Bay City Boiler & Engineering, Inc.

Injury Illness Prevention Program

IIPP

Code of Safe Practices
Hazard Communication Program Overview
Fall Protection Program
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Control of Hazardous Energy Program

Revision 2

OCTOBER 2024

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1.0 Bay City Boiler Safety Policy Statement

Bay City Boiler believes that its most important asset is its employees. We value the safety and health of our employees over everything else and are committed to providing the safest workplace possible. No job is so important – or schedule so demanding – that we cannot take time to work safely.

Bay City Boiler incorporates safety into every aspect of our daily business operation. It is our intent to not only comply with all applicable laws and regulations, including Federal and State Standards, Labor Code, and General Industry/Construction Industry Safety Orders, but to do what is necessary to provide a safe and healthy work environment for our employees, sub-contractors, and customers.

Each of our employees is empowered to refuse any work or task that they believe is unsafe or that involves unnecessary risk. We understand and believe that safety is every employee's responsibility, and that includes everyone involved, from the top down. We expect our employees to be engaged in our safety program which includes ownership in detecting, communicating, and mitigating hazards in the workplace, as a condition of employment. Employees are required to inform their supervisor immediately of any hazardous situation that is beyond their ability or authority to correct.

It takes team work to create an Injury and Incident Free work environment and that is what we are committed to do at Bay City Boiler. Through coaching, mentoring, and dedicated leadership of the safety program by our supervisors and workforce, we are committed to be a safety leader in our industry. Only through such a cooperative effort can we achieve our goal of making our work environment as safe as possible.

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Pete Ellery
President
Bay City Boiler

Purpose and Objective

Bay City Boiler management is committed to the safety and health of all employees and recognizes the need to comply with regulations governing injury, incident prevention and employee safety.

The primary objective of the Injury and Illness Prevention Program (IIPP) is to ensure a safe and healthful workplace in compliance with OSHA Regulations, which requires each employer to:

1. Establish and maintain an effective Injury and Illness Prevention Program;
2. Provide a safe and healthy work environment free of known hazards;
3. Reduce the financial and human losses resulting from injuries and illnesses arising out of or occurring in the course of employment; and
4. Establish safety policies, provide training, initiate operational procedures, and generate active management involvement.

One objective of the IIPP is to give ownership of the Health & Safety program to all employees. It is therefore intended that this Program is to be reviewed and modified as necessary by management and project management personnel before and during all major operations. This IIPP will be further reviewed by all members of supervision, and will be a subject during the "New Hire Orientation," at which time each employee will have access to review a copy of this IIPP.

Bay City Boiler' "Zero Incident" Statement

Bay City Boiler is dedicated to the concept that all workplace incidents, including occupational injuries and illness can be prevented. Accordingly, the company is committed to a policy of the elimination of incidents that result in harm to employees, damage to equipment and/or property, or the disruption of our clients' operations.

Bay City Boiler' "Zero Incident" policy will be achieved at all job sites through the implementation of a series of prevention-based Environmental, Health, and Safety programs and procedures. Our safety policies were developed by management, safety consultants and utilizing the "best known practices" found throughout the construction industry.

2.0 Responsibility

Al employees are expected to comply with our Injury Illness Prevention Program. This Program reflects Bay City Boiler' concern for safety and its commitment to the policies outlined in the program. Bay City Boiler, therefore, will make available the resources required for equipment, training, and positive reinforcement of safe behaviors. The following outlines the responsibilities for our program.

- **President** will be responsible for overseeing the Injury Illness Prevention Program. In addition, he/she will ensure adequate support is provided for the technical aspects of the safety program. Management will be responsible for the following:
  - Providing training to supervisors to effectively communicate safety instructions to employees and provide training sources (i.e. courses, videos) to further educate Bay City Boiler employees on safety.
  - Advise Project Managers, Superintendents and Foremen on safety equipment and other personal protective equipment required by policy and/or procedure.
  - Assist with safety and health inspections through audit of work site conditions.
  - Provide "one-on-one" support to field supervisors and assist them in implementing and administering the Safety Program.

- **Operations Manager** will be responsible for coordinating the Injury Illness Prevention Program with support from management and safety consultants and will be responsible for the following:

  1. Coordinate the Workers' Compensation claims function.
  2. Oversee the maintenance of records as prescribed by Cal/Federal OSHA.
  3. Provide information regarding injury/incident reports and related costs to Senior Management.
  4. Perform follow-up investigations of incidents and injuries as required.
  5. Perform all duties necessary to ensure compliance with applicable safety and health regulations.

- **Superintendents** are responsible for the oversight and fulfillment of safety within their areas and responsible for the following:
  1. Direct and coordinate safety activities on their projects.
  2. Direct Foremen within their projects, to require employees under their supervision to utilize the proper personal protective equipment and job safety devices.
  3. Ensure that all safety equipment is available to employees at their jobsite.
  4. Hold employees accountable to conduct safety inspections of work areas and facilities using appropriate company forms, and oversee the more difficult corrective action for unsafe conditions noted by Foremen and employees.
  5. Conduct their own safety inspections of work areas and locations used by Bay City Boiler personnel as specified in current company standards.

6. Hold Foremen accountable to conduct effective tailgate safety meetings in keeping with current company policy.
7. Monitor employee understanding of safe work practices and safe conditions on jobsites through periodic employee interviews.
8. Track and make certain that job Foremen conduct New Employee follow-up assessments to ensure that the new employee is capable of performing his or her task safety.
9. Ensure that all injuries and incidents are properly and effectively investigated to determine how the injury/incident occurred and what corrective action is needed.
10. Encourage employee suggestions to improve safety in office and /or work sites.
11. Ensure all subcontractors on their projects are maintaining their work areas in a safe manner and are in compliance with set safety standards and best work practices.

- **All Employees** are required to develop and demonstrate safe work habits. Each new Bay City Boiler employee is given access to this "Injury Illness Prevention Program" which contains the "Code of Safe Practices." Included in the IIPP are Corporate Safety Statement, Policies, and Procedures for the safe use of all tools i.e. ladders, fire protection, personal protective equipment, and proper work practices. All employees must sign and return a receipt to their immediate supervisor. In addition, all employees are required to:

1. Assist supervisor in identifying potential or actual hazards in the workplace.
2. Follow the "Code of Safe Practices" when performing your duties.
3. Use and maintain the safety equipment provided by Bay City Boiler properly.
4. Report all injuries and incidents to your supervisor immediately.
5. Report all unsafe conditions or unsafe practices observed.
6. Use all Personal Protective Equipment (PPE) as required by Cal/Federal OSHA and Bay City Boiler Safety Policy, Procedures and IIPP.
7. Inspect assigned equipment prior to use to ensure equipment is in good safe working condition i.e. machine guards, cable rope, hydraulic lines, tires, fire extinguishing equipment, temporary lighting etc.
8. Assist your fellow employee in following the safety rules and regulations.
9. Maintain your work area in a clean and sanitary condition at all times.
10. Wear appropriate protective gear, such as gloves, hard hats, footwear, eye protection, ear protection, respiratory protection, as needed for the specific job being performed.
11. Adhere to supervisor's and manufacturer's instructions when handling or working with or around hazardous material.
12. When an emergency occurs, evacuate the area as necessary and notify your immediate supervisor of your location.
13. Attend all tailgate safety meetings conducted for their crew.
14. Respect Company property and see that it is protected and maintained at all times.
15. Read and follow, without exception, Bay City Boiler' Drug and Alcohol Policy.

- **Subcontractors** are responsible for the effective implementation and maintenance of the Company's Injury Illness Prevention Program as follows:
  1. Assess and recognize the potential hazards or real hazards of each project supervised at the time of pre-job planning.
  2. Assist in the on-going safety training of employees under their supervision.
  3. Oversee compliance with Cal/Federal OSHA Regulations and Company Safety Policy and Procedures.
  4. Observe and evaluate work conditions and procedures continuously to detect and correct unsafe conditions and unsafe practices - provide direction to eliminate identified hazards.
  5. Conduct safety inspections of work area using the designated company forms and direct the correction of noted items.
  6. Stress the benefits of observing safety procedures and of using the prescribed protective equipment to all employees.
  7. Ensure that all employees under their supervision are aware of and comply with requirements for safe practices and safe conditions.
  8. Enforce all safety rules, procedures, and policies including appropriate discipline for non-compliance with such safety rules, procedures and policies.
  9. Assist the responsible individual in providing the New Hire Orientation and ongoing training in tailgate sessions, minutes of which will be forwarded to and maintained by the Project Manager or Project Engineer.
  10. Investigate injuries and incidents promptly, identify causative factors, determine the appropriate corrective action, and ensure that such action is completed for all occurrences under their supervision.
  11. Require employees to report unsafe conditions and to submit practical suggestions for correction.
  12. Ensure that tools, equipment, and protective devices are available, properly maintained, and utilized by workers on supervised projects.
  13. Perform all duties, which will enhance the success of the Injury Illness Prevention Program.

3.0 Ensuring Compliance

Bay City Boiler takes seriously the need for each employee and subcontractor to comply with safe work practices. In fact, to achieve our injury and incident reduction goal, we require all employees and subcontractors to work in a safe and healthful manner at all times. To achieve compliance, Bay City Boiler utilizes a positive recognition program to reward our safety role models and a disciplinary program for those exhibiting unsafe acts and behaviors. The following are some of the many approaches our company uses to ensure that all employees know and understand the importance of safe work practices, and how to apply them to their daily work activities.

Disciplinary Action Program

A. Employees are informed of safe work practices at the time of hire. The Code of Safe Practices is provided to employees and serves as the basis for this review.
B. Bay City Boiler Supervisors will complete a New Employee Follow-up Assessment for each new hire under their control. This document will assist in determining the current safety awareness and future safety training needs.
C. Employees are trained for their assigned tasks. It is their immediate supervisor's responsibility to advise them on any safety hazards that may exist regarding their operations.
D. Supervisory and management personnel are responsible to monitor employee work practices and make on-the-spot corrections of unsafe employee practices within our facilities, on job sites and at client project sites.
E. Overall employee work practices are monitored in the regular company inspection program and violations are pointed out to the immediate supervisors for corrective action. Foremen are responsible for completing a weekly safety inspection checklist.
F. Progressive discipline is applied in all cases where safety rules are violated, or unsafe work practices are followed. The following basic approach will be applied in dealing with disciplinary issues.
G. Bay City Boiler expects all of their employees to comply with its Safety and Health Policies and Procedures. Violation of Company policies and rules may warrant disciplinary action. Bay City Boiler has established a system of progressive discipline that includes verbal warnings, written warnings and suspension and/or termination.
H. Supervision will be subject to disciplinary action for the following reasons, but not limited to:
    1. Repeated Safety rule violations by their crew on the job sites;
    2. Failure to provide adequate training to their employees prior to job assignments;
    3. Failure to report injuries or incidents and provide medical attention to employees injured at work;
    4. Failure to control unsafe conditions or work practices on the job sites;
    5. Failure to maintain good housekeeping standards and cleanliness on the job site;

Zero Tolerance

A. The following Zero Tolerance violations may be grounds for immediate termination:

1. Drug or alcohol on site.
2. Fighting, threatening, or endangering others.
3. Removing or bypassing safety devices on power tools or equipment; i.e.: removing or pinning saw guards, removing safety spring on nail guns, etc.
4. Failure to follow a fatality prevention program such as:
    a. Fall Protection where required.
    b. Control of Hazardous Energy Program where required.
5. Removing or damaging safety equipment.
6. Knowingly violating a written rule or procedure.

Employee Conference Report

Employee Name: _____

Employee #: _____

Employee Last 4 SS #:_____

Date: _____

Position: _____

Check One: ☐ Congratulatory ☐ Disciplinary

Statement of what Occurred:

Employee acknowledgment/ Plan of Action:

Supervisor's Comments/ Recommendations/ Disciplinary Action (as applicable):

Follow up Date: _____

Employee Signature: _____ Date: _____

Supervisor's Signature: _____ Date: _____

Witness Signature: _____ Date: _____

Copies sent to Employee's Personnel Record? Yes _____ No_____

Subcontractor Safety Violation Procedures

Bay City Boiler is committed to providing and maintaining a safe working environment for all employees, subcontractors, visitors, and the public. We believe safety is one of the key factors for managing a successful project and that a safe project benefits everyone. To maintain these ethics and practices, Bay City Boiler' site management personnel will enforce safe work practices along with State/Federal Health and Safety Standards. All unsafe conditions, acts, or behaviors observed by our Project Management team will be addressed immediately and corrective actions implemented before work is allowed to resume.

Bay City Boiler has implemented this Subcontractor Safety Violation process to ensure that subcontractor employees are held accountable for their actions and identified unsafe acts or hazards are corrected. This process will allow our Project Management team to track first offence and repeat safety violations by subcontractor and/or subcontractor employees and ensure corrective actions are administered before an injury or loss occurs. A formal violation will be issued to the subcontractor employee based on the type, frequency, and severity of safety infraction(s) per the following three step process that includes:

1. Formal violation issued to employee with written action plan by the employee and site management of the company required.
2. Formal violation issued to employee with notification to the main office requiring a written plan along with a visit to the site by company top management personnel.
3. Immediate removal of offending subcontractor employee(s) from the project. Removal of a subcontractor employee will result in written corrective action plan along with a visit to the site by company top management personnel.

Depending on the severity of the offence, employees can be removed from the project for their first offense.

Subcontractor Conference Report

Subcontractor Company Name: _____

Subcontractor Employee Name: _____

Subcontractor Last 4 SS or Employee #: _____

Date: _____

Position: _____

Check One: ☐ Congratulatory ☐ Disciplinary

Statement of what Occurred:

Subcontractor Employee acknowledgment/ Plan of Action:

Subcontractor Supervisor's Comments/ Recommendations/ Disciplinary Action (as applicable):

Follow up Date: _____

Subcontractor Employee Signature: _____ Date: _____

Subcontractor Supervisor's Signature: _____ Date: _____

Witness Signature: _____ Date: _____

Recognition Program

Bay City Boiler' utilizes a safety recognition program to recognize and reward their employees for safe work behavior, adherence to Bay City Boiler policies and meeting company incident reduction goals.

Safety Recognition Program

Employee Name: _____

Employee #: _____

Employee Last 4 SS #:_____

Employee was recognized for the following reasons:

☐ Safe Work Habits ☐ Safety Suggestion ☐ Safety Leadership ☐ Safety Performance ☐ Other

Actions Recognized:

_____
_____
_____
_____
_____
_____
_____

Recognition Given:

_____
_____
_____

Person Giving Recognition: _____

Date: _____

Project: _____

4.0 Communications and Recordkeeping

Effective communication is essential in the administration of an effective safety program. In an ongoing effort to ensure that all employees are routinely advised of safety matters, and to ensure that employees report hazards and near misses in the work place, Bay City Boiler adheres to the following methods.

General Information

A. New employees are informed at the time of hire that they should report any and all hazardous conditions to their supervisor immediately. Further, they are informed that there will be no negative repercussions as a result of their reporting of unsafe conditions or unsafe work practice. Such reports can be made anonymously, if desired by the employee, to ensure confidentiality and no possible negative consequences of reporting.

B. Employees are expected to communicate any time any time they observe an unsafe work practice, unsafe condition or a near miss is observed in the work place.

C. Tailgate Safety Meetings are every two weeks at a minimum and employees are given the opportunity to give feedback on safety observations.

D. Periodic Subcontractor Safety Meetings are conducted at each Bay City Boiler project and information provided is to be discussed with field employees at the next regularly scheduled tailgate meeting.

E. A Safety Committee is maintained to set company policy, circulate safety information, and determine additional safety issues that need company attention. This group meets at least quarterly and includes senior Bay City Boiler management and field personnel.

F. All required employee notification and communication posters will be displayed in areas where employees gather. Newsletters or notices will be used to provide additional information to employees on company and safety matters, as needed.

Tailgate Safety Meetings

One of the responsibilities of the project superintendent and/or foremen is to provide tailgate safety meetings at least every two weeks and to ensure that each available employee is in attendance. Project management will ensure that appropriate safety topics are provided in advance and that records are kept of each safety meeting. The following information is required for record keeping purposes and shall be returned to the main office:

- Crew designation or Job Site
- Name of the Foreman giving the tailgate safety meeting
- Name of each employee in attendance
- Company identification number for each employee in attendance to verify presence
- Date of tailgate safety meeting
- Topic
- Discussion/questions & recommendations for improvement

Recordkeeping

A. Records of hazard assessment inspections, including the person(s) conducting the inspection, the unsafe conditions, and work practices that have been identified and the action taken to correct the identified unsafe conditions and work practices shall be recorded and maintained in the project office and retained as required.

B. Documentations of safety and health training for each employee including the new hire orientation, weekly safety meetings and specific required training shall be maintained in the project office and retained as required.

C. All training documentation shall include the employee's name and/or another identifier, training dates, type of training, and the instructor's name shall be recorded on the training sign in sheet.

D. Incident and Injury reports will be maintained in the corporate office.

E. OSHA 300 Logs will be kept up to date and posted as required.

F. Medical records (such as for respirator medical evaluation) are to be kept confidential and separate from other employee records (e.g., timesheets, training).

G. Record retention.

   1. All records will be kept on hand for a minimum of five years.
   2. Employee medical records must be maintained for at least the duration of employment plus 30 years. This does not include health insurance claims or first aid records. The medical records of employees who have worked for less than 1 year at Bay City Boiler need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment
   3. Exposure records that describe the identity of, and possibly the level of exposure to, a toxic substance or harmful physical agent must be preserved for at least thirty years.
   4. Safety Data Sheets (SDS) must be kept on file for chemicals currently in use. SDS for chemicals formerly used need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years.

5.0 Hazard Identification & Correction

In order to identify and assess hazards, Bay City Boiler will aggressively administer a program of evaluation and inspection. This process will be conducted at appropriate intervals and whenever an identified hazard (potential or real) is reported. In addition to periodic documented inspections, visual inspections will be conducted daily by the project manager and foreman to inspect for and correct unsafe conditions and acts.

Job Hazard Analysis

The Job Hazard Analysis is a Step by Step analysis of a task, process, or operation that will answer the following questions: the purpose of the job, what has to be done, what activities are involved, sequence of basic job steps, potential hazards, and most importantly, recommendations for hazard elimination or control.

A. The Job Hazard Analysis (JHA) is an important incident prevention tool that works by finding hazards and eliminating or minimizing them BEFORE the job is performed.
B. JHA's can be used as a tool for job clarification and hazard awareness, and as a guide in identifying potential and real hazards.
C. The JHA provides a process where senior employees can assist in hazard identification and assist new employees in understanding the work process.

Safety Pre-Task Planning (PTP)

A Safety Pre-task plan is a tool used to prevent incident and injuries in the workplace. It enables clear communication on the task to be performed, potential hazards (for both the task and work area), and control strategies to be implemented.

A. Supervisors must ensure a PTP has been completed prior to work starting.
B. Supervisors review the PTP with all crew members and solicit any feedback.
C. Supervisors ensure all crew members understand, sign, and follow the PTP for their task.
D. Keep the PTP in the work are of the crew so that when conditions change, edits can be made.

Correcting Unsafe Conditions and Unsafe Work Practices

Identification of unsafe conditions and unsafe work practices is critical to the overall success of our company safety program. In an ongoing effort to ensure that all identified unsafe conditions and work practices are properly and adequately corrected, Bay City Boiler will adhere to the following:

A. Any and all employees of the company are empowered to report hazards and unsafe practices. No employee shall be retaliated against for reporting hazards or potential hazards, or for making suggestions related to safety. Bay City Boiler encourages its employee to notify the appropriate persons to ensure the identification and the elimination of hazards and unsafe acts on the job.
B. Any unsafe condition or work practice identified through the inspection process, as a result of an incident investigation or an employee report will be reported to the Superintendent so that immediate corrective actions can take place.
C. An imminent hazard identified will require the immediate removal of all affected employees from the

hazardous conditions. Upon determination of appropriate corrective action, adequate precautions and safeguards will be taken to control the exposure while affected employees correct the imminent hazard. No Bay City Boiler employee will be allowed to reenter the work site until the identified imminent hazard is corrected.

D. All documented unsafe conditions or work practices will be evaluated by the Superintendent and/or Safety personnel to determine severity and set a priority for corrective action.

E. A “Corrective Action List” will be compiled, if numerous issues are identified, listing all reported unsafe conditions and unsafe work practices that includes persons responsible for corrective actions and the expected date/time for mitigating hazards.

F. Corrective Action follow up will occur to make certain that items placed on the “Action List” are completed.

6.0 Incident Investigation

All injuries shall receive proper treatment immediately. It is the responsibility of each supervisor, foreman/lead person, or manager to conduct an investigation of any incident that occurs under their authority for the express purpose to determine incident causation. This investigation will be conducted within 24 hours of the reported incident.

Incident Reporting Process

A. Employees must report all incidents work related injuries/illnesses to their foremen or immediate supervisor – even if they do not feel that it requires medical attention. Failure to do so may result in a loss of Workers Compensation benefits and/or disciplinary action.

B. The Superintendent/foreman and the employee must determine the extent of the injury and determine whether medical attention is necessary. If so, the employee should be sent to the designated medical facility immediately.

C. Bay City Boiler employees will be informed at the time of hire and new job assignment of the designated medical facility. The name of the facility and directions from the jobsite will be posted.

D. For severe injuries/illnesses, call 9-1-1 and request the Paramedics; the Superintendent or foreman shall then notify Bay City Boiler management of the nature of the incident.

E. In all cases, the employees **will not** transport injured/ill co-workers unless authorized to do so by Bay City Boiler management. Transportation shall be provided by the Supervisor, Foreman or their designated responsible employee. As soon as possible after the incident, an Incident Report form must be completed by the foreman or supervisor and should be submitted to Bay City Boiler management within 24 hours. Always include: Job Name, Job Number and address, name of the injured person(s), date, time, location, what happened (brief statement), and witnesses, if any. Obtain an employee statement and witness statement (as applicable). The JHA and Safety Pre-Task Plan for that process involved in the incident will be reviewed as part of the incident investigation.

F. If an injured employee refuses medical attention, note the employee's refusal of treatment on their signed employee statement.

G. If the injury or accident appears questionable in nature, document this on the report and include reasons for questioning.

H. If the employee went to a medical facility or hospital for treatment, you must get a return to work order from the treating physician. If the return to work order notes modified duty required, contact the applicable Superintendent for direction.

I. Subcontractor personnel must inform Bay City Boiler about any incident or injury or emergency on site within 1 hour. If emergency vehicles are called to the site, as soon as the call is made inform Bay City Boiler site supervisor and/or call the Bay City Boiler office.

Report Near Misses

A. A “Near Miss” is described as a close call – and for reasons known or unknown, neither person, property nor equipment were damaged or destroyed.
B. All Near Misses are to be reported in the same manner as an injury.
C. An investigation will be conducted to determine cause. The JHA for that process involved in the Near Miss will be reviewed by the foreman and /or supervisor.
D. A report will be generated providing who, what, when, where, why, and how the Near Miss occurred.
E. The near miss report must be sent to Bay City Boiler management within 24 hours of the occurrence.

Requirements for Return to Work

A. The supervisor must receive a return to work slip from the doctor.
B. All employees seeking to return to work must be approved by Bay City Boiler management.
C. If the return to work slip states, “modified duty,” assign the employee tasks that will meet the work restrictions indicated.
D. If an injured employee wants to return to work without an okay from the doctor do not under any circumstances put them back to work. No exceptions.

Witness Report of Injury or Incident

Instructions: Report what you observed at the time the injury/illness, incident, or near miss occurred.

IMPORTANT: Return to your supervisor within 24 hours.

Name: _____ Last 4 of SS #: _____ Emp. #:_____

Address:_____

Location: _____ Project #: _____ Supervisor:_____

Name of injured/ill person (as applicable):_____

Where did the incident or exposure occur?

_____

_____

_____

What was the injured person doing when injured? (Be specific; identify tools, equipment, material, etc.)

_____

_____

_____

How did the incident or exposure occur? (Tell what and how it happened)

_____

_____

_____

Date of Injury/Incident? Day of Week:_____Date:_____

Time of Injury?_____A.M._____P.M.

Witness Signature:_____Date:_____

Employee Report of Injury or Incident

Instructions: Report what happened at the time the injury/illness, incident, or near miss occurred.

IMPORTANT: Return to your supervisor within 24 hours.

Name: _____ Last 4 of SS #: _____ Emp. #:_____

Address:_____

Job Location: _____ Project #: _____ Supervisor:_____

In your own words, describe what happened (Be specific, identify tools, equipment, material, etc.):

_____

_____

_____

What were you doing before the incident occurred?_____

_____

Where were you when the incident occurred?_____

_____

Were any other workers with you in the immediate area when the incident occurred? Yes ☐ No ☐
If Yes, who?_____

When did you first notice the onset of symptoms/issues?_____

_____

What do you believe contributed to the symptoms/issues?_____

_____

How could this incident have been prevented?_____

_____

What did you do immediately following the incident?_____

_____

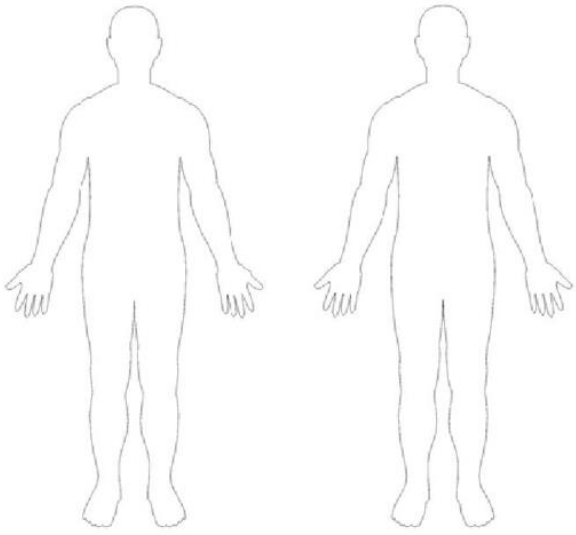
Date of Injury/Incident? Day of Week:_____Date:_____

Time of Injury?_____A.M._____P.M.

Employee Signature:_____Date:_____

Incident Investigation Report (1 of 3)

Instructions: Complete this form as soon as possible after an incident that results in serious injury or illness. (Optional: Use to investigate a minor injury or Near Miss that could have resulted in a serious injury or illness.)

<table>
<tr><td colspan="3">This is a report Of: ☐ Death ☐ Lost Time ☐ Dr. Visit Only ☐ First Aid Only ☐ Near Miss ☐ Property Damage</td></tr>
<tr><td>Day / Date of incident: M T W TH F S SU</td><td colspan="2">This report is made by:
☐ Employee ☐ Supervisor ☐ Team ☐ Final Report</td></tr>
<tr><td colspan="2">First reported to:</td><td>Date First Reported:</td></tr>
<tr><td colspan="3">Step 1: Injured employee (complete this part for each injured employee)</td></tr>
<tr><td>Name</td><td>Sex:
☐ Male ☐ Female</td><td>Age</td></tr>
<tr><td>Department:</td><td colspan="2">Job title and tasks at time of incident (laborer, operator, etc.):</td></tr>
<tr><td>Front Back
  </td><td>Nature of injury (most serious one):
☐ Abrasion, scrapes
☐ Amputation
☐ Broken bone
☐ Bruise
☐ Burn (heat)
☐ Burn (chemical)
☐ Concussion (to the head)
☐ Crushing injury
☐ Cut, laceration, puncture
☐ Hernia
☐ Illness
☐ Shock (electrical)
☐ Sprain/Strain
☐ Particulate in eye(s)
☐ N/A (no injury)
☐ Other:_____</td><td>This employee works:
☐ Regular full time
☐ Regular part time
☐ Seasonal
☐ Temporary

Time with this employer:

Time at this job:

Time in this trade:</td></tr>
</table>

Step 2: Describe the Incident (2 of 3)

Exact Location of the Incident:	Job Name & Number:	Exact Time:

What Part of Employee's Workday? ☐ Entering or Leaving Work ☐ Doing Normal Work Activities

☐ During Meal Period ☐ During Break ☐ Working Overtime ☐ Other:_____

Names/Contact Numbers of Witnesses (if any):_____

_____

_____

Number of Attachments:	Written Witness Statements:	Photographs:	Maps/Drawings:

What Personal Protective Equipment was Being Used (if any)?_____

_____

_____

Describe Step by Step Events that Led up to the Incident. Include Names of any Machines, Parts, Objects, Tools, Materials or Other Important Details:

_____

_____

_____

_____

_____

Step 3: Why Did the Incident Happen?

Unsafe Workplace Conditions: (check all that apply)

☐ Inadequate Guard
☐ Unguarded Hazard
☐ Safety Device is Defective
☐ Tool or Equipment is Defective
☐ Workstation Layout
☐ Lighting
☐ Ventilation
☐ Lack of Needed Personal Protective Equipment
☐ Lack of Appropriate Equipment / Tools
☐ Unsafe Clothing
☐ No training or Insufficient Training
☐ Atmospheric Conditions (Dust/Vapors/Fumes)
☐ Other:_____

Unsafe Acts by People: (check all that apply)

☐ Operating Without Permission
☐ Operating at Unsafe Speed
☐ Servicing Equipment that has Power to It
☐ Making a Safety Device Inoperative
☐ Using Defective Equipment
☐ Using Equipment in an Unapproved Way
☐ Improper Loading / Placement / Material Handling
☐ Taking an Unsafe Position or Posture
☐ Distraction, Teasing, Horseplay
☐ Failure to Wear Personal Protective Equipment
☐ Failure to Use the Available Equipment / tools
☐ Violation of Written Policy(ies) or Procedure(s)
☐ Other:_____

Why Did the Unsafe Conditions Exist?_____

_____

_____

_____

Injury and Incident Report (3 of 3)

Why Did the Unsafe Acts Occur?_____

Is there a Reward (such as “the job can be done more quickly” or “the product is less likely to be damaged”) that may have Encouraged the Unsafe Conditions or Acts?

☐ Yes ☐ No

If Yes, Describe:_____

Were the Unsafe Acts or Conditions Reported Prior to the Incident? ☐ Yes ☐ No

If Yes, Describe:_____

Have There Been Similar Incidents or Near Misses Prior to the Incident? ☐ Yes ☐ No

If Yes, Describe:_____

7.0 Training and Instruction

Orientation and Training

A. At the time of hire, all personnel will be given a New Employee Safety Orientation during the orientation. The new employee will receive a copy of the IIPP.

B. General training and safety awareness training on topics applying to our industry will be provided. Safety training is provided to ALL employees including but not limited to: Hazard Communication, Injury Illness Prevention Program, Emergency Action and Response, Fire Prevention, Fall Protection, Personal Protective Equipment, and General Workplace Hazard Identification.

C. Specific job training will be provided by the employee's foreman or supervisor which will include site/project specific safe work practices and procedures such as: Fall Protection, Forklift Safety Training, Ladder Safety, Lock out/ Tag out Training, Use of Tools and Equipment, etc.

D. Specialized training will be provided at the appropriate times throughout the tenure of the employee. The following outlines the critical times when such training is required by Bay City Boiler:

1. Initially upon hire if a new employee. This will occur as part of the Orientation Program. This will include the general and job specific hazards that the employee may be exposed.
2. Refresher training will be conducted as needed or required by Federal or State Regulations.
3. Individual, group, or all employees training will be given whenever there is an introduction of a new potential hazard, new equipment, or new procedure that needs to be communicated to the employees.
4. Employees transferring to a new position or employees returning to a previous job after an extended absence will be trained in the job position requirement similar to the new employee training requirements.
5. Training will be given to affected employees whenever Bay City Boiler becomes aware of employee(s) failing to understand how to perform their work tasks safely.

E. Supervisor Training

1. All supervisors will be trained to provide instruction and explanation to all new employees on Bay City Boiler' IIPP and Code of Safe Practices, as well as all other safety programs that would apply to their scope of work.
2. All Superintendents and Foreman should be trained in the OSHA 30-Hour Outreach class for construction. Supervisors will receive other safety training as applicable to the work activities.
3. Supervisors will be trained in proper jobsite inspection and documentation.
4. Supervisors will be trained in proper incident or injury and near-miss investigation procedures, and in documentation of all incidents.

8.0 Drug & Alcohol Policy Statement

Bay City Boiler is committed to maintaining a safe work environment, free from intoxicants, illegal drugs and substance abuse. We believe that we have an obligation to take all necessary steps to provide a safe work environment, which is free from known hazards.

Accordingly, Bay City Boiler has adopted the following Policy:

- Bay City Boiler strictly prohibits the possession, use, sale, distribution or transfer of drugs, narcotics, intoxicants or other illegal substance or drug paraphernalia while performing work for the company or while on company property, including vehicles. Company property, for the purpose of this policy, includes all property owned, leased, used or under the control of Bay City Boiler, such as offices, installations, parking lots, vehicles and job sites of a client. All employees must comply with this policy on company property, whether they are on duty or not.
- An employee may not report to work or remain on duty impaired or under the influence of drugs or intoxicants.
- An employee, who uses, possesses, sells, or provides illegal drugs, controlled substances, or intoxicants off-duty may be subject to discipline or discharge if the off-duty conduct adversely affects job performance or has a negative impact on the safety of company personnel or property.
- All employees are required to notify the company of any criminal drug statute conviction within five days after the conviction. Where the conviction is based on a workplace violation or otherwise relates to employee's ability to perform his or her job safely or efficiently, the employee will be subject to discipline or termination for either a first offence or a subsequent offence.
- Bay City Boiler will comply with any drug and alcohol testing requirements mandated by a Project, Owner, or General Contractor. A positive test result or refusal to take the test by a Bay City Boiler employee will result in discipline up to and including immediate termination.
- Employees who maintain a Commercial Driver's License (Class A) will be subject to random drug and alcohol testing.

Note: Bay City Boiler may request and ultimately require all subcontractors to implement a drug program, at least as stringent as our program, to participate with us in the effort to provide a safe and drug-free workplace.

9.0 Code of Safe Practices

General Safety Rules

1. All persons shall follow these safe practices and policies, render every possible aid to safe operations, and report all unsafe conditions or practices to their supervisor.
2. All employees are responsible for not working in any situation or condition that they feel is unsafe.
3. Employees are to immediately report any and all unsafe conditions to their supervisor.
4. Foremen shall enforce safety policies and verify employees' observance of rules and regulations, and will take action as necessary to insure safety at work.
5. Safety meetings must be held a minimum of weekly. All employees shall be present for all regularly scheduled safety meetings and must sign attendance sheet.
6. If you are injured on the job, you are required to immediately report the type and severity of your injury to your supervisor.
7. Always wear clothes that are suited to your job or task being performed. Never wear dangling or loose clothing or jewelry around moving tools or equipment. Hoop type earrings are not allowed while working. Footwear must be sturdy, leather work boots in good enough condition to provide adequate protection and traction for the work conditions.
8. The use of radios, tape players or other electronic music devices is prohibited.
9. No pets or other animals are allowed to be brought on site by any employee.
10. No children are allowed on the job site.
11. Required PPE, such as hard hats, safety glasses, gloves and reflective vests shall be worn at all times.
12. Alcohol and Drugs WILL NOT BE TOLERATED. If you are found to be under the influence of alcohol or non-prescription drugs (prescription drugs that can alter your ability to work safely must be pre-approved) during working hours, you will be terminated immediately.
13. All work shall be pre-planned and supervised to prevent injuries in the handling of materials and equipment. Remember to **"PLAN THE WORK AND WORK THE PLAN!"**
14. No one shall knowingly be permitted or required to work if their ability or alertness is so impaired by fatigue, illness, or other causes that it might unnecessarily expose the employee or others to injury.
15. Horseplay, running, fighting or any activity that may result in an injury or incident will not be tolerated and will subject to immediate discipline.
16. Keep work areas clean at all times. A safe project is a clean project. Keep all walkways, ramps, runways, stairwells and access/egress/designated passageways clear of debris and freely accessible.

Injury and Incident Reporting & Investigation

1. In order to provide prompt and adequate medical attention it is very important that you report all job-related injuries and incidents to your supervisor immediately.

2. If you are injured, you must notify your supervisor before seeking medical attention it at all possible.
3. A post injury or incident drug and alcohol test may be required for a work-related injury, accident or incident beyond first aid.
4. If you are involved in or witness an incident or injury in the workplace, please cooperate with your supervisor by helping determine what caused the incident or injury. Your observations and feedback are critical in helping Bay City Boiler prevent a similar occurrence.
5. All incidents and near misses shall be reported immediately to your supervisor for investigation and corrective measures, even if no injury or damage resulted.
6. Supervisors are responsible for submitting reports on injuries, illnesses or incidents and near misses to their Superintendent within 24 hours.

Hazardous/Flammable/Combustible Materials

1. Follow the instructions on the label and in the corresponding SDS for each chemical product such as lubricants and adhesives that you will use in your workplace.
2. Use personal protective clothing or equipment such as neoprene gloves, rubber boots, shoe covers, rubber aprons, and protective eyewear, when using chemicals labeled “Flammable,” “Corrosive,” “Caustic” or “Poisonous.”
3. Always use your chemical goggles and the face shield when handling chemicals labeled “Corrosive” or “Caustic”.
4. Do not use protective clothing or equipment that has split seams, pin holes, cuts, tears, or other visible signs of damage.
5. Properly dispose of gloves used for chemical handling after use. Always wash your hands after removing the gloves.
6. Smoking is only allowed in designated areas.
7. Combustible scrap, debris and waste materials (oily rags, etc.) must be stored in covered metal receptacles and removed from the worksite promptly.
8. Containers and tanks must meet OSHA regulations for the storage and handling of flammable and combustible liquids.
9. Oxygen and acetylene tanks shall be separated from fuel gas cylinders or combustible materials a minimum of 20 feet or by non-combustible barrier at least 5 feet high and having a fire-resistance rating no less than one-half hour.
10. Flammable liquids must be kept in closed containers when not in use.
11. Bulk drums of flammable liquids must be grounded and bonded to containers during dispensing.
12. Use a rubber cradle when transporting unpackaged glass bottles of chemicals.
13. Do not store chemical containers labeled “Oxidizer” with containers labeled “Corrosive” or “Caustic.”

Hand & Portable Power Tools

1. Safety glasses or goggles are required for eye protection when using hand and power tools. In addition,

face shields are required when grinding, chipping, drilling/shooting (with powder actuated tool) overhead, or using a chain or cutoff saw.

2. Inspect your tools prior to the start of the job. Damaged or defective tools shall not be used.
3. Do not remove, disengage, or disable any guard. Removing or rendering guards inoperative may be grounds for dismissal or other disciplinary action.
4. Power tools should never be raised or lowered by their cords or hoses.
5. All electrical equipment shall be grounded or double insulated, AND a GFCI shall be used. Any questions, contact your supervisor immediately.
6. On pneumatic tools (air tools) an approved safety check valve must be installed at the manifold or outlet of each supply line.
7. All air hose connections shall be secured with wire clips or whip lines.
8. Safety clips or retainers must be installed on all pneumatic tools to prevent the tool's accidental disengagement. When not in hand, all pneumatic tools are to be disconnected from the air supply.
9. Use tied off containers to keep tools from falling off elevated work platforms.
10. Carry all sharp tools in a sheath or holster.
11. Tag worn, damaged, or defective tools "Out of Service" and do not use them.
12. Do not use a tool if its handle has splinters, burrs, cracks, splits or if the head of the tool is loose.
13. When handing a tool to another person, direct sharp points and cutting edges away from yourself and the other person.
14. When using knives, carpet shears, or other cutting tools, cut in a direction away from your body.
15. Do not carry sharp or pointed hand tools such as screwdrivers, scrapers, or carpet snips in your pocket unless the tool or your pocket is sheathed.
16. Do not perform "makeshift" repairs to your tools.
17. Do not carry tools in your hand when you are climbing. Carry tools in tool belts or hoist the tools to the work area using a hand line.
18. Do not throw tools from one location to another, from one employee to another, or from elevated platforms.
19. Transport hand tools only in tool boxes or tool belts. Do not carry tools in your clothing.

Files

1. Do not use a file as a pry bar, hammer, screwdriver or chisel.
2. When using a file, grasp the handle in one hand and the toe of the file in the other.
3. Do not hammer in a file.

Hammers

1. Use a claw hammer for pulling nails.
2. Do not strike nails or other objects with "cheek" of the hammer.
3. Do not strike a hardened steel surface, such as a cold chisel, with claw hammer.

4. Do not strike one hammer against another hammer,
5. Do not use a hammer if your hands are oily, greasy, or wet.
6. Do not use a hammer as a wedge or a pry bar, or for pulling large spikes.
7. Do not use hammers that have mushroomed heads.

Screwdrivers

1. Always match the size and type of screwdriver blade to fit the head of the screw.
2. Do not hold the work piece against your body while using a screwdriver.
3. Do not put your fingers near the blade of the screwdriver when tightening a screw.
4. Use a drill, nail, or an awl to make a starting hole for screws.
5. Do not force a screwdriver by using a hammer or pliers on it.
6. Do not use a screwdriver as a punch, chisel, pry bar or nail puller.
7. Do not carry a screwdriver in your pocket.
8. Do not use a screwdriver if your hands are wet, oily, or greasy.

Pliers

1. Do not use pliers as a wrench or a hammer.
2. Do not attempt to force pliers by using a hammer on them.
3. Do not slip a pipe over the handles of pliers to increase leverage.
4. Use properly rated/test insulated hand tools for any approved energized electrical work.
5. Do not use pliers that are cracked, broken, or sprung.

Pneumatic Stapler

1. Do not discharge stapler unless it is touching the material and/or surface being stapled.
2. Keep your hand from under or behind material being stapled.
3. If something or someone distracts you from your work, discontinue the stapling operation until it is safe to resume.

Snips

1. Wear your work gloves when cutting materials with snips.
2. Do not use straight cut snips to cut curves.
3. Keep the blade aligned by tightening the nut and bolt on the snips.
4. Do not use snips as a hammer, screwdriver or pry bar.
5. Lock snips by engaging locking clip after use.

Tool Boxes/Chests/Cabinets

1. Use the handle when opening and closing a drawer or door of a tool box, chest, or cabinet.
2. Tape over or file off sharp edges on tool boxes, chests or cabinets.
3. Do not stand on tool boxes, chests or cabinets to gain extra height.
4. Do not open more than one drawer of a tool box at a time.

5. Close and lock all drawers and doors before moving the tool chest to a new location.
6. Do not use a tool box or chest as a workbench.
7. Do not move a tool box, chest or cabinet if it has loose tools or parts on the top.

Compressed Gas Cylinders

1. All compressed gas cylinders shall be capped and stored in the upright position and properly secured.
2. Oxygen cylinders will be stored separately from cylinder containing flammable gas (i.e. acetylene) by a minimum distance of 20 feet or by a 5-foot high non-combustible wall.
3. Carts shall be used to transport cylinders.
4. Regulators shall be removed, and the caps installed at the end of the day or when the cylinders are not being used.

Compressors & Compressed Air

1. Compressed air shall not be used to clean or blow off clothing or hair.
2. Compressed air shall not be used for any reason other than its intended use.
3. Compressed air shall not be used as breathing air.

Concrete Saw Cutting

1. Appropriate measures identified in the Silica Exposure Prevention Program will be utilized to reduce heat and prevent exposure to silica hazards.
2. Equipment must have properly functioning guards at all times.
3. Face, Eye and Hearing protection must be used at all times while saw cutting.
4. Proper protective gloves must be worn at all times.

Confined Space

A “Confined Space” is defined by OSHA as a space that exhibits *all* of the following conditions:

1. Large enough to enter Is large enough and so configured that an individual can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit; and
3. Is not designed for continuous human occupancy.

Bay City Boiler will not allow any of their employees or subcontractors to enter a Confined Space without first assessing the potential hazards within the Confined Space, performing atmospheric testing, providing a pre-job safety meeting with all affected personnel, and completing/posting a Confined Space Entry Permit. Each person required to enter a Confined Space should ensure the following:

A. Each Confined Space shall be posted, alerting all potential entrants that it is a Confined Space and that proper training and entry requirements must be followed prior to entry.
B. Forced or positive ventilation is required while welding, burning, or cutting is performed in a

Confined Space.

C. At least one person outside the Confined Space shall be in communication with the workers in the Confined Space at all time. The Confined Space atmosphere must be tested by a qualified person prior to entry into a Confined Space and the results recorded on the Confined Space Entry Permit.
D. The Confined Space shall be clean, and free of hazardous materials or chemicals.
E. Adequate lighting will be installed as needed. Only explosion proof lighting is allowed within a Confined Space.
F. All persons are advised on the PPE requirements for the work assignment within the Confined Space.
G. In the event that either the attendant at the entrance, or another entrant working within the Confined Space, expresses concern for the safety of themselves or other workers, all persons in the Confined Space shall leave the Confined Space immediately. The Confined Space supervisor shall be notified, and re-entry shall not be allowed until the reasons for the concerns and the safety of all entrants is assessed and the potential hazard or real hazard is eliminated.

Demolition

1. All areas of demolition will be fenced off and danger signage posted to keep unwanted personnel or pedestrians from entering the area of work.
2. All equipment will be operated by a competent operator and shall be inspected at the start of each day prior to any operation.
3. All equipment maintenance and prestart checklists will be filled out every day, prior to any operation.
4. A spotter will be used to aid equipment movement, high traffic areas and to protect the public when necessary.
5. Minimum PPE such as hard hats, gloves, safety glasses and type 3 safety vests must be worn at all times.
6. Constant communication between equipment operators and workers must be maintained.
7. The work area will require the use of water to prevent dust from being generated.
8. Back-up and travel alarms must be fully functional at all times on all equipment.
9. Housekeeping is of the utmost importance, especially on a demolition project. All demolition material must be kept in organized piles and out of walkways to mitigate slip/trip hazards.
10. Any demolition work that involves the dropping of material must be cordoned off with danger tape and all unnecessary personnel kept a safe distance away.
11. Any work that includes the demolition of a building/structure requires that the building/structure be inspected prior to demolition activities, daily, to ensure no personnel or vagrants have occupied the building.

Driving & Vehicle Maintenance

All company vehicles shall be inspected prior to use to ensure that the vehicle is in safe condition, and to ensure that all safety equipment is in safe operation such as: fire extinguisher, first aid kit, incident investigation kit including camera, insurance information and the vehicle has a spare tire and jack. All deficiencies shall be corrected prior to use.

A. Only authorized persons are allowed to operate a vehicle owned/leased by Bay City Boiler.
B. The parking brake must be set whenever the vehicle is parked and left unattended with keys removed.
C. Cell phones are not to be used while driving without hands free devices.
D. Texting shall not be permitted while driving.
E. Seat belts shall be worn by all personnel operating or riding in a company vehicle; this includes on the job site.

Electrical

1. All temporary electrical equipment such as extension cords, used on the jobsite shall be tested by an approved testing laboratory for its specific application. Proof of UL testing is required on all equipment. If the tag is removed or altered for any reason, the electrical equipment shall be removed from service.
2. All electrical tools and equipment must be grounded or double insulated.
3. Ground Fault Circuit Interrupters (GFCI) shall be used on all hand portable power tools.
4. Extension and temporary power cords must be designed for hard or extra-hard usage and be grounded
5. Damaged or defective electrical tools or electrical extension cords shall be removed from service. An electrical cord is considered damaged and shall be removed from service and destroyed if the grounding leg is cut or removed from the electrical connection.
6. Covers or barriers must be installed on boxes, fittings, and enclosures. Report all deficiencies immediately to your supervisor.

For additional information on electrical equipment refer to the section on how to control hazardous energies through Lockout/Tagout procedures located within this document or refer to the Bay City Boiler Safety Manual.

Emergency Response Plan

1. Employees who are not trained and certified to provide emergency medical assistance are not required to respond to medical emergencies. Should employees choose to respond to such emergencies, it is on a "Good Samaritan" basis. In case of serious injury, dial "911" or local Emergency Medical Services number for that county or otherwise seek the immediate assistance of trained medical personnel.

2. Employees are required to familiarize themselves with the location of the posted emergency telephone numbers for police, fire and medical assistance. Employees will be trained in the content of the company Emergency Response Plan prior to starting work.
3. In the case of an injury, notify other workers in the area that you need assistance. Protect the injured employee from further injury.
4. Inform supervisory personnel and/or the Bay City Boiler office of the nature of the emergency as soon as is possible.
5. Before you dial "911" you should be sure that you can readily identify the location where the emergency has occurred.
6. A first aid kit will be made available (check with your supervisor as to location) on each job.
7. Emergency evacuation: in case of fire or other emergency, all employees will meet at a pre-designated point. The supervisor will verify that all employees are accounted for.
8. Any changes in emergency procedures will be discussed during regular safety meetings or as required.

Equipment/Machinery

1. Operate machinery with all guards in place. Tampering with safety devices is cause for immediate disciplinary action (i.e. pinning back saw guards, safety springs in nail guns).
2. Do not operate any machine you are not familiar with; only those persons properly trained and authorized may operate equipment.
3. Machines must never be cleaned, adjusted or repaired until after the machine is turned off at the power source by either unplugging or using lock out tag out and verifying zero energy exists, before starting work.
4. Any defects in materials, machinery, tools or equipment must be reported immediately to a supervisor.
5. Do not leave tools, materials or other objects on the floor, which might cause others to trip and fall.

Fall Protection

1. Bay City Boiler requires its employees and subcontractors to adhere to our Company Fall Protection Program requirements of:
   A. 100% tie off requirement when working 6 feet above ground surface, floor or water, around excavations 6’ or deeper, or within six feet from a fall hazard such as a leading edge. Failure to comply will result in disciplinary action up to and including termination of employment, and
   B. No employee shall use or be required to use any fall protection equipment without first being trained on the safe use of said equipment.
   C. All personal fall arrest, personal fall restraint and positioning device systems shall be inspected

by the employee prior to use. Any defective equipment shall be removed from service immediately.

D. Lifeline and anchorages shall be capable of supporting a minimum dead weight of 5,000 pounds.
E. Body Belts are not allowed to be used for any reason on any Bay City Boiler work site.
F. Fall protection equipment shall be used for its intended use only. Belts, harnesses, lanyards, and lifelines shall not be used as lifting devices.

Fire Protection and Prevention

1. Good housekeeping is the first rule of fire prevention.
2. Oily rags, paper, shavings, trim, pallets, insulation, scrap wood and defective slings, wire rope, and other materials shall be disposed of properly or stacked neatly for removal.
3. Flammable liquids shall be kept to a minimum and stored in approved container.
4. Ensure that all fire extinguishers and other firefighting equipment is ready for use. Any defective or discharged fire extinguisher shall be removed from service and replaced immediately.
5. Only approved solvents shall be used for cleaning and degreasing.
6. Prior to any work that creates sparks or ignition sources, check your area to ensure that all combustible or flammable material is removed.
7. Do not attempt to fight a fire unless you have been trained and you feel confident that you can bring it under control.
8. Report all fires no matter how small to your supervisor immediately.
9. Fire extinguishers or similar firefighting equipment should be located within 75’ of operations at all times.

First Aid & First Aid Stations

1. All Bay City Boiler employees are instructed on where to find information on First Aid and where to receive medical treatment during their new hire orientation, upon reassignment to a new job location, and periodically during the weekly tool box safety meetings.
2. Medical supplies and information are located in the Bay City Boiler job site office. If you have any questions, contact your supervisor immediately.
3. Prior to the start of any project, know where the first aid kit is located, and where to go if medical assistance is needed.
4. Report all injuries immediately, no matter how minor to your supervisor. He or she will assist you with first aid if necessary.
5. Notify your supervisor or field office prior to leaving the jobsite for any reason of any injury or illness whether work related or not.
6. In the event of an injury, do not move the injured person unless it is necessary to prevent further injury. Contact your supervisor immediately for assistance.

7. Prior to returning to work after a disabling injury or illness (work related or not) you must present a release or medical clearance from your attending physician to your supervisor.
8. If you have sustained an injury or illness and your physician has determined that you are to be placed on modified or restricted duty, inform your supervisor.

Forklifts

1. Only authorized, trained personnel are allowed to operate company equipment including forklifts.
2. Do not loan or allow another contractor to use Bay City Boiler rented/owned forklifts or other company equipment without authorization from management.
3. Inspect all Bay City Boiler equipment including forklifts priors to use. Ensure that the back-up alarm is in working condition. Report any deficiencies to your supervisor.
4. Seat belts shall be worn any time that the forklift or industrial truck is in operation.
5. No riders shall be permitted
6. Do not work, walk or pass under an elevated load.
7. Drive slowly, going up or down a grade or on uneven surface.
8. Carry the load as low as possible
9. Do not over load – Know the load weights and the capacity of your forklift.

Fueling

1. Ensure that all machinery is turned off prior to the start of the re-fueling.
2. Ensure that a fire extinguisher is available. Check the size and chemical type to ensure that you have the right one. If you have a question concerning the fire extinguisher, contact your supervisor prior to re-fueling the equipment.
3. Avoid fuel spills; clean up all fuel spills immediately.
4. Implement all project specific requirements and ensure that all environmental controls are in place prior to refueling.

Hazard Communication

Every employee has the *Right to Know* what chemicals or hazardous materials are being used in his/her workplace and are to be trained on their safe use.

1. SDS for each chemical to which you will be exposed shall be available for your review.
2. Training will be provided before you will be directed to use any hazardous substance. The training will include information needed to determine what precautions and PPE are needed to perform the task safely.
3. If you have any questions about the hazards or safety precautions to take, contact your supervisor immediately and prior to using the hazardous substance.
4. All containers shall be labeled as to their contents. This includes smaller secondary containers such as spray bottles.

5. All unmarked, unlabeled containers both large primary and small secondary containers shall be disposed of as hazardous waste.
6. DO NOT SMELL or TASTE ay substance to try and make an identification - read the label. This unsafe action could cause permanent injury.

Hearing Protection – Noise

1. How do I know when to wear Hearing Protection?
2. Rule of Thumb – If you have to raise your voice when talking to another person at approximately 3 feet or arm's length you should wear hearing protection.
3. Hearing protection consists of earplugs or earmuffs. The use of cotton or other material for hearing protection is unsafe and prohibited.
4. All employees are required to use hearing protective equipment when the ambient noise is 85 decibels (dB) or greater and in all areas designated as a high noise area.

Housekeeping

1. Housekeeping is to be emphasized at all Bay City Boiler work sites.
2. Scrap materials and rubbish are a fire and potential hazard. Do not allow excess material and scrap build up in work areas.
3. Do not leave tools and materials where they can create a hazard for others. Put them in the gang box or return them to the tool room.
4. Toilets and drinking water containers are provided for convenience and comfort. Please help keep them clean and sanitary. Report any problems to a supervisor immediately.
5. Keep all stairways, ladder landing, ramps, scaffolds, platforms, walkways and work areas free from material and debris.

Ladders

1. All ladders used by Bay City Boiler and its subcontractors will be certified ANSI Type 1A.
2. Job made ladders must be constructed and conform to the established standards.
3. All damaged ladders, shall be removed from service and shall NOT be used.
4. All straight ladders and extension ladders shall be secured at the top.
5. The base of extension ladders shall be set back a safe distance. Bay City Boiler enforces the 1:4 rule, that is – the base of the ladder is set back one foot for every four feet of height.
6. Face the ladder at all times when ascending or descending.
7. Do not carry objects up a ladder. Keep both hands free for climbing.
8. Do not use metal ladders around electrical exposures.
9. Folding ladders are NOT to be used as straight ladders.
10. Never stand on the top 2 steps of a folding ladder.

Lockout – Tagout (LOTO)

1. All sources of energy such as electrical, mechanical, hydraulic, pneumatic, chemical and thermal are considered to be part of the Bay City Boiler Energy Control Program (LOTO).
2. Only authorized persons who have completed training on the LOTO program are to perform any duties requiring LOTO.
3. Each employee involved in Lockout or Tagout procedures will be provided with their own personal lock. Each employee shall isolate all potential energy sources by installing their lock.
4. At no time shall any Bay City Boiler employee or any of their subcontractors remove locks or tags from potential energy sources other than your own lock or tag.
5. Bay City Boiler employees are prohibited from working on or near any electrical equipment, lines, mechanical equipment, or pressure systems which could be energized or activated, or on vessels, piping systems or equipment containing hazardous materials which could be activated or released without first implementing the Bay City Boiler Lockout Tagout procedures.

Machine Guarding

1. Tools equipped with shields or guards shall not be operated unless the proper guard or shield is in place.
2. All pulleys, belts, drums, and other exposed rotating shafts shall be guarded at all times with the exception of maintenance and service at which time the equipment or prime mover shall be locked out per the Bay City Boiler Lockout – Tagout Procedure.
3. No equipment shall be allowed to be operated with an exposed pulley or belt system.
4. All equipment shall have the required guard system per the manufacturer recommendations.

Manlifts & Aerial Platforms

1. Only authorized and trained personnel shall operate an aerial device or an elevated work platform.
2. Never exceed the load limits set for manlifts and aerial platforms. Consult the operator's manual for load limits.
3. Never sit, climb or sit on the edge of the basket or platform, or use planks, ladders or other devices to gain greater height. Failure to comply with this policy may result in disciplinary action up to and including termination.
4. Never use Manlifts or aerial platforms during high winds.
5. Lift controls shall be tested in accordance with the manufacturer's recommendations and/or instructions prior to use to determine safe operating conditions. If the equipment is defective, do not use the equipment. Contact your supervisor immediately.
6. Any employee, in an elevated aerial device shall be secured to the boom, basket or tub through the use of a full body harness and lanyard per the manufacturer's recommendations and Bay City Boiler' Fall Protection Program.

Material Handling – Storage & Disposal

1. All material must be properly stacked and secured to prevent slipping, falling or collapse.
2. Aisles, stairs, and passageways must be kept clear to allow safe movement of employees and equipment and provide access during emergencies.
3. Use proper techniques when handling material:
    - Get close to the load
    - Keep your back straight
    - Lift gradually, using your legs (don't jerk)
    - Assess the load, test it for weight, and if it is too heavy or awkward, get help.
    - Pipe, conduit and bar stock must be stored in racks or stacked and blocked to prevent movement.
    - Never stack material where it could become a tripping hazard.
    - Nails must be removed or bent over at the time of their removal. Never stack lumber with protruding nails.
    - Separate all materials prior to disposal. Hazardous or contaminated material shall not be disposed as normal trash.
    - Dispose oily rags and chemicals in a container designed for that purpose. If unsure, contact your supervisor.

Personal Protective Equipment (PPE)

1. Bay City Boiler will make every effort to eliminate all hazards in your work place. If elimination is not possible through engineering controls, administrative controls will be implemented to ensure the safety of all persons working at the worksite.
2. Administrative controls include a process that will limit the number of persons working in the area, the amount of time in the area, exposure to the hazard, and/or contact with a potential hazard.
3. After an assessment of the hazard is completed and it is determined that the hazard cannon be controlled, and work still needs to be performed in the area, PPE will be issued to each person working in the area.
4. The supervisor will determine the required PPE needed for the task and the supervisor is responsible for ensuring that each person under his/her charge wears the required PPE.
5. The following PPE must be worn when working on Bay City Boiler projects:
    - Company hard hat.
    - ANSI Approved Safety glasses with side shields.
    - Orange or lime green vests or highly visible shirts – when working in high vehicle traffic areas. Where required (such as for road flagging operations), vests worn must be labeled ANSI Class 2 or 3.

- Shirt with sleeves (no tank tops or sleeveless shirts).
- Work boots – NO tennis shoes or sandals.

6. The following safety equipment must be **worn as required:**

- Hearing protection – ear plugs or earmuffs.
- Chaps when using a chain or cutoff saw.
- Face shield when grinding, chipping, drilling/shooting (with powder actuated tool) or using a chainsaw or cutoff saw.
- Clear goggles or gasketed safety glasses shall be worn under the face shield when chipping, drilling/shooting (with powder actuated tool) overhead or using a chain or cutoff saw.
- Tinted goggles or welding hood when welding, cutting or brazing.
- Leathers when welding, cutting or brazing.
- Respirators when dust or other respiratory hazards require it.
- Full body harness when working over 6 feet in height (100% tie off requirement).
- Gloves when handling rough or sharp materials or when handling chemicals. Voltage rated, and tested gloves are required for approved energized electrical work and verification of zero voltage.
- Other PPE such as Tyvek or paper coveralls shall be worn as the need arises.
- If respiratory protective equipment is required, only employees that have received training, received a medical exam, and have been fit-tested with the required respirator are allowed to use this equipment.
    - If you are assigned to use a respirator and you have not received the required medical exam, training and fit test, inform your supervisor. DO NOT use a respirator until you have received the required testing.
    - Using a respirator without the proper testing could result in personal injury or even death.
- Toe guards and metatarsal guards must be worn when using jackhammers and compaction equipment.
- Long sleeves or Kevlar arm guards when reaching into locations with sharp exposed edges.

Respiratory Protection

1. Only trained, qualified, and medically examined personnel are allowed to use ANY type of respirator protection, including particulate filtering face pieces (dust masks that carry an NR rating).
2. Your supervisor is responsible for determining what hazards you will encounter and what respiratory protection is required.
3. Persons with facial hair, such as a beard, mustache, and/or long side burns, shall not be allowed to wear a respirator due to the inability to ensure a tight seal on the facepiece.
4. Consult the SDS for the hazard to determine the proper respirator selection.

5. Never use a respirator (negative pressure) in an oxygen deficient atmosphere. Oxygen deficient atmospheres require either SCBA or supplied air equipment.
6. Bay City Boiler does not allow entry into any space that has been determined to be immediately dangerous to life or health (IDLH).
7. Voluntary use of filtering face-pieces (i.e. dust masks with two straps) will require employees to review and sign a Voluntary Respirator Acknowledgement form. A copy of this form is available from the Corporate Office.
8. Voluntary use of a tight-fitting respirator will require medical evaluation, training, fit-testing, and completion of a Voluntary Respirator Acknowledgement form. A copy of this form is available from the Corporate Office.

Trench & Excavations

1. All walkways over the trench or excavations shall have standard guardrails.
2. Excavations or trenches that could undermine existing footings, structures, trees, sidewalks, etc., must be supported.
3. A trench can be a “Confined Space” if there IS or there IS A POTENTIAL for a contaminated atmosphere. Refer to “Confined Space” for additional information.
4. Always locate underground utilities or services within your trench or excavation before you start to excavate. Contact the regional notification center (i.e. 811) 48 hours before you intend to dig.
5. All trenches and excavations shall be barricaded.

Vehicle Operations

1. Only authorized employees are permitted to operate company vehicles.
2. Company vehicles are to be used for company business ONLY unless prior approval has been authorized.
3. Be careful when you drive, drive defensively and obey ALL traffic and highway laws.
4. Always wear your seatbelt. This includes the passenger.
5. Report all incidents as soon as possible to your supervisor. Inspect your vehicle and report any defects.
6. If your drivers’ license expires or is suspended, DO NOT drive a company vehicle. Notify your supervisor immediately.

Welding, Cutting & Brazing

1. Make sure welding equipment is installed properly, grounded and in good working condition.
2. Wear the proper PPE for the task at hand including eye, face, hearing, clothing and respiratory protection as required.
3. Keep your work area clean and free of hazards. Make sure that no flammable or combustible materials are in or near your work area.

4. Handle all compressed gas cylinders with extreme care. Install caps when not in use. Secure cylinders to the cart, wall or other structural support. When empty, return to the storage area.
5. Do not cut or weld in a Confined Space unless special precautions such as additional ventilation are provided in accordance with the Bay City Boiler Confined Space Program.
6. Use welding curtains or other means to shield the welding arc in areas where other workers work or may pass.
7. Never use oxygen to blow off cloths or clean slag from the weld and never use oxygen as ventilation or purge.

Wildfire Smoke Protection

1. Employees must be protected for airborne hazards associated with wildfire smoke while working.
2. N95 type respirators must be provided and do not require compliance to the respirator requirements when:
   a. The current Air Quality Index (AQI) for PM2.5 is 151 or greater due to wildfire smoke, regardless of the AQI for other pollutants; and
   b. Outdoor work is performed, and you can reasonably anticipate that employees may be exposed to wildfire smoke.
3. Management and Supervisors are responsible for:
   a. Understanding and implementing the Wildfire Protection Policy located in the Safety Manual, as required.
   b. Identifying if harmful exposure levels exist daily.
   c. determining employee exposure to PM2.5 for worksites covered by this regulation before each shift and periodically thereafter, as needed to protect the health of the employee.
4. Employees are Responsible for:
   a. Applying the knowledge learned in training and complying with this policy as required.
   b. Assessing their own safety and communicating concerns to their immediate supervisor as soon as possible and evacuating unsafe conditions.

Work Surfaces, Walkways & Passageways

1. Make every effort to keep your work area free from tripping hazards. Scrap material, protruding nails, welding leads, hoses, extension cords and similar tripping hazards should be removed or secured in such a way to eliminate trip, slip and fall hazards.
2. Use barricades and guardrail systems to secure the area where a section of flooring or an open hole exists.
3. All open holes where an employee could trip and/or fall shall be barricaded or covered with a covering, which is capable of withstanding the traffic in the area. A sign stating: “OPEN HOLE –

DO NOT REMOVE" or similar, shall be placed on the covering to warn all persons of the potential hazard. Ensure hole covers are secured in place.

4. Be sure that all handrails and toe boards meet the requirements and are in good repair. Any unsafe handrail or guardrail system should be reported to your supervisor immediately. Place flagging at the unsafe area to warn others of the potential hazard until the handrail or guardrail is repaired.
5. Do not stand on, work from or tie off your fall protection to a handrail or guardrail system. They are not designed for those purposes.
6. Inspect your work area to ensure that all walkways and passageways are free of hazards.

Pandemic Exposure Protection

1. Follow all controls put in place by your project, company, or facility you are working in.
2. For guidance on how to protect yourself, refer to the Pandemic Response Policy located in the Safety Manual.

Valley Fever Exposure Prevention

1. When performing work that disturbs the natural ground in the following counties, training and protective measures must be taken to minimize exposure to the fungus called "Coccidioides immitis" that lives in the top 2 to 12 inches of soil in many parts of California.
2. Counties where controls are required to be put into place before work starts are: Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Santa Barbara, Tulare, and Ventura.
3. Contact your supervisor for direction on the correct work methods and PPE required to work in these counties.

Employee Acknowledgement Statement

Note to the Employee

We are asking you to sign the following statement as a condition of your employment with Bay City Boiler. It is not to deny you any benefits or compensation due to you should you become involved in a work-related injury. Rather, it is our sincere hope that by requesting each employee to comply with these safety standards, we will provide you with a safe place to work. Be sure that you understand the following paragraphs before you sign this document. Talk to your supervisor if you have any questions.

Employee Statement

In case I am injured, no matter how minor, while in the course of my work with Bay City Boiler, I shall report this injury to my foreman or supervisor immediately.

I have received and read a copy of the Bay City Boiler “Injury and Illness Prevention Program” and “Code of Safe Work Practices.”

I understand the company’s safety policies and procedures as well as the disciplinary actions that will be taken if I do not comply with these safety standards.

Employee (Print Name) _____ Date_____

Employee’s Signature _____

10.0 Hazard Communication Program Overview

It is the policy of Bay City Boiler that the first consideration of work shall be the protection, safety and health of all employees and the environment. Bay City Boiler has developed a Hazard Communication Program to ensure that all employees receive adequate information about the possible hazards of any hazardous substance used in the company's operations and processes. An overview of the Hazard Communication Program is included in this section; refer to the Bay City Boiler Safety Manual for the complete program.

Employee Right to Know

A. Our Hazard Communication Program has been developed to ensure that our workers have an understanding of the substances and hazards which they will encounter during the normal course of work. Information on the "Right to Know" standard is provided to all employees during their initial Safety Orientation.
B. This program is available for review by all employees, their legal representatives, medical providers and governmental agencies following the Right to Know standards.
C. Bay City Boiler does not manufacture any hazardous substance to its knowledge, and does not intend to evaluate any of the hazardous substances they purchase from suppliers and/or manufacturers. Rather we have chosen to rely upon the evaluation performed by the manufacturers and distributors of the substances to satisfy the requirements for hazard determination. This information is found in the Safety Data Sheets (SDS) obtained from each supplier of the hazardous substance.
D. Although we only use a relatively small number of hazardous chemicals, we adhere to the full notification and training of our employees and staff. An inventory list is maintained of those materials determined to be hazardous that are typically found on, and used on our project sites. The list will be updated when new materials and substances are brought into the work place, and will be reviewed periodically to ensure that all substances are properly shown.
E. All affected employees will be provided training on the new substance or material prior to actual use of the substance.

Container Labeling

A. No container of hazardous substance will be released for use unless the container is correctly labeled, and the label or other form of warning is legible and readable.
B. The label must contain the following:
    1. The identity of the hazardous substance
    2. The appropriate hazard warnings
    3. The name and address of the manufacturer, importer or other responsible party
C. Portable containers used solely by the employee who has transferred the substance from a large labeled container to smaller container must:
    1. Take only enough material to perform the required task, i.e. less than a qt. of paint from a 5-gallon

bucket.

2. Label the small container i.e. grease, alcohol, paint, etc.
3. Do not leave the container unattended.
4. Dispose of the unused material properly.

Safety Data Sheets (SDS)

A. Copies of SDS for all hazardous substances to which our employees may be exposed are kept in a binder in the project office.
B. Additional copies are maintained in the Corporate Office.
C. SDS are available to all employees, at all times, upon request.
D. The Bay City Boiler Management will oversee the maintenance of the master binder, and ensure that each foreman maintains an up-to-date binder of SDS's.
E. Each Superintendent will be responsible for reviewing all incoming SDS for new and significant health/safety information. He or she will ensure that any new information is passed on to inform the involved employees.
F. The Superintendent is responsible for ensuring that each affected employee is provided with the training and PPE needed to perform their task safety.

Chemical Inventory List

Bay City Boiler will maintain a chemical inventory list comprised of hazardous chemicals known or expected to be present in our workplace. Anyone who may come into contact with any of the hazardous chemicals will have access to the Safety Data Sheet for each chemical and to be able to identify the hazardous properties associated with those chemicals and how to protect themselves from those hazards. The hazardous chemicals on the list can cover a variety of physical forms including liquids, solids, gases, vapors, fumes, and mists.

A copy of this list will be available at all times and accessible during work hours.

Bay City Boiler does not manufacture any chemicals and relies on the content and accuracy of the SDS supplied by the manufacturer to identify the hazards associated with chemicals.

Hazardous Chemical Inventory List

Date	Chemical Name	Use	Location	SDS on File (Yes/No)

11.0 FALL PROTECTION POLICY

A. Purpose

This policy is designed to establish minimum requirements for any employee working at heights that exceed 6 feet from a lower level and to comply with Title 8, §1670. “Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices” and ANSI Z359.1 “American National Standard Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.”

B. Roles and Responsibility

Although all supervisory personnel will control and enforce the Fall Protection Program policy and procedures, it is each employee’s duty and responsibility to ensure that he/she is following the Fall Protection Program without exception. Failure to comply with the Bay City Boiler Fall Protection Program will result in disciplinary action, up to and including dismissal or termination of employment.

1. Authorized Person

a. Has a thorough understanding of this Fall Protection Policy and is confident in their ability to effectively select, inspect, wear, and maintain proper fall protection equipment at all times when working at heights.
b. Maintains demonstrated knowledge and has attended documented fall protection training necessary to properly wear, effectively connect to a rated anchorage point and properly care for their fall-protection equipment.
c. Follows all fall-protection hazard controls developed by a Competent Person.

2. Competent Person

a. Has a thorough understanding of the Bay City Boiler Fall Protection Policy and is confident in their ability to effectively oversee the implementation of the Fall Protection Policy.
b. Is authorized by Bay City Boiler to develop project fall protection programs and oversee authorized personnel while they are wearing fall protective equipment.
c. Authorized to immediately implement corrective measures to eliminate or mitigate fall hazards.
d. Is knowledgeable and experienced in the application and use of fall-protection equipment and is able to identify fall hazards by conducting fall hazard analysis.
e. Supervises selection and use of fall protection equipment.
f. Verifies equipment is compliant.
g. Verifies workers are trained.
h. Conducts equipment inspections and removes damaged equipment from service.

3. Qualified Person

a. Supervises the design, selection, installation, and inspection of fall protection equipment.
b. Participates in incident investigations after a fall, near miss or serious incident.
c. Has specialized training (to fulfill requirements such as those for registered professional engineers), has extensive knowledge and experience in fall protection, and has successfully demonstrated an ability to solve problems related to fall protection.
d. Is responsible for designing specialized fall-protection systems and equipment, and for evaluating and approving anchorage points.
e. Works with the Competent Person to ensure Fall Protection Policy is up to date and effective in the prevention of workplace falls from heights.

C. General Requirements

1. A Qualified Person is required for writing site or task specific Fall Protection Plans (FPP) which may be required for specialized or task specific fall protection systems. In addition, each FPP is required to have a fall protection rescue procedure that outlines how you will perform rescue operations for each location fall protection is used. The use of all fall protection, fall prevention, and rescue equipment must comply with the manufacturer's recommendations.
2. Fall protection requirements cover any walking or working surface that is 6 feet or more above a lower level or the ground and includes flat working surfaces, stairways, and roof or floor openings.
3. Whenever possible, fall protection should be provided by the use of guardrail systems, or engineering controls.
4. When guardrails cannot be used, the use of personal fall protection systems consisting of an anchorage point, a lanyard, and a harness will be used if possible.
5. Employees must be protected from falling through holes in any walking or working surface that is 6 feet or more above a lower level or the ground in California. A hole is considered to be any opening that is at least 2 inches wide by 2 inches long.
6. All holes meeting the definition above must be covered. The cover must be secured to the surface and must be labeled **"OPEN HOLE - Do Not Remove."** Larger holes, such as those created from roof mounted HVAC units, elevator shafts, etc., can be protected by the use of guardrail systems, although floor covers can be used as long as they meet the strength requirements, and are property marked.
7. Hole covers must be made of a material that will support the weight of any person, intended equipment or item that may have to pass over it.

8. Skylights pose a unique hazard to workers on roofs. While working near skylights, employees must ensure that protective measures have been taken to prevent the possibility of falling through the skylight.
9. When leading edges or floor openings are above dangerous equipment, guardrails or a personal fall restraint system must be used regardless of the height of the fall potential.
10. Whenever personnel are working on a higher floor near a floor opening, or on a scaffold, or wherever pedestrian or vehicle traffic must pass under the work area, toe boards and/or screens must be installed to protect workers and pedestrians below. Protection for the workers and pedestrians can also be accomplished by barricading the area below the opening or leading edge and prohibiting personnel in the area.
11. When working on ladders employees must use personal fall protection if the work requires them to be above adjacent guardrails or wall openings.

Fall Protection Systems include:

1. Passive Fall Protection Systems

A "Passive Fall-Protection System" (PFPS) means that the fall hazard is controlled by means other than the wearing of personal protective equipment (PPE). Examples are guardrails, safety nets, warning lines, etc. All passive fall-protection systems require vigilance, whether through pre-work inspections, group instructions, or other means of communication.

A hazard evaluation may determine that a personal fall-protection system or other protective means may be required for the worker's protection even though working from a ladder or scaffold does not normally require fall protection. For example, if the task requires working from a step stool, or a level above the working surface next to the guardrail, the guardrail is no longer 42 inches above the "new" working surface and fall protection will be required to perform the work.

a. **Guardrails**

i. The most common passive fall-protection system is a guardrail. The height of the top rail of a guardrail system must be 42 inches (plus or minus 3 inches) above the walking/working surface. When conditions warrant, the height may exceed a height of 45 inches if all other criteria are met.

ii. Midrails, screens, mesh, or intermediate vertical members must be installed midway between the top rail and the walking/working surface, unless a parapet wall of 21 inches or higher has been installed.

iii. Top rails must be a minimum of a 1/4-inch in diameter (preferably a 3/8-inch cable) or a suitable thickness to meet the strength and rigidity requirements. If wire rope is used, it must be flagged at 6-foot intervals with high-visibility material.

iv. Many roof activities, such as repairs and servicing, are done on a semiannual or as-needed basis. If the activity does not warrant the installation of a permanent guardrail, temporary guardrail systems are available. Personal fall-arrest systems may also be used, but the walking/working area must be surveyed by a Competent Person, and approved anchorages must be designated either by a Competent Person or a Qualified Person.

b. **Safety Nets.** Safety nets are an option in certain cases and a Qualified Person must be involved in providing oversight for their selection and installation.

i. Where the elevation is 25 feet or more above the ground, water surface, or continuous floor level below, and when the use of personal fall arrest systems, personal fall restraint systems, positioning device systems or more conventional types of protection are clearly impractical, the exterior and/or interior perimeter of the structure shall be provided with an approved safety net extending at least 8 feet horizontally from such perimeter and being positioned at a distance not to exceed 10 feet vertically below where such hazards exist, or equivalent protection provided safety nets shall extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net.	**Minimum required horizontal distance of outer edge of net**
Up to 5 feet	8 Feet
More than 5 feet up to 10 feet	10 Feet
More than 10 feet but not to exceed 30 feet	13 feet

b. Nets shall be hung with sufficient clearance to prevent user's contact with the surfaces or structures below. Such clearances shall be determined by impact load testing.

c. **Warning Line Systems-Controlled Access Zones**

i. **Roofers**

a) A warning line must be erected not less than 6 feet from the roof edge.
b) No worker is allowed in the area between the warning line and the roof edge without active fall protection or a safety
c) The warning line must meet or exceed the requirements in Title 8 which requires that the warning line: (1) be constructed of rope, wire, or chain and flagged at intervals no greater than 6 feet; (2) be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches above the walking/working surface and its highest point is no more than 39 inches above the walking/working surface; (3) be capable of resisting a knock-over force of at least 16 pounds applied horizontally against the stanchion at 30 inches above the walking/working surface perpendicular to the warning line and in the direction of the floor, roof, or platform edge; (4) have a minimum tensile strength of 500 pounds; and (5) be attached at 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 adjacent sections before the stanchion tips over.

ii. **Non-roofing Operations**

a) The warning line must be erected not less than 15 feet from the roof edge.
b) No employee is allowed in the area between the warning line and the roof edge without active fall protection. There are no exceptions.
c) The warning line must meet or exceed the requirements in Title 8 which requires warning line (1) constructed of rope, wire, or chain and flagged at intervals no greater than 6 feet; (2) rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches above the walking/working surface and its highest point is no more than 39 inches above the walking/working surface; (3) capable of resisting a knock-over force of at least 16 pounds applied horizontally against the stanchion at 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge; (4) having a minimum tensile strength of 500 pounds; and (5) attached at 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 adjacent sections before the stanchion tips over.

d. **Hole Opening Covers**

i. The following must be covered: any gap or void 2 inches or more in its least dimension in a floor, roof, or other walking/working surface, and any gap or void in a wall or partition 30 inches or more in height and 18 inches or more in width through which a person may fall.

ii. Hole opening covers in roofs, floors, and other walking/working surfaces must be secured in place and capable of supporting the weight of any load that may be imposed at any one time. All hole opening covers must have “DANGER – “HOLE” or “COVER” clearly written in RED on the cover to provide warning of the hazard.

iii. Temporary covers for roadway holes are to be steel street plates capable of supporting twice the axle weight of the heaviest vehicle expected to cross the cover.

e. **Ladder Wells/Cages.** Design criteria for ladder wells and cages vary greatly depending on the type, height, and/or use of the ladder.

f. **Safety Monitors**

i. A safety monitor is a trained and authorized worker who must be competent in recognizing fall hazards. A safety monitor’s only job on a roof is to ensure that previously trained roofers are warned when moving too close (within 6 feet) to a dangerous edge. He or she must be positioned on the same level of all workers being monitored and must be within vocal distance of them. Constant vigilance is required, because lateral and backward movement of 4 to 5 feet per second is not uncommon.

ii. Safety monitors are not permitted to work on roofs of a pitch greater than 4 in 12 or that have equipment that obstructs vision or has a noise level that prevents any worker from immediately hearing a verbal warning of danger. Duties of the safety monitor include:

iii. Warning the worker when it appears that the worker is unaware of a fall hazard or is acting in an unsafe manner

iv. Remaining on the same walking/working surface and within sighting distance of the worker being monitored

v. Remaining close enough to communicate verbally with the worker

vi. Having no other responsibilities other than serving as a safety monitor

vii. Monitoring not more than six employees in a controlled work zone (area between the warning line and the roof edge)

2. Active Fall Protection Systems

An active fall-protection system or personal fall-arrest system (PFAS) requires the use of specialized fall protection equipment that must be fitted to the user and worn to control fall hazards. In other words, a user is secured to an anchorage point at all times, even while moving from point to point. Fall-protection systems and equipment are used for personnel protection only.

a. **Active Systems** may include the following:
   i. Positioning devices
   ii. Lifeline systems (standard and self-retracting)
   iii. Rope grabs
   iv. Retrieval systems
   v. Full body harnesses
   vi. Body belts (note: body belts are not to be used for fall arrest.)
   vii. Connectors
   viii. Lanyards
   ix. Snap hooks
   x. Ladder safety devices
   xi. Anchorages

b. **Fall Dynamics;** The following elements combine to make a fall hazardous:
   i. Lanyard length
   ii. Free-fall distance
   iii. Shock absorption at impact
   iv. Body weight
   v. Swing
   vi. Suspension Trauma

c. **Lanyard Length.** The lanyard length must be selected to allow freedom of movement to do the work yet be short enough to minimize the fall distance. The maximum length of the lanyard and shock absorber combination is 6 feet. The minimum total vertical distance from the anchor point with a 6-foot lanyard is 18.5 feet, allowing a 3-foot safety factor.

d. **Free Fall Distance**
   i. If the trigger height for fall protection is 6 feet above the walking/working surface, a 6-foot lanyard does not offer effective protection if the anchor point of the lanyard is connected at head height. To be effective, the anchor point is required to be as high as practicably possible above the user's head without interfering with the work being done.
   ii. The D-ring on the harness moves from the back at shoulder blade height to a position at the head when supporting full body weight. A 6-foot fall can result in forces exceeding 10 times body weight. A worker weighing 200 pounds can experience more than 2,000 pounds of dynamic force from the harness unless the

user has a shock-absorbing lanyard. A 2,000-pound force is capable of causing heart damage, a severe internal injury, and possibly a fatal injury.

iii. Serious consideration must be given to the equipment being approved for each situation evaluated based on the total fall distance and impact forces that could be encountered. A good rule of thumb is to limit the free-fall to 2 feet whenever possible, by using a minimum lanyard length and/or raising the anchor point. Consider using self-retracting lanyards, some of which can activate within 1-2 feet.

iv. Use the following formula as a guide for Minimum Anchorage Point Height (MAPH):

MAPH = (6′ + L) - H + D + S + C

6′ = Harness D-ring height

L = Lanyard length (typically is 6 feet)

H = Anchorage point height (positive if below D-ring)

D = Deceleration or shock absorbing distance (typically is 3.5 feet)

S = Harness stretch (typically 1 foot)

C = Min. required clearance to lower level (3 feet)

e. **Shock Absorption at Impact.** Even a relatively short free-fall distance of 6 feet on a solid lanyard, or cable can create serious impact problems, as described above. Shock absorption devices stretch by more than 3 feet 6 inches depending on the type of unit.

i. **Body Weight.** Body weight adds to the impact load on the body of a worker and on the fall-arrest system. How the harness is worn and the tightness of the straps, if adjusted for comfort, can create harmful stress and abrasions on the body during a fall arrest. The correct size harness must be worn, and all harness straps are to be adjusted for a snug fit.

ii. **Swing.** If a fall is not a direct drop, pendulum action will come into play. The worker may be relatively uninjured from the fall due to the fall-protection system, but then could swing into another object and become impaled or forcibly strike a solid object. Use the shortest lanyard practical for the task to minimize swing effect.

iii. **Suspension Trauma**

a) A person suspended immobile in a harness may experience suspension trauma leading to death in as little as 5 minutes. Whenever a worker is suspended for longer than 5 minutes in an upright posture with legs relaxed straight beneath the body, gravity pulls blood into the lower legs, which have a very large storage capacity. Enough blood eventually accumulates so that return blood flow to the right chamber of the heart is reduced and the heart's output begins to fall. The harness leg straps compound the problem by restricting the flow of blood up to the heart. To minimize the effects of Suspension Trauma, the worker should be trained to try to move the legs in

the harness, push against any object, and, if possible, raise the legs to a horizontal position.

b) For prolonged suspension, a harness with a seat rather than straps alone should be used to help position the upper legs (and lower legs if conscious) horizontally.

3. **Active Fall Protection System Components**

Note: All components must be from one manufacturer unless the Qualified Person determines mixed components are safe to use in writing with supporting calculations and must meet or exceed ANSI Z359.1 “American National Standard Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.”

a. **Full Body Harness**

i. The full body harness has been designed to distribute arresting forces over the buttocks and shoulders. Typically, newer harnesses can be worn by men and women alike. The chest strap serves a retainer function and should be worn high on the chest, but under the collarbone.

ii. 54D-ring locations may vary, so make sure the harness is the correct one for your task. Most harnesses have the D-ring on the upper back, but for ladder climbing systems the D-ring is located on the chest or rib area. D-rings on the hips are for work positioning and on the shoulders are for retrieval. Long hair may be caught in the D-ring, so the hair must be worn under the hardhat.

iii. The most common misuse of the harness involves failure to connect the leg straps. This is also the most dangerous practice, as slipping through and out of the harness when the actual arresting action takes place is a very real possibility if the leg straps are not connected. The common practice of having loose leg straps is also dangerous, as it can lead to severe contusions to the upper thighs and groin area.

iv. Body belts are not to be used for fall arrest.

Body belts are NOT fall arrest devices! Body belts, waist belts, or safety belts, as they are sometimes called, are only to be used as work positioning supports, that is, when the worker is standing, leaning out, and needs support to hold a position—thus the term “work positioning.”

v. A single D-ring on the body belt should be positioned in the middle of the waist in front of the body. More commonly, the body belt will have two D-rings to be connected to two lanyards, one from each side, similar to that used for a window washer. Body belts have either a tongue buckle or a friction buckle, both, if worn properly, will support the weight of a worker.

b. **Connectors.**

Two shock-absorbing lanyards, at least one of which is always attached to a secure anchorage, are required for foot travel beyond the limits of a single lanyard when exposed to a fall greater than 6 feet. The use of a positioning device and an additional shock-absorbing lanyard while climbing is also acceptable.

c. **Lanyards**

i. A lanyard is a short, flexible rope or strap webbing that connects a worker's body harness to an anchorage point or the grabbing device on a lifeline. There is no limit to the length of a lanyard, but lengths of 2, 4 and 6 feet are common to help limit falling beyond a maximum free-fall of 6 feet. The lanyard should be as short as possible, without restricting movement. An adjustable lanyard provides workers with the flexibility to adjust the length of their lanyard to suit any fall arrest application. The design of the adjustable lanyard must allow the user to easily identify the length of the adjustment at a glance through a "tape measure" feature or similar design.

ii. The minimum attachment height should be at or above the D-ring height to ensure the free-fall distance will be less than 6 feet.

iii. Unlike basic cable, web, or rope lanyards, shock-absorbing lanyards not only significantly reduce arresting forces on the body, but also provide a means to determine in-service use. Obvious deformation makes it evident that they have been stressed. All lanyards are to be destroyed and replaced after having been shock loaded.

d. **Y-Lanyards**

i. A Y-lanyard is two or three lanyards, generally shock-absorption types, connected to a center ring or snap hook that allows workers to move horizontally from one anchorage point to another.

ii. The user must be trained in the use of the Y-lanyard and constantly be aware of the location of both lanyards. There have been several instances of the lanyards becoming entangled or actually causing a fall when they have snagged on an obstruction and thrown a worker off balance.

iii. Do not connect the lanyard to an unauthorized anchorage as travel progresses. Consider a horizontal lifeline system as an alternate solution.

e. **Snap Hooks**

i. Snap hooks must be of a self-closing and self-locking type. The self-locking gate meets the 3600-pound breakage strength requirements and must not be directly

connected to: webbing, rope, or wire rope; horizontal lifelines (a separate ring or carabineer should ride on the horizontal lifeline); or to any object whose shape or dimensions are incompatible with the snap hook such that unintentional disengagement (e.g., roll-out) could occur. A snap hook must not be connected directly to another snap hook.

ii. Snap hooks may only be used with compatible components. Snap hooks are not to be attached directly to cables, ropes, chains, or the lanyard itself—as in looping the lanyard over a pipe and hooking the snap hook on the lanyard—unless approved by the manufacturer. Only approved anchor points must be used to connect to the lanyard snap hook.

4. **Retractable Lifelines**
   a. **Self-retracting Lanyards (Locking):** Self-retracting lanyards with locking devices are designed to arrest free falls within inches by eliminating the slack inherent in fixed-length lanyards. The Competent Person will determine the free fall distance. One main consideration is that for self-retracting lanyards to be effective overhead installation is required. A major advantage is that arresting forces can be kept to the 650-pound range, almost one-third of that associated with a 6-foot free fall. This system is especially attractive when working near the edge on roofs and when frequent ladder climbs are required.

5. **Lifeline Systems**
   a. Lifeline systems provide a means for connecting components of a personal fall-arrest system to an anchorage. They consist of either:
      i. A flexible line to hang vertically (vertical lifeline) for connecting to an anchorage at one end
      ii. A flexible line to stretch horizontally (horizontal lifeline) for connecting to anchorages at both ends.
   b. For all lifeline systems, vertical or horizontal, a Qualified Person must approve the anchorages and the selection of the type of lifeline to ensure proper design of the system and 5must be rated to support a minimum of 5,000 pounds.

6. **Vertical Lifeline Systems**
   a. A vertical lifeline allows the worker to move up and down the entire height of the line rather than having to disconnect and find a new tie-off point on the tower or ladder being climbed. Workers connect to the lifeline by a "rope grab" deceleration device that travels along with the worker as he or she moves higher or lower.

b. The diameter and composition of the line may vary, but it must have a 5,000-pound breaking strength. Although polypropylene rope is a popular tool, its stretch factor must be taken into account.
c. The rope grab is a deceleration device that travels on a lifeline and automatically, by friction, engages and locks the lifeline to arrest the fall of the user. A rope grab usually employs the principle of inertial locking, cam/level locking, or both. Rope grabs can be either manual or mobile and must be suited to the lifeline fabric. Squeezing and releasing a locking cam operates the manual grabs. The grab should be located above shoulder height and a short (3-foot) lanyard is recommended to prevent exceeding the 6-foot free fall requirement.

7. **Ladder Safety Devices.**
   a. Ladder safety devices are similar to vertical lifeline systems with the exception that they attach to the front harness D-ring with a 9-inch maximum connector and are limited to 2-foot free falls.

8. **Horizontal Lifeline Systems**
   a. A horizontal lifeline is a flexible line rigged in a horizontal plane and secured at each end to an anchorage. It provides fall protection for work requiring horizontal mobility along elevated surfaces. A worker connects to the line using a personal fall-arrest system that moves with the worker between the two anchorages. By providing a sliding connection along the entire walkway, the anchorage is kept overhead, reducing the hazard of dangerous swing falls that can occur if the worker moves to a location where the anchorage is no longer directly overhead.
   b. Horizontal lifeline systems are common in work areas lacking overhead anchor points available for personnel tie-off. In its simplest form, the horizontal lifeline consists of a cable attached to two or more anchor points on a rooftop, crane runway, bridge, outdoor construction site, or any other elevated work area that poses a fall risk to personnel. When used in combination with personal protective equipment, a horizontal lifeline can arrest a fall, limiting the amount of force that is transferred to both the worker and the fall-arrest system.
   c. Horizontal lifelines must be designed, installed, and used under the supervision of a Qualified Person, and be part of a complete personal fall-arrest system that maintains a safety factor of at least two. Although installing a horizontal lifeline may appear to be as simple as stringing a line between two supports, determining the loads applied to the anchorages and the clearance required below the working surface in the event of a fall can be extremely complicated. In this respect, horizontal lifelines are among the most complex types of fall protection equipment.

9. **Anchorages**
    a. Personal fall-protection systems are dependent on an adequate anchor point. Without it, harnesses, lanyards, and shock absorption are useless.
    b. **ONLY ANCHORAGE POINTS IDENTIFIED BY A QUALIFIED OR COMPETENT PERSON ARE TO BE USED**.
    c. Guardrails, handrails, fire sprinkler piping, and roof ducting are NOT acceptable anchorage points. Questions on anchorages should be directed to a Fall Protection Program Competent Person.
    d. Anchorages are to be:
        i. Independent from the work object whenever possible
        ii. Clearly marked if permanent and identified as approved by a Qualified Person.
        iii. Located at suitable attachment heights
        iv. Of sufficient strength for its intended purpose
        v. Inspected regularly and before each use
    e. Connecting devices (e.g., shock absorbing lanyards) should be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,000 pounds per worker and limiting the fall distance to 6 feet or less.
    f. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as part of a engineered personal fall arrest system which maintains a safety factor of at least two; and is performed under the supervision of a qualified person.

10. **Work Planning**
    a. Written work plan is required when a Personal Fall Protection System (PFPS) is to be used. A Competent Person selects the appropriate PFPS equipment for the fall scenario and ensures that it properly fits each user. General work planning guidelines are as follows and are carried out by the Competent Person:
        1) Determine whether an engineered fall-protection system is required. In collaboration with the Qualified Person ensure it is satisfactory (for example, determine whether guardrails or cages are necessary). If an engineered fall-protection system is not required, list each fall scenario that workers will be exposed to.
        2) For each fall scenario, analyze the fall hazards and determine the PFPS components that will be needed.

3) Maintain and inspect the PFPS components needed to ensure that equipment is available when needed.
4) Determine the worker's vertical and horizontal movement requirements in each scenario.
5) Plan the anchoring system. Identify and evaluate the strength of all anchor points.
6) Select and obtain the appropriate equipment (e.g., harness, lanyard, or self-retracting lifeline).
7) Confirm training status of all users.
8) Review the planned work with workers to ensure their understanding of the requirements and approach to the job.
9) Review the planned method of a prompt rescue and/or self-rescue system, anticipated time of hanging in the harness, and actions required to minimize suspension trauma.
10) All fall arresting, descent control, and rescue equipment shall be approved and used in accordance with the manufacturer's recommendations.

11. Training and Compliance Documentation

a. Bay City Boiler has safety training programs designed to instruct employees on safe work practices and procedures pertaining to the recognition and elimination of fall hazards. A list of all required safety training and records of that training are maintained by HR Manager. Documentation shall contain employee's name and signature; trainers name and signature, and dates of training.
b. Disciplinary actions and retraining will be required when personnel are noted to not understand or follow the requirements in the procedure.

12. Barricading Work Areas

All work areas where a risk of falling hazards exist, shall be properly barricaded to prevent personnel from entering an unsafe area. Barricading tape shall state “Danger” and shall include a sign that states the nature of the overhead hazards and a number to contact for more information.

13. Fall Protective Systems Shall:

(a) Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness;
(b) Be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level, and, where practicable, the anchor end of the lanyard shall be secured at a level not lower than the employee's waist;
(c) Bring an employee to a complete stop and limit maximum deceleration distance an

employee travels to 3.5 feet; and

(d) Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

14. **Fall Protection Plan**:

(a) This section applies to all construction operations when it can be shown that the use of conventional fall protection is impractical or creates a greater hazard.

(b) The fall protection plan shall be prepared by a qualified person and developed specifically for the site where the construction work is being performed and the plan must be maintained up to date. The plan shall document the identity of the qualified person. Only one plan needs to be developed where the construction operations are essentially identical.

(c) Any changes to the fall protection plan shall be approved by a qualified person. The identity of the qualified person shall be documented.

(d) A copy of the fall protection plan with all approved changes shall be maintained at the job site.

(e) The implementation of the fall protection plan shall be under the supervision of a competent person. The plan shall document the identity of the competent person.

(f) The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrails, personal fall arrest systems, or safety nets) are infeasible or why their use would create a greater hazard.

(g) The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection provided by conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.

(h) The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in Section 1671.2(a).

(i) Where no other alternative measure (i.e. scaffolds, ladders, vehicle mounted work platforms, etc.) has been implemented, the employer shall implement a safety monitoring system in conformance with Section 1671.2(b).

(j) The fall protection plan must include a statement which provides the name or other method of identification for each employee (i.e., job title) who is designated to work in controlled access zones. No other employees may enter controlled access zones.

(k) In the event an employee falls, or some other related, serious incident occurs (e.g., a near miss), the employer shall investigate the circumstances of the fall or other incident

to determine if the fall protection plan needs to be changed (e.g., new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents.

15. Positioning Devices

(a) Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet.

(b) Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.

(c) The use of non-locking snap hooks shall be prohibited after January 1, 1998.

(d) Anchorage points for positioning device systems shall be capable of supporting two times the intended load or 3,000 pounds, whichever is greater.

12.0 Heat Illness Prevent Plan

A. Purpose

Bay City Boiler has developed this Heat Illness Prevention Plan to control the risk of occurrences of heat illness and to comply with the California Code of Regulations State Standard Title 8, Chapter 4, Section 3395. The plan is designed to educate our employees and supervisors on the symptoms of heat illness, causes of these symptoms, ways to prevent heat illness and what to do if they or a fellow employee experience symptoms of heat illness. Employees that fall under this regulation could include, but are not limited to, all employees working outside and inside exposed to hot working environments.

B. Roles and Responsibility

The project site supervisor, (Foreman or Superintendent) is responsible for implementing this program in the field. It is the responsibility of the **Foreman/Superintendent** to identify all employees required to work outdoors where the environmental risk factors for heat illness are present and develop site specific heat illness prevention measures.

C. Definitions

The California Occupational Safety and Health Standards (Cal-OSHA) definitions of key terminology, as they relate to the standard, as follows:

- ***Acclimatization*** means the temporary, gradual adaptation of the body to work in the heat when a person is exposed to it. Usual acclimatization time while working in the heat for at least two hours per day ranges from four to fourteen days.
- ***Environmental risk factor for heat illness*** means the working conditions that create the possibility for heat illness to occur. Risk factors include air temperature, air movement, relative humidity, workload, work severity, work duration, radiant heat, conductive heat, and personal protective equipment (PPE) worn by an employee.
- ***Heat illness*** means a serious medical illness, which results from the body's inability to cope with a heat load. Heat illnesses include heat cramps, heat exhaustion, heat stroke and heat syncope (fainting).
- ***Personal risk factors for heat illness*** includes factors such as an employee's age, level of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, overall health, and use of prescription medications which may alter the body's ability to retain water or otherwise effect its physiological response to heat.
- ***Preventative Recovery Period*** means a period of time for an employee to recover from heat illness or signs of a heat illness. The amount of time for a recovery period shall be no shorter than five minutes and shall be taken in a shaded area.
- ***Shade*** means the blockage of direct sunlight. Sufficient blockage is when an object does not cast a shadow in the area of the blockage. Shade is not acceptable if heat in the shaded area prevents the body from cooling. Shade shall be open to the air or otherwise provided with ventilation and/or climate controlled. Access to shade shall be made available at all times. For small crews, trucks or vehicles with ample shade and air conditioning can be used as an acceptable rest station.
- ***Heat Wave*** means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit, and, an higher than the average high daily temperature in the preceding five days.

D. Procedures

1. When working near sources of radiant heat, shields or barriers of radiant-reflective or heat-absorbent should be placed between the source and the employee as a mechanism to reduce heat exposure.
2. When possible, a heat source shall be isolated by turning it off.
3. The substitution of mechanical means to perform a specific job application shall be incorporated whenever possible.
4. Employees shall be educated in the use of breathable clothing and encouraged to dress in breathable layers of clothing.
5. Should job tasks require the use of impermeable protective clothing, the use of auxiliary cooling systems may be required.
6. When conditions allow, and conditions warrant, physical work activities should be scheduled in the early morning hours.
7. A work/rest regime may be required in situations where engineering and other controls are not adequate. This will require the monitoring of the ambient temperature, employee physical condition, including heart rate.
8. Provisions of Water
    a. At the beginning of each shift, all employees who work outside when environmental risk factors for heat illness are present shall have sufficient quantities and immediate access to at least one (1) quart of fresh, pure, and suitably cool drinking water per hour for the entire shift (at least two (2) gallons of potable water per person per eight-hour shift).
    b. Smaller quantities may be provided if the Bay City Boiler crew has an effective procedure for replenishment that meets the above quantity and time requirements.
    c. Supervisors must take inventory of drinking water before the crews are dispatched to ensure supplies are adequate for that day's work.
    d. The importance of frequently drinking water shall be conveyed and encouraged as described in the training section.
    e. Electrolyte replacement drinks should be made available on site when temperatures exceed 95 degrees Fahrenheit.
9. Access to Shade
    a. Access to shade that is either open to the air or provided with ventilation shall be made available at all times to any employee experiencing heat illness, symptoms of heat illness, or believing a preventative recovery period is needed.
    b. For employees needing a preventative recovery period:
        i. The preventative recovery period shall be at least five (5) minutes.
        ii. Employees are to remain in the shade and not ordered back until symptoms are gone.
        iii. Water shall be made available in the shade/preventative recovery period.
        iv. Employees with symptoms must be provided appropriate first aid or emergency response
    c. If the predicted temperature forecast is above 80 degrees at the beginning of the shift:
        i. Shade area(s) must be available
        ii. Shade must accommodate all employees on recovery or rest periods and while taking meal

periods/breaks.

iii. Employees should be able to sit comfortably in the shade without touching each other.

iv. Shade area must not cause exposure to another hazard and be located as close as practical.

v. Shade should be reachable within a 2.5-minute walk.

vi. In no case should the shade be located more than a ¼ mile or a five-minute walk away (whichever is shorter).

10. Identifying, Evaluating, and Controlling Environmental Risk Factors for Heat Illness

a. To identify if environmental risk factors are present, the immediate supervisor shall obtain temperature and humidity measurements for the work areas, either by direct measurements or by weather forecasts that are adjusted to match worksite conditions.

b. To evaluate if an environmental risk factor is present, the **Superintendent** shall obtain the Heat Index, calculated by the National Weather Service, to rate the risk of heat illness depending on air temperature and humidity, the **Superintendent** shall assume there is a significant risk of heat illness when the Heat Index for an employee working in the sun is 80 or above, and 90 or above when employees are working in the shade. If workers are wearing more than "light" clothing, the risk of heat illness shall be considered significant at a lower Heat Index.

c. To control and reduce the exposure to environmental risk factors, Bay City Boiler shall utilize the following control measures (mark all that apply).

____Provide shade for work areas

____Schedule outdoor and/or vigorous work in the cooler hours of the day

____Schedule more breaks during the day

____Provide misters or other cooling devices

____Other: _____

11. Identifying, Evaluating and Controlling Personal Risk Factors for Heat Illness

a. Bay City Boiler shall train employees on the factors that can affect their vulnerability to heat illness. These factors include an employee's age, level of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, overall health, and use of prescription medications that may alter the body's ability to retain water or otherwise affect its physiological response to heat. Bay City Boiler shall convey the importance of acclimatization and shall take steps to aid employees in becoming acclimatized. Bay City Boiler shall not request any of the above personal information from an employee.

12. Reporting Symptoms or Signs of Heat Illness to Supervisor

a. Employees exhibiting signs or symptoms of heat illness, or who observe a co-worker with signs or symptoms, shall report these symptoms to his or her supervisor immediately.

b. Employees must receive a verbal authorization from their immediate supervisor prior to taking a preventative recovery period and report back to the same supervisor when reporting back to work after the preventative recovery period. The supervisor should assess the following factors:

i. Reported symptoms of nausea, dizziness, lightheadedness or vomiting?

ii. Signs of profuse sweating?

iii. Was the workspace enclosed, or without air circulation, or both?

iv. Does the employee have any personal risk factors for heat illness (such as prescription medication use, signs of alcohol use, etc.)?
v. Is the employee new to the job?
vi. Has the employee been drinking water? If yes, how often and how much?

13. Responding to Symptoms of Possible Heat Illness
    a. It shall be the responsibility of the immediate supervisor to respond to all reports and/or observations of heat illness symptoms and signs and take immediate action commensurate with the severity of the illness.
    b. If the signs or symptoms are indicators of severe heat illness (such as but not limited to, decreased level of consciousness, staggering, disorientation, vomiting, irrational behavior, or convulsions), the supervisor must implement emergency response procedures immediately.
    c. Employees exhibiting signs of minor heat illness such as heat rash, heat cramps, or early heat exhaustion will be brought to a shaded or air-conditioned recovery area for first aid and close monitoring. Based on symptoms exhibited, the employee may need to be transported to a medical clinic for further evaluation and care.
    d. Employees requesting a preventative recovery period should be escorted to the shaded recovery period and remain there until they are ready to return to work. The shaded recovery area will be located where the condition of the employee or employees can be continually observed.
        i. Employees will be sent to a medical clinic for evaluation and or medical attention if their symptoms have not resolved after fifteen minutes in the shaded recovery area. The supervisor will evaluate the need for an employee to be sent to a medical clinic for evaluation and/or medical attention if that employee requests more than one recovery period in a 4-hour work period.
    e. An employee exhibiting any sign or symptom of heat illness shall be monitored and not left alone or sent home without being offered onsite first aid and/or being provided emergency medical services.
14. Contacting Emergency Medical Services
    a. It shall be the responsibility of the Superintendent/Foreman to contact emergency services when required, and to provide accurate and precise directions to the employee's location. This individual shall be immediately available to perform this function.
15. Communication
    a. Bay City Boiler shall account for the whereabouts of all employees at appropriate intervals during and at the end of the work shift by a head count. This procedure shall be followed whenever the outdoor work environment creates a heat hazard that could result in the collapse of an employee due to heat illness.
16. Responsibilities of Supervisors

    Supervisors are responsible for:

    a. Ensuring adequate water supply is available.
    b. Ensuring appropriate shade has been provided for work outdoors.
    c. Monitoring employee recovery periods and implementing emergency response procedures for responding to symptoms of heat related illness.
    d. Closely observing new employees for their first 2 weeks on the job in hot environments. For new employees who are not acclimatized to working in hot environments, lessen the intensity of the employees' work during a two-week break-in period and be extra-vigilant with monitoring their condition.

e. Closely observing all workers during a heat wave, defined as any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding 5 days.

17. High Heat Protocols

When the temperature equals or exceeds 95 degrees Fahrenheit or during a heat wave, supervisors must:

a. Ensure effective communication (by voice, observation, or electronic means)
b. Observe and monitor employees for alertness and signs and symptoms of heat illness using one of more of the following measures:
   - Supervisor or designee observations of 20 or more employees.
   - Implement a mandatory buddy system.
   - Regular communication with employees working by themselves using radio or cellular phone.
c. Give more frequent reminders to drink plenty of water.
d. Designate one or more employees as authorized to call for emergency medical services, and allowing other employees to call for emergency services when no designated employee is available.
e. Hold pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

Heat Related Illnesses and Required Response

Sunburn - Symptoms of sunburn usually include redness and pain. In severe cases there may be swelling of skin, blisters, fever and headaches. Response and treatment include:

1. Use ointment for mild cases of blisters.
2. If the blisters break one should apply dry sterile dressing.
3. A physician should be seen for extensive cases.

Heat Rash

This form of heat illness is one of the most common problems in hot work environments. Symptoms generally include red clusters of pimples or small blisters on the neck and upper chest.

1. Keep the affected area dry.
2. Avoid using ointments or creams- they may make the condition worse.

Heat Cramps

The victim will feel muscle pains or spasms, usually in the abdomen, arms or legs.

1. Stop all activity and sit in an air-conditioned or shaded area.
2. Drink cool water, clear juices or sports drinks.
3. Seek medical attention if cramps continue.

Heat Exhaustion

Symptoms of heat exhaustion may include heavy sweating and weakness, a fast and weak pulse rate, nausea, fainting or vomiting.

1. Stop all activity and get into an air-conditioned or shaded area.
2. Lie down and loosen clothing.
3. Drink cool, not iced, water or sports drinks.
4. Cool the person by spraying or sponging him or her with cool water and fanning.
5. Monitor the person carefully. Heat exhaustion can quickly become heatstroke. If fever greater than 102 degrees Fahrenheit, fainting, confusion, or seizures occur, call 911 for emergency medical assistance.

Heatstroke or Sunstroke – Symptoms

Symptoms of heatstroke may include high body temperature (106 degrees Fahrenheit or higher), hot dry skin, unconsciousness or convulsions.

1. Stop all activity and get victim into an air-conditioned or shaded area.
2. Call for 911 for emergency medical assistance and assign responsibility of an individual to meet responders and guide them to the victim.
3. Do not give anything by mouth (even water).
4. Cool the person by spraying or sponging him or her with cool water and fanning.
5. Standby until emergency medical assistance arrives.
6. If the victim is hospitalized the supervisor must immediately notify Cal-OSHA.

Post Heat Illness Incident Procedure

1. Once the employee has been treated, the supervisor should conduct refresher training on Heat Illness Prevention for all employees on site and document all employees understand the cause and effect of heat illness, before allowing work to restart.
2. The supervisor must ensure that other employees are not at risk of heat illness before allowing work to restart.
3. The supervisor must immediately contact their Superintendent and Bay City Boiler management to conduct an incident investigation to understand how the heat illness occurred and develop measures to prevent recurrence.

E. Training and Documentation

1. Effective training shall be provided to each supervisory and non-supervisory employee before any employee begins work that their job scope would reasonably be anticipated to result in exposure to the risk of heat illness, by one of the following methods
   a. Tailgate meetings before a shift begins.
   b. Test employees/supervisors after training
   c. Conduct training on a regular basis
2. Re-training shall be provided whenever inadequacies in the employee's knowledge or use of this program are identified.
3. Documentation shall contain employee's name and signature; the name and signature of the trainers, and the dates of training.

4. Employees shall be trained on:
   a. Environmental and personal risk factors for heat illness
   b. Bay City Boiler procedures for identifying, evaluating and controlling the exposure to environmental and personal risk factors for heat illness.
   c. Importance of frequent consumption of small amounts of water under extreme conditions
   d. Acclimatization and its importance
   e. Types of heat illness and their symptoms, signs, and differences
   f. Procedure of immediately reporting the signs and symptoms of heat illness in themselves or in a co-worker, to their employer, and its importance.
   g. Procedures for Bay City Boiler Management to respond to symptoms of heat illness, which shall include how emergency medical services will be provided, if needed.
   h. Procedures for contacting emergency medical services and transporting employees to a readily accessible location for emergency medical services to reach them.
   i. Procedures on how to provide clear and precise directions to emergency medical services.
5. Supervisor Training
   a. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness effective training on the following topics shall be provided to the supervisor:
      i. All information included in this section
      ii. Procedures a supervisor shall follow when implementing this Heat Illness Prevention Plan
      iii. Procedures a supervisor shall follow when an employee exhibits symptoms of a possible heat illness, which includes emergency response procedures.
      iv. How to monitor weather reports and how to respond to hot weather advisories.

13.0 CONTROL OF HAZARDOUS ENERGIES (Lockout/Tagout or LOTO) POLICY

A. Purpose

This policy is designed to establish minimum requirements for the control of hazardous energy sources that could cause harm or injury or death if suddenly or unexpectedly released. Bay City Boiler requires that all forms of hazardous energy be identified and controlled before work can begin.

B. Roles and Responsibility

Project Managers and Superintendents are responsible for implementing and maintaining this program.

C. Procedure

1. Hazardous energy is defined as any energy that could cause harm or injury if it were suddenly, unexpectedly or inadvertently released such as electrical, steam, hydraulic, tension, gravity, etc.
2. A hazard assessment shall be conducted for each Lock out. Energy Control Procedures (ECP) shall be developed which identifies the hazardous energy sources and their approximate magnitude, e.g. voltage, pressure, temperature, motion and other physical characteristics of hazardous energy. The ECP shall note the location of the energy isolation devices and the sequence in which isolation is to be performed.
3. ECP shall identify procedure for shutting down equipment, any possible residual or stored energy accumulation, document isolation points and methods to verify isolation is effective.
4. Periodic inspections of the energy control procedure must be conducted and documented at least annually to ensure procedures and requirements are followed.
5. All equipment shall be considered energized until all energies have been controlled and verified as zero energy present.
6. An employee is in a danger zone when any body part would be affected in the event of a sudden release of hazardous energy.
7. The initial or primary hazardous energy isolation shall be adequately secured with a lock and identification tag. If the isolation device is not capable of being locked out, a tag will be used along with additional safety measures that will ensure the integrity of the isolation is equal to the same isolation with a lock in place.
8. Non-Hazardous energy: Vents and drains may be considered non-hazardous in some instances if they are part of the isolation plan and they are opened deliberately as part of preparing a piece of equipment for repair, alteration or maintenance activities. However, they shall be tagged to indicate that they are not in their normal operating position during these activities.
9. Energy isolation device: An energy isolation device is any mechanical device that physically prevents the operation of a system and controls the potential release of hazardous energy. Push buttons, selector switches, and other control circuit type devices are not energy isolation devices.
10. In addition to hazardous energy, a secondary isolation may be needed to safely secure hazardous energy prior to opening a system. Example: An initial hazardous energy isolation and secondary isolation along with an open bleed, vent or drain (double block and bleed) is required prior to performing a first break into a process system that contains hazardous energy sources.

11. Potentially hazardous work such as confined entry or field welding on a line with hazardous or flammable chemicals shall require additional isolation in addition to the hazardous energy and secondary isolations. A physical disconnect (preferred) or a slip blind (acceptable alternate) shall be used to ensure no re-accumulation of materials exists inside the line once it has been isolated and de-energized.
12. Site management shall ensure that a means is established for employees to effectively verify isolation on systems they work on which contain hazardous energy sources.
13. An Authorized person shall verify isolation by attempting to start or energize the equipment prior to working on it. Electrical systems will be tested with a meter.
14. A combination of locks and/or tags can be used to control hazardous energy sources and secondary isolations. Locks and tags used for lock-out/tag-out shall be used only for lock-out/tag-out service at a facility.
15. If a piece of equipment is manufactured or constructed in such a way that it is not physically possible to positively lock out hazardous energy sources, it is considered “not capable of being locked out.” A specific written plan shall be developed to address these situations.
16. To remove lockout, follow Bay City Boiler Lockout/tagout or energy control procedure.
17. Ensure that any safety devices are engaged e.g. interlocks, valves, guards, covers, sensors, etc.
18. Work on energized equipment such as hot tapping, testing of electrical circuits, and work on in-service equipment where energization of the equipment is required to perform necessary vital adjustments, specific procedures must be developed before performing work.
19. **Working on energized electrical systems or equipment is never allowed by Bay City Boiler personnel or on Bay City Boiler projects.**
20. When working under overhead lines clearance distance must be provided or lines shall be deenergized and grounded
21. Only Qualified Personnel are allowed to work on any electrical system or component.
22. Vehicular and mechanical equipment shall be operated so that a clearance of a minimum of 10 ft. is maintained from energized overhead lines.
23. Personnel are required to maintain a minimum distance of 6 ft. from energized power lines.
24. When more than one employee is involved in LOTO, responsibility shall be given to an authorized employee designated to coordinate affected work forces and ensure continuity of protection.

D Training and Documentation

1. Training shall be provided when the employee is first assigned or given new duties covered in this guideline; or whenever there is a change in Control of Hazardous Energy program; or whenever there are deviations from the Control of Hazardous Energy programs or inadequacies in the employee's knowledge or use of this program.
2. Training shall establish employee proficiency of Control of Hazardous Energy program on an annual basis and document employee's name and signature; the name and signature of the trainers, and the dates of training.

Lockout / Tagout Procedure

Appendix 6.0

PREPARATIONFOREQUIPMENTSHUTDOWN

ITEM: _____ LOCATION:

Ensure machine process is shut-down and any auxiliary systems turned off**.**

MACHINE OR EQUIPMENT SHUTDOWN / ISOLATION

Sources of Energy:	Single	Multiple	Location(s)
Electrical			
Air / Pneumatic			
Hydraulic			
Steam			
Mechanical			
Other: (list)			

LOTO DEVICE APPLICATION

To lock energy source out, refer to the information on the table below for each hazard

Sources of Energy:	CODE	METHOD OF ISOLATION CODES
Electrical		(A) Turn Isolating Switch to OFF or GREEN Position
Air / Pneumatic		(B) Turn valve to off position-safely relieve pressure
Hydraulic		(C) Apply Isolating Device and lock-safely relieve remaining pressure
Steam		(D) Block using the device provided and secure in place, relieve pressure and let cool
Mechanical		(E) Isolate, relieve pressure, install pipe blank or blind; or double block and open bleed between valves
Other: (list)		(F) Other (list out)

- Lock is to be placed in the hole provided to ensure the source cannot be energized.
- Isolate all sources of stored energy, bleed hydraulic and air lines and block as appropriate.
- Install a Lockout Tag and fill it out, sign and attached to the lock.
- Once locked, remove the key and secure only under your control.
- Only the person applying the lock is allowed to remove it.

STORED ENERGY ISOLATION / VERIFICATION: Try to operate the machine by the start button to ensure it won't start. If condition is found to be safe, proceed with the assigned work. If not, contact your supervisor.

LOCK REMOVAL FORM

Lock Removal Form			
Date:	**Yes**	**No**	**NA**
1. Supervisor - has tried to locate owner of lock?			
2. Supervisor - has tried to contact owner of lock?			
Called Home?			
Called Cell? (if applicable)			
3. Has the machine/equipment/device been reviewed by a competent person and deemed safe to energize?			
4. Is the machine/equipment/device in Safe operational condition?			
IF ANY "NO" LOCK CANNOT BE REMOVED			
IF ALL "YES" LOCK CAN BE REMOVED			
Verification Supervisor (print name and sign here):			
Has reviewed all aspects on this checklist and based on the information provided believe that the machinery/equipment/device is in Safe Operational condition			
Evaluation Personnel - Signature:			
Evaluation Personnel – Printed Name and Title:			
To the best of my knowledge I believe that this equipment/device has been placed into a Safe Operational condition.			
Signature:			
5. REMOVE LOCK			
6. Supervisor must make a copy of this completed checklist and ensure that the correct process to remove this lock has been followed.			
Additional Comments:			

Energy Control Work Procedure

Use this form to document specific energy control procedures to identify critical energy isolation points and types of control devices for machines and equipment.

Department: _____

Equipment: _____

Equipment manufacturer: _____

Equipment serial number or other identifier: _____

Contact person: _____

Authorized employee(s): _____

Special Concerns: _____

Notify all affected employees before this procedure is used.

Lockout steps	Verification steps	Return to service steps
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.

Notify all affected employees after work is complete and locks & tags have been removed.