is usually accomplished through brush-lined attachments at the outer periphery and a vacuum inlet between the blast nozzle and the outer brushes. Containment structures that are provided with negative-pressure dilution ventilation systems to reduce airborne lead concentrations within the enclosure, increase visibility, and control emissions of particulate matter to the environment.

WORK PRACTICE CONTROLS. Work practices involve the way a task is performed. OSHA has found that appropriate work practices can be a vital aid in lowering worker exposures to hazardous substances and in achieving compliance with the PEL.

Some fundamental and easily implemented work practices are: (1) good housekeeping, (2) use of appropriate personal hygiene practices, (3) periodic

inspection and maintenance of process and control equipment, (4) use of proper procedures to perform a task, (5) provision of supervision to ensure that the proper procedures are followed, and (6) use of administrative controls.

(1) Good Housekeeping.

a. A rigorous housekeeping program is necessary in many jobs to keep airborne lead levels at or below permissible exposure limits. Good housekeeping involves a regular schedule of housekeeping activities to remove accumulations of lead dust and lead-containing debris. The schedule should be adapted to exposure conditions at a particular worksite.

b. All workplace surfaces must be maintained as free as practicable of accumulations of lead dust. Lead dust on overhead ledges, equipment, floors, and other surfaces must be removed to prevent traffic, vibration, or random air currents from re-entraining the lead-laden dust and making it airborne again. Regularly scheduled clean-ups are important because they minimize the re-entrainment of lead dust into the air, which otherwise serves as an additional source of exposure that engineering controls are generally not designed to control.

c. Vacuuming is considered the most reliable method of cleaning dusty surfaces, but any effective method that minimizes the likelihood of re-entrainment may be used (for example, a wet floor scrubber). When vacuuming equipment is used, the vacuums must be equipped with high-efficiency particulate air (HEPA) filters. Blowing with compressed air is generally prohibited as a cleaning method, unless the compressed air is used in conjunction with a ventilation system that is designed to capture the airborne dust created by the compressed air (e.g. dust "blowdown" inside a negative-pressure containment structure). In addition, all persons doing the cleanup should be provided with suitable respiratory protection and personal protective clothing to prevent contact with lead.

d. Where feasible, lead-containing debris and contaminated items accumulated for disposal should be wet-misted before handling. Such materials must be collected and put into sealed impermeable bags or other closed impermeable containers. Bags and containers must be labeled to indicate that they contain lead-containing waste.

(2) Personal Hygiene Practices.

a. Personal hygiene is also an important element in any program to protect workers from exposure to lead dust. When employee exposure is above the PEL, the lead standard requires Pagoda Electrical, Inc. to provide, and ensure that workers use, adequate shower facilities (where feasible), hand-washing facilities, clean change areas, and separate non-contaminated eating areas. Employees must also wash their hands and faces prior to eating, drinking, using tobacco products, or applying cosmetics, and they must not eat, drink, use tobacco products, or apply cosmetics in any work area where the PEL is exceeded. In addition, employees must not enter lunchroom facilities or eating areas while wearing protective work clothing or equipment unless surface lead dust has first been removed from the clothing or equipment by vacuuming or another cleaning method that limits dispersion of lead dust.

b. Workers who do not shower and change into clean clothing before leaving the worksite may contaminate their homes and vehicles with lead dust. Other members of the household may then be exposed to harmful amounts of lead. A recent NIOSH publication (NIOSH 1992) points out the dangers of "take-home" lead contamination. For the same reason, vehicles driven to the worksite should be parked where they will not be contaminated with lead.

c. The personal hygiene measures described above will reduce worker exposure to lead and decrease the likelihood of lead absorption caused by ingestion or inhalation of lead particles. In addition, these measures will minimize employee exposure to lead after the work shift ends, significantly reduce the movement of lead from the worksite, and provide added protection to employees and their families.

d. When chemical strippers are used to remove lead-based paint, appropriate impermeable gloves and chemical resistant clothing shall be worn for worker protection as well as safety goggles or face shields to protect the eyes from chemical splashes. Portable eye wash equipment must be available on site: **If it's not, employees will**

immediately inform their supervisor so that eye wash equipment is provided! The area where the chemical stripper is being used must be well ventilated to avoid exposure to potentially toxic vapors.
e. Employees will wash hands and face if lead materials are contacted.

Change Areas.

a. When employee airborne exposures to lead are above the PEL, Pagoda Electrical, Inc. must provide employees with a clean change area that is equipped with storage facilities for street clothes and a separate area with facilities for the removal and storage of lead-contaminated protective work clothing and equipment. Separate clean and dirty change areas are essential in preventing cross-contamination of the employees' street and work clothing.

b. Clean change areas are used to remove street clothes, to suit up in clean work clothes (protective clothing), and to don respirators prior to beginning work, and to dress in street clothes after work. No lead-contaminated items are permitted to enter the clean change area. Work clothing should be worn only on the job site. Under no circumstances should lead-contaminated work clothes be laundered at home or taken from the worksite, except to be laundered professionally or properly disposed of following applicable Federal, State, and local regulations.

Showers. When employee exposures exceed the PEL, Pagoda Electrical, Inc. must provide employees with suitable shower facilities, where feasible, so that exposed employees can remove accumulated lead dust from their skin and hair prior to leaving the worksite.

Where shower facilities are available, employees must shower at the end of the work shift before changing into their street clothes and leaving the worksite. Showers must be equipped with hot and cold water, in accordance with 29 CFR 1926.51 (f)(4)(iv).

Washing Facilities. Washing facilities must be provided to employees in accordance with the requirements of 29 CFR 1926.51(f). Water, soap, and clean towels are to be provided for this purpose. Where showers are not provided, Pagoda Electrical, Inc. must ensure that employees wash their hands and faces at the end of the work shift.

Eating Facilities. Pagoda Electrical, Inc. must provide employees who are exposed to lead at levels exceeding the PEL with eating facilities or designated areas that are readily accessible to employees and must ensure that the eating area is free from lead contamination. To further minimize the possibility of food contamination and reduce the likelihood of additional lead absorption from contaminated food, beverages, tobacco, and cosmetic products, Pagoda Electrical, Inc. must prohibit the storage, use, or consumption of these products in any area where lead dust or fumes may be present.

(3) Periodic Inspection and Maintenance. Periodic inspection and maintenance of process equipment and control equipment such as ventilation systems are another important work practice control. At worksites where full containment is used as an environmental control, the failure of the ventilation system for the containment area can result in hazardous exposures to workers within the enclosure. Equipment that is near failure or in disrepair will not perform as intended. Regular inspections can detect abnormal conditions so that timely maintenance can be performed. If process and control equipment is routinely inspected, maintained, and repaired, or is replaced before failure occurs, there is less chance that hazardous employee exposures will occur.

- Performance of Task.

  a. One important element of this program is training workers to follow the proper work practices and procedures for their jobs. Workers must know the proper way to perform job tasks to minimize their exposure to lead and to maximize the effectiveness of engineering controls. For example, if a worker performs a task away from (rather than close to) an exhaust hood, the control measure will be unable to capture the particulates generated by the task and will thus be ineffective.

- b. In certain applications such as abatement in buildings, wet methods can significantly reduce the generation of lead-containing dust in the work area. Wetting of surfaces with water mist prior to sanding, scraping, or sawing, and wetting lead-containing building components prior to removal will minimize airborne dust generation during these activities. Failure to

operate engineering controls properly may also contaminate the work area. Workers can be informed of safe operating procedures through fact sheets, discussions at safety meetings, and other educational means.

- Supervision.

  a. Good supervision is another important work practice. It provides needed support for ensuring that proper work practices are followed by workers. By directing a worker to position the exhaust hood properly or to improve work practice, such as standing to the side or upwind of the cutting torch to avoid the smoke plume, a supervisor can do much to minimize unnecessary employee exposure to airborne contaminants.

  b. The OSHA construction standard for lead also requires that a competent person perform frequent and regular inspections of job sites, materials, and equipment. A competent person is defined by the standard as one who is capable of identifying existing and predictable lead hazards and who has authorization to take prompt corrective measures to eliminate them.

- Administrative Controls.

a. Administrative controls are another form of work practice controls that can be used to influence the way a task is performed. Controls of this type generally involve scheduling of the work or the worker. For example, employee exposure can be controlled by scheduling construction activities or workers' tasks in ways that minimize employee exposure levels. One method Pagoda Electrical, Inc. can use is to schedule the most dust- or fume-producing operations for a time when the fewest number of employees will be present.

b. Another method is worker rotation, which involves rotating employees into and out of contaminated areas in the course of a shift, thereby reducing the full-shift exposure of any given employee. When a worker is rotated out of the job that involves lead exposure, he or she is assigned to an area of the worksite that does not involve lead exposure.

If this method is used to control worker exposure to lead, the lead standard requires that Pagoda Electrical, Inc. implement a job rotation schedule that (1) identifies each affected worker, (2) lists the duration and exposure levels at each job or work station where each affected employee is located, and (3) lists any other information that may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

IX. Respiratory Protection and Training

Workers engaged in lead work will require respiratory protective equipment when industrial hygiene air monitoring indicates anticipated exposures in excess of the PEL.

Employees will wear the appropriate respiratory protection in accordance with work to be performed and shall wear respirators during:

a. As an interim protection for tasks until exposure assessments can be completed, refer to Respiratory Table , next page, to determine the appropriate level of respiratory protection.

b. Periods necessary to install or implement engineering or work-practice controls.

c. Work operations for which engineering and work-practice controls are not sufficient to reduce employee exposures to or below the permissible exposure limit;

d. Emergencies

e. When an employee's exposure exceeds the Permissible Exposure Limit (PEL).

f. Whenever an employee requests one.

The use of respiratory protection shall be in accordance with OSHA 29 CFR 1910.134, Respiratory Protection, and Pagoda Electrical, Inc.'s Respiratory Protection Program.

All workers must be medically evaluated by Pagoda Electrical, Inc. to determine the ability of the worker to perform the work while wearing a respirator.

Training in the care, use and fitting of the respirator in addition to fit-testing is conducted by Pagoda Electrical, Inc. for those employees who are authorized by

Pagoda Electrical, Inc. to wear a respirator. Any worker who is not authorized by Pagoda Electrical, Inc. to wear a respirator will be prohibited from engaging in activities which may expose the worker to airborne lead if exposures are anticipated to exceed the OSHA permissible exposure level.

All employee respirators worn at the work site must be placed in a plastic bag prior to leaving the site and thoroughly cleaned before being worn again. Cleaning should include inspection of the respirator and replacement of worn parts. Fit-checks should be done each time the respirator is worn. The medical exam, fit-test and training must be repeated annually.

Respirators shall be selected as follows:

Respiratory Table

Airborne concentration of lead	Required respirator[1]
Not in excess of 50 µg/m^3	Half-mask air-purifying respirator equipped with high efficiency filters[2,3].
Not in excess of 250 µg/m^3	Full facepiece, air-purifying respirator with high efficiency filters[3].
Not in excess of 500 µg/m^3	(1) Any powered, air-purifying respirator with high efficiency filters[3]; or (2) Half-mask supplied-air respirator operated in positive-pressure mode[2].
Not in excess of 1000 µg/m^3	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 1000 µg/m^3, unknown concentration or fire fighting.	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

1. Respirators specified for higher concentrations can be used at lower concentrations of lead.
2. Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

X. Personal Protective Equipment (PPE) and Work Clothing

Employees will be provided with the correct type of personal protective equipment and work clothing. If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, Pagoda Electrical, Inc. shall provide at no cost to the employee and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

1. Wear Personal Protective Equipment at all times where there may be potential exposure to lead containing materials including the initial exposure assessment phase. The minimum level of personal protective equipment shall be specified by the Safety and Health Manager.
3. Coveralls or similar full-body work clothing;
4. Gloves, hats, and shoes or disposable shoe coverlets that do not interfere with the work being performed.; and
5. Wear eye protection and face shields, vented goggles, or other appropriate protective equipment which complies with the ANSI Z87.1 standard.

Cleaning and replacement of clothing and equipment:

(i) Pagoda Electrical, Inc. shall provide the protective clothing required in this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 µg/m 3 of lead as an 8-hour TWA.

(ii) Pagoda Electrical, Inc. shall provide for the cleaning, laundering, or disposal of protective clothing and equipment required by this section.
(iii) Pagoda Electrical, Inc. shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.
(iv) Pagoda Electrical, Inc. shall assure that all protective clothing is removed at the completion of a work shift only in change rooms.
(v) Pagoda Electrical, Inc. shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.

(vi) Pagoda Electrical, Inc. shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(vii) Pagoda Electrical, Inc. shall assure that the containers of contaminated protective clothing and equipment are labeled as follows:

CAUTION:
CLOTHING CONTAMINATED WITH LEAD.
DO NOT REMOVE DUST BY BLOWING
OR SHAKING. DISPOSE OF LEAD CONTAMINATED
WASH WATER IN ACCORDANCE
WITH APPLICABLE LOCAL,
STATE, OR FEDERAL REGULATIONS.

(viii) Pagoda Electrical, Inc. shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

XI. Medical Surveillance

Pagoda Electrical, Inc. supports the practices necessary for early detection of lead exposure. The medical surveillance program supplements the primary goals of the lead exposure control program of preventing disease through elimination or reduction of airborne concentrations of lead, and sources of ingestion. The medical surveillance provisions incorporate both initial and ongoing medical surveillance.

In addition:

(i) Pagoda Electrical, Inc. shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year.

(ii) Pagoda Electrical, Inc. shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(iii) Pagoda Electrical, Inc. shall provide the required medical surveillance including multiple physician review without cost to employees and at a reasonable time and place.

In accordance with OSHA 29 CFR 1910.25 and 1926.62, employees who are performing construction work and are occupationally exposed on any day to lead at or above the AL, shall have initial medical surveillance consisting of biological monitoring in the form of blood sampling and analysis for lead and zinc

protoporphyrin (ZPP) levels. This will be provided through Worknet Occupational Health Clinic.

Additionally, employees who are or may be exposed at or above the Action Level (AL) for more than 30 days in any consecutive 12 months will be offered the following medical surveillance:

- blood sampling and analysis at least every 2 months for the first 6 months and every 6 months thereafter;
- workers with blood lead levels at or above 40 µg/dl will have a blood test at least every two (2) months until two (2) consecutive tests (a week apart) show levels less than 40 µg/dl;
- if an employee is medically removed due to elevated blood lead levels, a second (follow-up) blood sampling must be performed within two weeks after Pagoda Electrical, Inc. receives the results of the first test; and,
- blood tested upon termination of employment.

Biological monitoring.

(i) Blood lead and ZPP level sampling and analysis. Any employee with elevated blood levels shall be temporarily removed from the work environment. Pagoda Electrical, Inc. shall make available biological monitoring in the form of blood sampling and analysis for lead and **zinc protoporphyrin** (ZPP) levels to each employee covered under this section on the following schedule:

(A) At least every 6 months to each employee

(B) At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/100 g of whole blood. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/100 g of whole blood; and

(C) At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

(ii) Follow-up blood sampling tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal, Pagoda Electrical, Inc. shall provide a second (follow-up) blood sampling test within two weeks after Pagoda Electrical, Inc. receives the results of the first blood sampling test.

(iii) Accuracy of blood lead level sampling and analysis. Blood lead level sampling and analysis provided pursuant to this section shall have an accuracy (to a confidence level of 95 %) within plus or minus 15 % or 6 µg/100ml, whichever is greater, and shall be conducted by a laboratory licensed by the Center for Disease Control, United States Department of Health, Education and Welfare (CDC) or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

(iv) Employee notification. Within five working days after the receipt of biological monitoring results, Pagoda Electrical, Inc. shall notify in writing each employee whose blood lead level exceeds 40 µg/100 g:

(A) of that employee's blood lead level and

(B) that the OSHA standard requires temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal.

Employees will receive the confidential results of blood tests through Pagoda Electrical, Inc. health department. All medical records remain confidential unless the employee grants permission for his/her records to be released. However, the employee's supervisor and Pagoda Electrical, Inc. will both be notified of an employee's fitness to continue performing lead work and in the event of an employee's blood lead level exceeds 40 µg/dl so that the employee may be moved or transferred to another area until blood lead levels decrease as verified through subsequent blood testing. The Safety and Health Manager will investigate the work practices used to determine why the employee's blood tested high for lead.

In accordance with OSHA 29 CFR 1910.1025, employees not working in construction shall have medical surveillance if they are exposed above the Action Level for more than 30 days per year. Employees will be offered the following medical surveillance:

- Blood lead and ZPP analysis shall be performed at least every 6 months.
- At least every 2 months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/dl of whole blood.
- The frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/dl of whole blood.
- At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.
- Whenever the results of a blood lead test indicate that an employee's blood lead level is at or above 60 µg/dl and the employee is exposed to lead at or

above the Action Level, Pagoda Electrical, Inc. shall provide a second (follow-up) blood sampling test within two weeks after Pagoda Electrical, Inc. receives the results of the first blood sampling test.

Medical Consultation

A medical examination shall be provided to each person enrolled in the lead medical surveillance program if at any time the individual experiences symptoms consistent with lead intoxication, needs consultation concerning the potential effects of past lead exposure or on the ability to procreate or carry a healthy child, or has difficulty breathing during fit-testing or the use of a respirator. The examination shall be conducted annually for any individual who has had a blood-lead level of 40 μg/dl or greater or has been medically removed in the past 12 months. The content of the physical exam shall be at the discretion of the attending physician but shall include at a minimum the elements listed in OSHA 29 CFR 1926.62 (j) (3) for construction workers or OSHA 29 CFR 1910.1025 (j)(3) for workers not involved in construction.

Chelation

OSHA and Pagoda Electrical, Inc. prohibits prophylactic chelation except by a licensed physician and conducted in a clinical setting with thorough and appropriate medical monitoring. If therapeutic or diagnostic chelation is to be performed, Pagoda Electrical, Inc. shall assure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

Medical removal protection benefits.

(i) Provision of medical removal protection benefits. Pagoda Electrical, Inc. shall provide to an employee up to eighteen (18) months of medical removal protection benefits on each occasion that an employee is removed from exposure to lead or otherwise limited pursuant to this section.

(ii) Definition of medical removal protection benefits. For the purposes of this section, the requirement that a Company provide medical removal protection benefits means that Pagoda Electrical, Inc. shall maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to lead or otherwise limited.

(iii) Follow-up medical surveillance during the period of employee removal or limitation. During the period of time that an employee is removed from normal exposure to lead or otherwise limited, Pagoda Electrical, Inc. may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iv) Workers' compensation claims. If a removed employee files a claim for workers' compensation payments for a lead-related disability, then Pagoda Electrical, Inc. shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, Pagoda Electrical, Inc.'s medical removal protection obligation shall be reduced by such amount. Pagoda Electrical, Inc. shall receive no credit for workers' compensation payments received by the employee for treatment related expenses.

(v) Other credits. Pagoda Electrical, Inc.'s obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or Company-funded compensation program, or receives income from employment with another Company made possible by virtue of the employee's removal.

(vi) Employees whose blood lead levels do not adequately decline within 18 months of removal. Pagoda Electrical, Inc. shall take the following measures with respect to any employee removed from exposure to lead due to an elevated blood lead level whose blood lead level has not declined within the past eighteen (18) months of removal so that the employee has been returned to his or her former job status:

(A) Pagoda Electrical, Inc. shall make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(B) Pagoda Electrical, Inc. shall assure that the final medical determination obtained indicates whether or not the employee may be returned to his or her former job status, and if not, what steps should be taken to protect the employee's health;

(C) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to his or her former job status, Pagoda Electrical, Inc. shall continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to his or her former job status.

(D) Where Pagoda Electrical, Inc. acts pursuant to a final medical determination which permits the return of the employee to his or her former job status despite what would otherwise be an unacceptable blood lead level, later questions concerning removing the employee again shall be decided by

a final medical determination. Pagoda Electrical, Inc. need not automatically remove such an employee pursuant to the blood lead level removal criteria provided by this section.

(vii) Voluntary Removal or Restriction of An Employee. Where Pagoda Electrical, Inc., although not required by this section to do so, removes an employee from exposure to lead or otherwise places limitations on an employee due to the effects of lead exposure on the employee's medical condition, Pagoda Electrical, Inc. shall provide medical removal protection benefits to the employee equal to that required State/Federal regulations.

XII. Training Program

Lead Awareness

Where there is a potential exposure to airborne lead at any level, and the work is classified as repair or maintenance, and not construction, the employee must be informed of the contents of 29 CFR 1910.1025 Appendix A (Substance Data Sheet for Occupational Exposure to Lead) and Appendix B (Employee Standard Summary). This information transmission must be repeated at least annually for each employee. The OSHA Lead in Construction Standard, 29 CFR 1926.62, does not require lead awareness training. However, lead awareness training is required for employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. Lead awareness training is required and will be conducted at time of hire, during orientation, or before assignment to areas containing lead. Refresher training will be given annually. Lead awareness training shall be documented including dates of training, employee name, and trainer name.

Lead-Worker Training

OSHA 29 CFR 1910.1025 and 1926.62 require that an employee health and safety training program be implemented for all employees involved in the disturbance (e.g., sanding, planeing, scraping, etc.) of lead-based paint and who are exposed to lead in excess of 30 $\mu g/m^3$ on any day during a given year, and who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists. These employees must attend Lead Worker Training. All costs associated with training, protective equipment, and medical monitoring provided to employees will be assumed by the employee's department. Training must be conducted upon the initial hire and repeated each year that the employee may have such an exposure. This category would include employees who have the potential

to disturb lead-bearing paint in the course of normal activities such as carpenters, painters and plumbers who use lead containing solders.

Pagoda Electrical, Inc. will provide, as requested, the training. It will consist of:

- The Content of this Lead Management Plan;
- The hazards associated with lead;
- Employee information concerning sources of lead, including warning labels, signs and material safety data sheets (MSDS);
- Content of the Lead Standard, either General Industry or Construction, whichever is applicable;
- Specific nature of the operations which could result in exposure to lead above the action level;
- Purpose, proper selection, fitting, use and limitations of respirators;
- Purpose and description of the medical surveillance and medical removal programs, including health effects of lead exposure and potential reproductive consequences.
- Engineering controls and work practices for lead-related work;
- Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and
- Employee's right of access to records under 29 CFR 1910.20.

XIII. Signs

Warning signs shall be posted at each job site where the employees exposure to lead is above the PEL. The signs shall be illuminated and cleaned as necessary so that the legend is readily visible Where an exposure assessment has not been completed, signs shall be posted until the results are known. The signs shall consist of the following wording:

Warning Hazard

Lead Work Area

POISON

No Smoking, Eating of Drinking

Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials. Appropriate work practices shall be followed to ensure the lead containing materials are not disturbed.

For further information or to procure the necessary signage, contact the Parts Clerk or Safety and Health Manager.

XIII. Recordkeeping

In accordance with OSHA 29 CFR 1910.20, 1910.1025, and 1926.62, the following records must be kept by Pagoda Electrical, Inc. for at least 30 years:

- exposure assessments and monitoring;
- a description of the sampling and analytical methods used;
- the type of respiratory protective devices worn; and,
- name, identification number, and job classification of the employee monitored.

For respiratory protection fit testing tests, refer to Pagoda Electrical, Inc.'s Respiratory Protection Program

In addition, the following medical records must be kept by Pagoda Electrical, Inc. for employees subject to medical surveillance for at least 30 years:

- name, identification number, and description of the duties of the employee;
- a copy of the physician's written opinions;
- results of any airborne exposure monitoring done on or for that employee and provided to the physician; and,
- any employee medical complaints related to exposure to lead.

In addition, Pagoda Electrical, Inc. must keep the following medical records for at least 30 years:

- a copy of the medical examination results including medical and work history required under OSHA 1926.62 (j);
- a description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;
- a copy of the results of biological monitoring.

If the employee was removed from lead work under the medical removal provisions, the following records must be maintained by Pagoda Electrical, Inc. for at least the duration of the employee's employment:

- the name and identification number of the employee;
- the date of each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;
- a brief explanation of how each removal was or is being accomplished;
- a statement with respect to each removal indicating whether or not the reason for the removal was an elevated lead level.

Appendix 1

Writing a Site Specific Compliance Program

Your site specific compliance program should describe the engineering and work practice controls used at the site and includes records of compliance activities. The written program should include (all that apply):

1. **Introduction:** Project description, scope & schedule of work, location.
2. **Personnel:** Project manager, competent person, industrial hygienist.
3. **Lead-emitting activities:** Describe tasks, equipment, machinery used, materials, crews.
4. **Engineering and work practice controls:** Describe type of control, equipment, use/maintenance procedures. Include rationale for selecting each control and alternative technologies considered.
5. **Personal air monitoring data/results:** Provide industrial hygiene reports and air sampling results for lead-emitting activities.
6. **Schedule:** Provide timetable for implementing compliance program.
7. **Interim controls:** Describe respiratory protection and other controls that will be used for each task.
8. **Hygiene procedures:** Describe protective clothing and equipment, housekeeping, clean areas, showers, and hand washing stations.
9. **Worker rotation schedule** (if applicable).
10. **Notification procedures:** Informing other employers on site.

Include any of the ***above ten topics*** in the left side of the Compliance Program Table, next page and provide a brief description to the right column of each listed topic

Attach the following programs and records to the compliance program (if available):

1. **Respirator Program**: Provide written program and program administrator; include respirator selected for each task; records for training, fit testing, & medical clearance.
2. **Training & Information:** Training schedule, topics & records; location of warning posters; procedures for providing air and blood test results to workers.
3. **Medical Surveillance Program:** Include blood test schedule and results.
4. **Medical Removal Procedures:** Include lead-free work assignments, medical evaluations and return to work criteria.

PAGODA ELECTRICAL Inc.
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Appendix 1

Example Site Specific Compliance Program

The following operations have been identified as having the potential to exceed the Action Level and shall not be performed without the appropriate engineering and/or administrative controls. Though these controls reduce employee exposure to below the Action Level, the personal protective equipment requirements specified below are intended to further minimize employee exposure, consistent with the ALARA (as low as reasonably achievable) concept. Employees performing these tasks will not eat, drink, smoke etc., while performing these tasks. They will also wash their hands before taking breaks or otherwise leaving the area. Showering may be required, if the PEL is exceeded. The below is Pagoda Electrical, Inc.'s Site Specific Compliance Program for welding and lead paint removal ***TYPE OF WORK HERE (for example: Welding and Lead Removal) see example 1 below***

Include topics from the previous 10 topics below

Edit the below right side

Description of Work & Location	**Welding/Lead Paint Removal – Building 1A, Area 51, Nevada**. (Should also include a description of each activity in which lead is emitted (e.g., equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices);
Engineering Controls/Actions & Work Practice Controls to be Conducted	***Typically the work is performed by paint or weld shop employees. Paint removal may be performed to prepare surfaces for repainting, or prior to welding, hot cutting, or brazing. Paint removal involves the reduction of visible lead paint by sanding or grinding the surface. Welding, brazing, or heating lead painted surfaces above 600^0F is prohibited, unless the paint has been removed to bare metal six inches from either side and behind the area that is to be welded, brazed, or heated. The purpose of this is to prevent the generation of lead fumes from the paint when the metal is heated. In certain instances (e.g., limited access, extent of work), with the proper safety precautions, the Industrial Hygiene group may waive the requirement to remove the paint prior to welding/cutting.*** (Work practice controls reduce the likelihood of exposure by altering the manner in which a task is performed. Safe work practices under the lead in construction standard include, but are not limited to, maintaining separate hygiene facilities (e.g., change rooms, showers, hand washing facilities and lunch areas) and requiring proper housekeeping practices (e.g., cleanup methods).
Air Monitoring Controls to be Utilized:	***Local exhaust ventilation equipped with HEPA (or equivalent) filtration shall be used when performing this type of work. Or Perform cleaning work on the specially designed HEPA mechanical exhaust ventilation system table (when feasible). If using the table is not feasible, other local exhaust ventilation equipped with HEPA filtration shall be used. Or Local exhaust ventilation equipped with HEPA (or equivalent) filtration shall be used when manipulating lead, if feasible. Portable HEPA filtered vacuums may be used to remove loose lead particles from the surface prior to handling to reduce potential airborne levels.***
Administrative Controls to be Utilized:	1. ***Lead awareness training*** 2. ***Work performed in designated area with warning signs.*** 3. ***Written procedures.*** ***(Specific plans to achieve compliance and engineering plans and studies where engineering controls are required;***

Personal Protective Equipment:	***1. Full facepiece negative pressure respirator with HEPA* filters or continuous flow airline respirator for welding and paint removal in order to achieve an assigned protection factor of at least 50 times the PEL. The use of a lower level of respiratory protection is allowable if an initial exposure assessment or previous exposure air monitoring results warrant the down grade. This decision will be made by the Industrial Hygienist. Though the majority of visible paint is removed prior to welding, air sampling results have indicated that it is not possible to remove all of the paint, and there will be some lead-based paint present in cracks and other uneven surfaces of the metal to be welded.*** **** Note: In certain cases a full facepiece respirator with combination HEPA/Organic Vapor cartridges may be required for paint that may contain resins and polymers that can burn to form airborne organic compounds.*** ***2. Disposable coveralls (with head and foot covering).*** ***3. Safety shoes*** (Appropriate personal protective work clothing and equipment which prevent contamination of employees and their garments include, but are not limited to, the following: 1. Disposable coveralls or similar full-body suit; 2. Gloves, hats and disposable shoe coverlets; and 3. Face shields, vented goggles or other appropriate protective equipment, if necessary.)
Hygiene Procedures: ***(included from the list….)***	Food, beverages, tobacco products, and cosmetics are prohibited in all areas where employees are exposed to lead above the PEL regardless of respirator use. Pagoda Electrical, Inc. shall provide the following for employees who are exposed to lead above the PEL: 1. Clean change areas equipped with separate storage facilities for protective work clothing and equipment to prevent cross-contamination of street cloths; 2. Shower and hand washing facilities; and 3. Lunchroom facilities or eating areas which are as free as practicable from lead contamination. Employees shall wash their hands and face prior to eating, drinking, smoking or applying cosmetics in these areas.

Appendix 2

Pagoda Electrical, Inc. Site Specific Compliance Program

The following operations have been identified as having the potential to exceed the Action Level and shall not be performed without the appropriate engineering and/or administrative controls. Though these controls reduce employee exposure to below the Action Level, the personal protective equipment requirements specified below are intended to further minimize employee exposure, consistent with the ALARA (as low as reasonably achievable) concept. Employees performing these tasks will not eat, drink, smoke etc., while performing these tasks. They will also wash their hands before taking breaks or otherwise leaving the area. Showering may be required, if the PEL is exceeded. The below is Pagoda Electrical, Inc.'s Site Specific Compliance Program for welding and lead paint removal ***TYPE OF WORK HERE (for example: Welding and Lead Removal) see example 1 below……***

Description of Work & Location	**List possible locations of lead containing materials**
Engineering Controls/Actions & Work Practice Controls to be Conducted	
Air Monitoring Controls to be Utilized:	
Administrative Controls to be Utilized:	
Personal Protective Equipment:	