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Facilities Services Safety Procedures

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St John Fisher College (SJFC) has developed this Health & Safety Policy Manual for their employees, visitors, contractors and others working for or on behalf of the company. This safety manual contains the safety and health policies to be implemented and followed by all employees. The current best information available regarding safety is represented. As new information becomes available it will be incorporated. Every employee has a responsibility to contribute new information when made aware of.

**Keep in mind that this safety manual is not all inclusive and can never be fully comprehensive. All employees are responsible for conducting operations in a way that will create a safe working environment for themselves and their co-workers.**

Each job task must be reviewed by the employee before performing it to ensure each element of the task can be completed safely. If there are any concerns in performing a task safely, contact your immediate supervision or the Safety Coordinator. Safety is the main priority of every employee. The primary responsibility of supervision is to develop the fundamental mental attitudes to achieve this.

It is your responsibility to know and understand the safety rules that have been incorporated within this safety manual. Operating safely within the guidelines provided by SJFC is a condition of employment. Through common sense and constant awareness, a safe workplace can be created and maintained. Do not take unnecessary chances.

SJFC promotes a safe work environment for all its employees. SJFC provides the necessary tools and training to all employees to ensure a safe work environment. Individuals, as applicable will receive proper OSHA training in required areas. SJFC expects each and every employee to utilize the tools and training provided them to ensure the safety of themselves and others.

The policies set forth in this manual are intended to satisfy requirements set forth by the Occupational Safety and Health Administration (OSHA) and other regulatory agencies and to provide reference of regulatory plans implemented by SJFC. These are referred to as safety programs (i.e. Hazard Communication Program SP001). In every case, Governmental Regulations and industry standards take precedence over information in this manual.

It is every employee's job and duty to report any unsafe condition or unsafe act on a SJFC job to a Safety Team member. Therefore, safety is every employee's greatest responsibility.

Failure to follow these rules will lead to disciplinary action.

***SAFETY IS EVERYONE'S RESPONSIBILITY!***

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SJFC is committed to limiting the waste of human and material resources by avoiding, preventing and reducing loss due to injury, property damage, spoilage, reduced productivity and reduced quality.

Our resource protection and resource conservation efforts must always be an integral part of our employees are considered valuable assets; their safety is of vital concern. Recognizing its need and responsibility for the safety of its employees, the company considers accident prevention an important and integral part of every operation undertaken.

Safety will be given primary importance in planning and operating all activities in order to protect employees against occupational injuries and illnesses, and to protect our company against unnecessary financial burden and reduced efficiency.

Teamwork in this safety initiative is imperative. Through training, preventive maintenance and a positive attitude we believe accidents can be entirely prevented.

There will be no tolerance for actions or attitudes that imperil employee safety or that of your co-workers. These actions or attitudes will be the basis for corrective action.

Each member of our company's management team is responsible for the safety, well being, and safe work conduct of all persons who report to or are assigned to him.

**To carry out this policy, we will:**

- Maintain safe and healthful working conditions.
- Furnish, within reason, the best available mechanical safeguards and personal protective equipment, where they are needed.
- Maintain an active and aggressive program in which all members of management will participate to promote safety awareness among its employees.
- Provide adequate medical and first aid facilities for work-caused injuries and illnesses.
- Maintain a continuous educational program in safe operating procedures.
- Insist that all employees observe established safety regulations and practices and use the safety equipment provided.

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**3.1 - Expectation**

It is SJFC’s expectation that this safety manual and its policies and procedures will be understood and utilized by all employees.

It is SJFC’s goal to create and maintain the safest work environment practical for all of its employees. This effort only starts with this safety manual. An essential part of the success of this safety initiative will be that all employees develop the highest regard for their own personal safety and the safety of others.

SJFC employees and contractors shall comply with the following rules while working at the plant or job site:

- a) Smoking is not permitted, except in personal vehicles on designated breaks or lunch;
- b) Horseplay is not allowed;
- c) Employees are expressly forbidden from bringing, possessing, or consuming intoxicants on company premises or reporting to work under the influence of drugs or alcoholic beverages;
- d) Report all injuries to your supervisor, no matter how minor;
- e) Report all potential safety hazards to your immediate supervisor;
- f) Only authorized employees are permitted to operate fork trucks;
- g) Only authorized employees are permitted to use welding equipment;
- h) Defective or damaged tools are not to be used; tag the tool as inoperable and notify your supervisor;
- i) Never remove safety guards from machinery;
- j) Never use compressed air to clean clothing or exposed body parts;
- k) Store all chemicals and solvents in approved safety containers;
- l) Do not start work without obtaining emergency numbers, and reviewing safety requirements;
- m) All containers must be labeled, including buckets and cans;
- n) Safety glasses with side shields are required to be worn at all times when there is the potential to be exposed to sparks and / or flying chips;
- o) Do not perform any work requiring respiratory protection unless you have been certified by SJFC and have completed the required medical surveillance and training;
- p) Do not wear clothing that is overly loose or worn that could potentially get caught in machinery;
- q) The use of ear phones or other listening devises is not allowed;
- r) Wearing jewelry, including rings and watches, is prohibited when working on and around equipment in clean room and machine shop.

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### 3.2 - Communication

Employees are encouraged to communicate comments or concerns which may enhance this safety manual. Involvement and enthusiasm of the employee will maintain the highest level of safety for themselves and their co-workers. This will insure that all aspects of the work place or work habits are adequately considered for inclusion.

### 3.3 - Duties

Specific titles have been assigned to designated employees of SJFC concerning safety and health responsibilities. In the context of safety each work site or work activity differs only in required safety procedures and individual duties toward implementing these procedures. With respect to individual roles in this safety initiative every employee will have specific duties to insure that this program is a success.

'Supervision' made reference to throughout the safety & health manual shall be defined as:

- 1) The lead person who has sole responsibility of a project and is the only SJFC employee working on the project at the time, or;
- 2) The lead person who has overall authoritative control of a SJFC department or project with multiple employees and/or subcontractors.
  - a) In regards to department or projects that have various employees that complete certain tasks throughout the progression of a project, each unaccompanied employee shall be designated as on-site supervision for their portion of work.
  - b) Every new employee will receive safety orientation training on their first week of employment and before beginning any work for SJFC
  - c) Employees whom require certification(s) must be certified in accordance with the appropriate State or Federal governing body.

#### 3.3.1 – Employee

Every employee will have a responsibility toward their own personal safety and the safety of others. In the context of safety, each work site or work activity differs only in required safety procedures and in who has responsibility toward implementing safety measures.

Every employee has the duty to themselves to conduct their daily work activities in a safe manner, avoid obvious safety hazards and properly utilize personal protective equipment as identified in the manual. Through the cooperative efforts of you, the project lead person, and in conjunction with the policies of this manual, a safe work environment can be maintained. However, all is for naught if each employee does not develop an attitude toward keeping themselves safe and looking out for the safety of others around them. All employees will:

- a) Be knowledgeable in, and abide by, all of the rules and regulations included in SJFC safety program,
- b) Apply this knowledge and training as well as common sense toward each work activity,
- c) Cooperate and assist in the implementation of the job safety analysis,

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- d) Properly utilize and maintain required personal protective equipment,
- e) Learn to identify obvious or potential safety hazards in your workplace and immediately notify supervision of these conditions,
- f) Notify supervision if the proper personal protective equipment is not available or if it is in need of repair,
- g) Immediately report any accident or injury to supervision. Corrective action is required by the Manager prior to the employee returning back to work. In the event he is not available anyone on the safety committee may perform this duty.

### 3.3.2 Safety Coordinator

The Safety Coordinator has the responsibility of implementation and interpretation of safety policies. Through cooperative efforts, a safe working environment can be maintained.

The Safety Coordinator will:

- a) Uphold the intent of the Safety Program and work with supervision to assure its efficient use,
- b) Conduct safety meetings and regular safety training for all employees,
- c) Make periodic safety inspections of work sites and associated activities,
- d) Coordinate the development of the Job Safety Analysis,
- e) Provide review of new tasks not included within the safety manual and provide recommendations as to conducting these tasks in a safe manner,
- f) Investigate serious accidents and report them to the Safety Committee. Follow up with documentation of corrections, compliance, and effectiveness of training,
- g) Represent SJFC related to interaction of Federal, State and Local matters,
- h) Post and maintain signage and notices, including, but not limited to:
  - \* Emergency Telephone Numbers
  - \* OSHA Safety and Health
  - \* Employees Right to Know Law
  - \* Equal Employment Opportunity
  - \* Lock-out/Tag-out Requirements
  - \* Minimum Wage
  - \* Unemployment Benefits
  - \* Phone Numbers

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### 3.3.3 - Supervision / Lead Person

Supervision, also recognized as the lead person, is responsible for the implementation of the safety program within their respective project site. This responsibility includes providing a safe work environment free of eminent or obvious safety hazards, equipping employees with appropriate safety equipment, and enforcement of the safety policy.

To achieve this end the supervisor will:

- a) Through training and example promote an attitude of cooperatively thinking safety and hazard prevention. Act on observations that an employee may not be qualified or able to perform assigned tasks safely,
- b) Conduct a job safety analysis of work activities, processes and machinery as detailed in the Job Safety Analysis Program,
- c) Make inspections of all work sites to insure that eminent or obvious safety hazards have been adequately eliminated and to evaluate compliance. Implement corrective measures resulting from safety inspections,
- d) Act on the report of any unsafe work condition made by an employee and if this condition cannot be appropriately corrected stop the activity and seek the advice of the Safety Coordinator,
- e) Promote and ensure adequate safety communications,
- f) Require that all employees properly and regularly utilize their personal protective equipment,
- g) Assist the Safety Coordinator in the investigation, review and report of all injuries, accidents or equipment damage (including "near misses") and initiate corrective measures.
- h) Enforce compliance with Federal, State and other safety agencies having jurisdiction over the work site,
- i) Cease and/or correct any work activity which is judged to be a potential hazard,
- j) Coordinate activities of subcontractors with jobsite supervision to insure compliance with these safety regulations.
- k) Review SJFC's safety program and rules with all subcontractors prior to commencing work, observe safety practices, document any accidents and review corrective measures,

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Reference College Employee Handbook Section D-3 "Standards of Conduct"

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APPENDIX A

REVISION HISTORY

REVISION NO	ACTIONS	DATE	BY
000	Initial issue as a controlled document	1/12	MWK
001	Reviewed	6/15	AC
002			

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**Appendices**

A) Emergency Contact Phone Numbers

B) Chemical Inventory List

C) Revision History

SDS Description and Glossary of Terms (see SP014 Reference Material, Forms and Definitions)

CONTRACTOR CERTIFICATION – SP001-FORM1 (see SP014 Reference Material, Forms and Definitions)

Accident Investigation Report (see SP014 Reference Material, Forms and Definitions)

Spill Report Form (see SP014 Reference Material, Forms and Definitions)

**1.0 PURPOSE:**

This document describes the methods SJFC will utilize to ensure that employees, contractors, visitors and others working for or on behalf of the company will be informed as applicable of the hazards associated with chemicals used at SJFC.

This procedure has been developed to ensure that employees and others working for or on behalf of the company are made aware of the chemicals in use and the methods necessary to work safely.

**2.0 SCOPE:**

This plan has been drafted to meet the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HazCom) set forth in 29 CFR 1910.1200. OSHA requires that employers develop, implement, and maintain a written hazard communication program at each facility where employees work with hazardous chemicals.

Chemical usage at SJFC includes, but is not limited to, operations in the following:

- a) Facility Operations
- b) Office Environments
- c) Maintenance and Ground use Materials

Chemicals used at this facility are listed in the master chemical inventory (see Appendix F).

**3.0 RESPONSIBILITIES:**

3.1 In general each employee will be informed of all the sections contained within this Hazard Communication Program (HCP), the hazardous properties of the chemicals with which they work or exposed to, operations where hazardous chemicals are used, safe handling procedures and measures to be taken to protect themselves while working with or around these chemicals. In addition they will be informed of the hazards associated with non-routine tasks.

3.2 The designated Safety Coordinator has the overall responsibility for ensuring the program is current and enforced. The program will be made available at all times during normal work hours for employees to review and / or to obtain a copy from at his office.

3.3 Each supervisor will be responsible for implementing, training and enforcing this Hazard Communication Program.

3.4 Personnel receiving SDSs are responsible to collect SDSs that arrive with incoming shipping papers and forward them to the Safety coordinator. Personnel receiving SDSs may include those purchasing, receiving, production, etc.

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3.5 Employees are responsible to ensure the presence of an SDS upon ordering a chemical, understand how to use an SDS, know where workplace SDSs are located, be familiar with specific chemical hazards in the workplace, the location of emergency equipment, and the personal protective equipment needed.

3.6 Any violation of this procedure shall be reported immediately to the Safety Coordinator / Designee. Violation of established procedures is a serious offense and failure to comply with this procedure shall result in appropriate disciplinary action.

**4.0 HAZARD DETERMINATION PROCEDURES**

4.1 To determine if a chemical to be used in a work area is included within the Hazard Communication Program, a Safety Data Sheet (SDS) will be obtained for every chemical found at the facility. If the SDS indicates that the chemical is hazardous, the chemical will then be included in the Hazard Communication Program and handled accordingly.

4.2 The Safety coordinator will retain a copy of each SDS as proof of the hazard status, for emergency response, and future reference.

4.3 All correspondence from chemical manufacturers, suppliers or importers stating that a particular chemical is not hazardous will be filed as proof of the chemical properties.

**5.0 ACCESS TO HAZARD INFORMATION**

5.1 SJFC maintains a material safety data sheets (SDS) for each chemical product used on sites or stored at the facility.

5.2 Supervision will be responsible for every hazardous and non-hazardous chemical present in their work areas.

5.3 List of Hazardous Chemicals. Limited quantities of hazardous chemicals are used at SJFC. Chemicals typically present are listed in Appendix F, and various maintenance supplies.

5.4 Location of SDS. SDSs are located in the SJFC's Safety and Security office, the Facilities office, Biology, Chemistry and School of Pharmacy. A glossary of terms and acronyms commonly used on SDSs is presented Section N of the Safety Program "Reference Materials and Definitions". It is very important to be able to access the hazards and safety / emergency procedures of a chemical immediately when necessary.

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5.5 Chemical Inventory and SDS. Maintaining an accurate inventory of all materials used at the facility, along with the most current SDS for each chemical, is essential for HazCom compliance. No chemical shall be used by an employee unless an SDS for the chemical is available.

5.6 SDS Receiving

Personnel receiving SDSs are to forward them to the Safety coordinator, who reviews them and adds them to the Master SDS List. Any person initiating a chemical product order is responsible for requesting a new SDS with every order. Upon receiving the order, the SDS shall be given to the Safety coordinator.

5.7 Initial Review

Upon receipt of an SDS, the Safety coordinator shall determine if the SDS is new or revised.

The Safety coordinator shall verify that the SDS contains all required information. This includes such items as:

- 5.7.1 The physical and chemical characteristics of the chemical;
- 5.7.2 The fire, explosion and reactivity hazard(s) of the chemical mixture including
- 5.7.3 The boiling point, flash point, and auto ignition temperature;
- 5.7.4 Health hazards of the chemical mixture including signs and symptoms of
- 5.7.5 Exposure and medical conditions recognized as aggravated by exposure with primary route(s) of entry;
- 5.7.6 Permissible exposure limit (PEL) or any other exposure limit used or recommended by the manufacturer, importer or employer;
- 5.7.7 Whether it has carcinogen listing (NTP) or has been found to be a potential carcinogen (IARC listing) or is listed as such by OSHA;
- 5.7.8 Control measures including fire, engineering, PPE, etc;
- 5.7.9 General precautions for safe handling and use including protective measures during repair and maintenance and procedures for clean-up of spills;
- 5.7.10 emergency and first aid procedures;
- 5.7.11 date prepared or changed;
- 5.7.12 name, address, telephone numbers of manufacturer, importer or responsible party to call in an emergency.

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5.8 If any parts of the SDS are missing or are incomplete, the Safety coordinator shall request a new SDS from the supplier. If the requested new SDS is not received or complete, the Safety coordinator should notify the State Department of Labor (DOL) and OSHA at the following address:

NYS DOL 450 S. Salina Street room 401 Syracuse, NY 13202 315-479-3311	OSHA, US DOL 130 S. Elmwood Buffalo, NY 14202 716-551-3053
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5.9 The Safety coordinator shall also review the SDS to determine if additional protective measures should be implemented for use with the new chemical, and whether additional training is warranted.

5.10 Identification and Filing

5.10.1 Once the Safety coordinator has reviewed the SDS, it shall be copied and placed in the Master SDS List. SDSs should be arranged alphabetically by chemical product name in their respective binders. The SDS Master List and chemical inventory shall be updated at least once a year.

5.10.2 Information from new SDSs shall be added to the chemical inventory list as appropriate. An SDS received from a supplier for a chemical not currently used or stored at the facility should be maintained in an inactive file.

5.10.3 If new hazard or safety information is received on a SDS, the Safety coordinator is responsible for notifying employees of the hazards or safety issues introduced into their work area.

5.11 Inactive SDS File.

5.11.1 Chemical products no longer purchased, used, or stored at the facility are considered inactive. It is important not to discard SDSs for these products because OSHA regulations require that SDSs for inactive chemicals be kept for 30 years.

5.11.2 Once a chemical is determined to be obsolete (i.e., no longer purchased, used, or stored at the facility), the Safety coordinator will delete the chemical from the chemical inventory listing and remove the SDS from the SDS binder. A single copy of the inactive SDS will be dated and placed into a separate, inactive file sorted by date of entry into that file. The inactive SDS file, including all inactive SDSs and their records, will be kept in an appropriate storage area to be retained for the required 30 years.

5.11.3 It is the responsibility of the employee(s) using the chemicals to notify the Safety coordinator that a chemical will no longer be used at the facility.

5.12 SDS Availability. SDSs are available and easily accessible for employees to review during normal operating hours. The master SDS printed file is located in the SJFC office in the cleaning lab.

**5.12 Obtaining Missing SDSs**

An employee who discovers a hazardous material used at the facility for which there is no available SDS on-site should immediately notify the Safety coordinator. A request should be made to the product supplier for a SDS. If the SDS is not received from the supplier within a week, the Safety coordinator will follow up with a phone call to supplier requesting assistance in obtaining the missing SDS. If the requested SDS is not received or complete, the facility Safety coordinator shall notify the State Department of Labor and Industries and OSHA as outlined in Section 6.3. Records of correspondence with suppliers shall be maintained as proof of SJFC’s compliance efforts.

**5.13 Hazard Information for Outside Contractors & Others**

Contractors and others working for or on behalf of the company shall be informed by the manager / designee of the chemical hazards associated with operations in the areas where they will be working. Briefings shall relay the following information:

- 5.13.1 Hazardous materials used in the work area.
- 5.13.2 Description of general hazards related to those materials.
- 5.13.3 Location of Safety Data Sheets.
- 5.13.4 Required Personal Protective Equipment.
- 5.13.5 An explanation of labels used in the work area.
- 5.13.6 Spill & release reporting procedures.
- 5.13.7 Emergency alarm location/operation and evacuation procedures.
- 5.13.8 In the event that SJFC hires outside contractors, it is the responsibility of the contractors to provide OSHA Hazard Communication Training to their workers. The outside contractors must make available to SJFC, copies of SDSs for any chemical products brought into the job site or facility. In addition, contractors may examine SDSs for chemical products at the facility during regular working hours and may be issued copies of any SDSs if requested.

**5.14 Hazard Information for Non-Routine Tasks**

5.14 The Hazard Communication Standard requires that policies be in place for communicating hazards of non-routine tasks. A non-routine task is defined as a work

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assignment that is performed no more than once a quarter or four times a year. Examples of such work include major cleaning, equipment dismantling, or inspections. Prior to performing the non-routine task, the supervisor or the Safety coordinator will review the following:

- 5.14.1 Potential hazards associated with any new chemicals to be used during the task.
- 5.14.2 The need for any personal protective equipment and how to use it.
- 5.14.3 How to respond to an emergency during the task.
- 5.14.4. In the event that confined spaces exist at the facility, employees working in or around these confined spaces must have the proper confined space training requirements as set forth by OSHA.

**5.15 Availability of Written Hazard Communication Plan**

This Written Hazard Communication Program will be provided to any employee, their designated representatives, and/or the Assistant Secretary and the Director of the National Institute for Occupational Safety & Health (NIOSH) in the U.S. Department of Health & Human Services upon their request.

- 5.15.1 Copies of this Written Hazard Communication Plan are available by contacting the Safety coordinator.

**6.0 LABELS**

Labels or signs in accordance with OSHA requirements must properly identify all chemical containers and hazards. SJFC shall utilize either the NFPA and/or HMIS labeling system. At times DOT hazardous material classes in signs may also come from the supplier.

6.1 Containers Received from Manufacturers. For materials used in their original containers or packages, the labels supplied by the manufacturer of the product should be sufficient. Any chemical name or warning the supplier has put on a container must not be removed or defaced. Labels of hazardous chemicals that are received from suppliers shall contain the following information:

- 6.1.1 Identity or Name corresponding to the SDS;
- 6.1.2 Appropriate Hazard Warnings; and
- 6.1.3 Name & address of chemical manufacturer, importer or other responsible party.

6.2 To ensure that suppliers comply with labeling requirements, compliance checks of all incoming labels will be made by the employee ordering the chemicals. If a label is found to be out of compliance, the Safety coordinator will notify the supplier in writing within five (5) working days to obtain the needed information and have any

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corrections made. In the interim, employees using the chemical product will be verbally informed that the label is not in compliance and that correct labels have been requested. SJFC will supply labels or markings for those containers until the revised labels are received from the supplier.

6.3 Container Labels. Labels of hazardous chemicals repackaged or transferred to another container on-site, including drums and tanks, must display the following information:

- 6.3.1 Identity or Name corresponding to the SDS,
- 6.3.2 Any Appropriate Hazard Warnings,
- 6.3.3 Any specific warning required of any chemical covered by an OSHA substance-specific health standard,
- 6.3.4 This information should be copied from the manufactures label.

6.4 Label Notes

- 6.4.1 Chemicals that are transferred into a container for immediate use do not have to be formally labeled; a hand-written label is adequate. The employee filling the container, however, must use or return all remaining contents to the original container before leaving the work area.
- 6.4.2 Labels on tanks must be located close to eye-level and at a location where they are most visible to the traffic flow past the tank.
- 6.4.3 Labels shall be written in English (and other languages if necessary) and prominently displayed.

6.5 General Warning Labels. In work areas where a potential airborne hazard exists from materials not directly handled by employees, warning signs must be posted on the walls or ventilation hoods. General warning signs should always be posted at the entrance to any area where some form of personal protection is required, or where a potential hazard exists. The Safety coordinator, if necessary, makes decisions for posting signs.

6.5.1 Areas within SJFC that warrant Hazard Warning signs include but are not limited to:

- a) Work areas – Chemical Hazards
- b) Electrical Rooms – Electrical Hazard signs
- c) Cylinder Storage – Pressurized Gas
- d) Specific equipment – should be labeled if hot surfaces, pinchpoints, electrical or other physical hazards are present

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**7.0 PERSONNEL TRAINING**

7.1 All employees of SJFC who work with or are potentially exposed to hazardous chemicals will receive initial training on the Hazardous Communication Standard and the safe use of those hazardous chemicals.

7.2 As part of the initial HazCom training, information will be provided to employees about their rights under the law, methods that can be used to monitor their exposure to chemicals, and information about wearing appropriate personal protective equipment. Employees will be informed that a copy of the OSHA Hazard Communication Standard and a copy of the Company’s program will be available for their review. It will be located in the Safety Coordinator and Human Resource offices.

7.3 All employees shall be given additional, specific training by supervisors when a new material is brought into their work area or when they are transferred to a different work assignment.

7.4 The Safety Coordinator will review the employee training program to ensure its' effectiveness.

7.5 The Hazard Communication trainers will be the Safety Coordinator, and designated supervision.

7.6 The training plan will emphasize the following items:

7.6.1 A summary of the standard and this written program.

7.6.2 Hazardous chemical properties including visual appearance and odor and methods that can be used to detect the presence of hazardous chemicals

7.6.3 Physical properties and hazards of chemicals

7.6.4 Procedures to protect against hazards (i.e. personal protective equipment required, proper use and maintenance; work practices or methods

7.6.5 Procedures to assure proper use and handling of chemicals or other hazardous materials and procedures for emergency response.

7.6.6 Work procedures to follow to assure protection when cleaning hazardous chemical spills or leaks

7.6.7 Where the HCP and SDS's are located, how to read and interpret the information on both the SDS and container labeling, and how employees may obtain additional hazard information.

7.7 Attendance sheets for employee Hazard Communication Training shall be maintained in the hazard communication binder and Human Resources.

**8.0 EMERGENCY ACTIONS**

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Any unintentional, unexpected, non-routine and/or uncontrolled event that involves a hazardous substance may constitute an emergency situation.

8.1 It is the policy of SJFC that the safety of personnel not be jeopardized in the protection of property. Emergency Procedures address this issue.

8.2 Personnel working with hazardous substances must routinely use the appropriate personal protective equipment (gloves, safety glasses, etc).

8.3 Any and all emergencies must be reported to the Safety and Security dispatcher at 585-385-8111 or dial 911. If a telephone is not accessible or the situation warrants the fire alarm may be activated. Any other means appropriate should be used to spread the alarm.

8.4 Personnel should evacuate the area as soon as any danger to their health and safety becomes apparent. In case of a fire alarm, evacuate the building. All emergency exits are clearly marked.

8.5 Any measures that can be taken to mitigate the emergency, without endangering personnel, should be implemented but only by authorized persons. This could include shutting off the flow of the hazardous substance (closing a valve, uprighting a container, etc.) or containing the hazardous substance (shutting doors and windows, erecting a barrier, etc.).

8.6 Any formal shutdown procedure for processes, equipment or operations should be begun if it can be accomplished without endangering personnel.

8.7 Personnel should not attempt to clean up or dispose of any hazardous substance(s) that have been leaked or spilled unless they have been properly trained to do so. Contact the Safety coordinator and he or she will have clean up conducted or bring in the appropriately licensed firm to do so.

8.8 Emergency Contact phone numbers are presented in Appendix C. In the event of an accident or a spill, notify the Safety and Security dispatcher and an Incident Report will be filed. All completed forms are to be submitted to the Safety coordinator.

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**APPENDIX A**

**Emergency Contact Numbers**

<b>NAME</b>	<b>FUNCTION</b>	<b>CONTACT</b>
Al Camp	Haz-Com Coordinator	C 585-303-1249
Larry Jacobson	Supervisor	C 585-506-7398 O 585-385-8260
Fire Service	Fire emergency	911 or 585-385-8111
Ambulance	Medical Response - Emergency	911 or 585-385-8111
Exel Care	Medical Response – Non Emergency	585-203-1056
Medical Facility	Strong Memorial Hospital	Emergency: 585-425-9624
Police	Monroe County Sheriff’s Department	Emergency: 911 Non-Emergency: 585-753-4400
Natural Gas	RG & E	Emergency: 800-743-1702 gas 800-743-1701 electric Local: 800-743-2110
Electric	To Report a Power Failure Emergency All Other Calls	800-743-1701 electric 800-743-2110
Safety-Kleen	Emergency Spill Response (TSDf)	1-888-ER KLEEN
Spill Reporting	<b>EPA Region 2:</b>	<b>(212) 637-3000</b>
	<b>NY DEC</b>	<b>(518) 474-2121</b>
	State Police (nights & weekends)	911
	National Response Center	800-424-8802
Poison Control Center	Assistance	800-222-1222
Clean Harbors	Waste Management / Chemical Emergency Response	315-463-9901

**Appendix B**  
**Chemical Inventory List**

**Note: Submit completed form to the Safety coordinator.**

<b>Chemical</b>

**APPENDIX C**

**REVISION HISTORY**

REVISION NO	ACTIONS	DATE	BY
000	Initial issue as a controlled document	1/12	mwk
001	Reviewed, updated	10/15	AC
002			

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- 2.0 SCOPE**
- 3.0 GENERAL**
- 4.0 HAZARD ASSESSMENT AND EQUIPMENT SELECTION**
- 5.0 RESPONSIBILITIES**
- 6.0 PERSONAL PROTECTIVE EQUIPMENT PROCEDURES (PPE)**
  - 6.1 Head Protection
  - 6.2 Eye and Face Protection
  - 6.3 Foot Protection
  - 6.4 Hand Protection
  - 6.5 Protective Clothing
  - 6.6 Emergency Eyewash
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- 7.0 TRAINING**
- 8.0 PROGRAM EVALUATION**
- 9.0 RECORD KEEPING PROCEDURES**

APPENDIX A Revision History

APPENDIX B Certification of Assessment: PPE Assessment: Job Safety Analysis  
Hazard Assessment For Personal Protective Equipment (PPE):  
Hazard Assessment Form 1 (Worksheet) (see SP014 Safety Program Forms)

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**1.0 PURPOSE**

The Occupational Safety and Health Administration (OSHA) 1910.132-138, requires employers to review their workplace and determine the presence of recognized hazards that could cause death or serious physical injury to their employees. Employers must also develop the control procedures required to protect employees during work situations. These corrective techniques could include engineering controls, administrative controls, personal protective equipment, or a combination of those factors that will result in the protection of the employee.

The purpose of this written program is to ensure that proper procedures and safe methods are utilized to determine the proper type and level of personal protective equipment required to be worn during various work place activities. The intent of this program is to prevent injuries and/or illnesses from unsafe conditions that could be encountered during normal work activities.

This document serves as a policy for the development, implementation and maintenance of the Personal Protective Equipment (PPE) program for SJFC.

**2.0 SCOPE**

This procedure pertains to all SJFC employees and contractors that will be required to use PPE. It also reinforces SJFC commitment to maintaining a safe and healthy work environment, along with ensuring compliance with: 29 CFR 1910 Subpart I Personal Protective Equipment, which include the following:

1910.132 General Requirements	1910.136 Foot Protection
1910.133 Eye and Face Protection	1910.137 Electrical Protective Equipment
1910.134 Respiratory Protection*	1910.138 Hand Protection
1910.135 Head Protection	1910. 95 Hearing Protection

\*The respiratory protection program is a separate program.

**3.0 GENERAL**

3.1 This plan is designed to provide a formal procedure for identifying and controlling all personal protective equipment requirements.

3.2 Violation of established PPE procedures is a serious offense and failure to comply with this plan by employees or contractors shall result in appropriate disciplinary action.

3.3 Any violation of this procedure shall be reported immediately to the Supervisor.

3.4 Personal protective equipment shall be provided, used and maintained in a sanitary and reliable condition whenever it is necessary by reason of hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

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3.5 All personal protective equipment shall be of safe design and construction for the work to be performed.

3.6 The possibility of multiple and simultaneous exposure to a variety of hazards should be recognized. Adequate protection against the highest level of each of the hazards should be provided.

3.7 PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

3.8 Defective and damaged personal protective equipment shall not be used.

**4.0 HAZARD ASSESSMENT AND EQUIPMENT SELECTION**

Overview: To ensure that the best available hazard controls are implemented, SJFC shall:

- a) Identify hazards;
- b) Determine which methods provide the best protection for the operations;
- c) Establish the procedures required for the assessment of potential hazards;
- d) Identify the individuals who have responsibilities under this program and operations that require the use of PPE;
- e) Describe the training program this facility will utilize to instruct employees and contractors in the selection, use and care of PPE.

4.1 Work activities shall be reviewed to identify potential hazards and to determine if engineering controls are feasible to control the potential hazard. This will be accomplished by utilizing applicable and recognized assessment methods which can include but is not limited to the following:

- a) Job Safety Analysis (JSA)
- b) Hazard Operation Analysis
- c) Hazard Assessment Form (appendix B)

4.2 SJFC supervision shall assess each workplace to determine if hazards are present, or likely to be present, which require the use of personal protective equipment (PPE).

4.3 When engineering controls are deemed to be unfeasible, it is necessary to consider certain general guidelines for assessing the foot, head, eye and face and hand hazard situations that exist in an operation or process and to match the protective devices to the particular hazard.

4.4 Once it has been determined that such hazards are present or likely to be present the supervision shall:

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- 4.4.1 Determine if engineering controls are feasible.
- 4.4.2 Select and have each affected employee use the type of PPE that will protect the affected employee from the hazards identified in the hazard identification and risk assessment.
- 4.4.3 Communicate selection decisions to each affected employee.
- 4.4.4 Select the PPE that properly fits each affected employee.
- 4.4.5 Have each affected employee use, the PPE that will protect the affected employee from the hazards identified in the assessment.

4.5 SJFC shall verify that the required workplace hazard identification and risk assessments have been performed through a written certification as identified in this section, which includes:

- 4.5.1 The persons certifying that the evaluation has been performed;
- 4.5.2 The dates of the hazard assessment; and
- 4.5.3 Identifies the document as a certification of hazard identification and risk assessment.

**5.0 RESPONSIBILITIES**

- 5.1 Managers and Supervisors are responsible for ensuring that all authorized employees are trained in this procedure. Training is to be formally documented and transferred to Human Resources for inclusion in the employee training file.
- 5.2 The Safety Coordinator is responsible for ensuring adequacy of this procedure, and assessing compliance on a periodic basis. Safety Coordinator will update this procedure as needed.
- 5.3 The Safety Coordinator is responsible for implementing and maintaining all OSHA related recordkeeping per 29CFR 1904.
- 5.4 Safety Coordinator is responsible for conducting annual audits of procedures to ensure compliance with applicable regulations.
- 5.5 Employees are required to use specified PPE and failure to comply with this procedure could lead to disciplinary actions up to and including discharge.

**6.0 PERSONAL PROTECTIVE EQUIPMENT PROCEDURES (PPE)**

6.1 Head Protection

Employees are to wear approved hard hats to prevent injuries whenever work conditions require them, such as exposure to overhead hazards, flying objects, on aerial lift

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equipment, or other potential head injury hazards. Hard hats must be maintained in a reasonably clean condition and shall not be painted or defaced.

6.1.1 Each employee should inspect their hard hat at regular intervals for cracks or other signs of damage or deterioration.

6.1.2 Protective helmets designed to reduce electrical shock hazard shall be worn by each affected employee when near exposed electrical conductors which could contact head. Helmets- Class I rated to 2,000 volts only. Class II rated to 20,000 volts.

6.1.3 Protective helmets purchased after July 5, 1994 shall comply with ANSI Z89.1-1986 or shall be demonstrated to be equally effective.

6.1.4 Protective helmets purchased before July 5, 1994 shall comply with the ANSI Z89.1-1969 standard or shall be demonstrated to be equally effective.

**6.2 Eye and Face Protection**

Protective eye and/or face protection shall be worn where there is a danger of injury from flying objects, glare, liquids, weld arcing, or other potential eye hazard sources.

6.2.1 Each affected employee shall use appropriate eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors meeting the pertinent requirements of this section are acceptable.

6.2.2 Each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or shall wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

6.2.3 Eye and face PPE shall be distinctly marked for identification of the manufacturer.

6.2.4 Protective eye equipment must be used as designed, be reasonably comfortable, fit snugly and not interfere with natural movement and operation.

6.2.5 Each affected employee shall use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation.

6.2.6 Protective eye and face devices purchased after July 5, 1994 shall comply with ANSI Z87.1-1989 or shall be demonstrated to be equally effective.

Protective eye and face devices purchased before July 5 1994 shall comply with ANSI Z87.1-1968 or shall be demonstrated to be equally effective.

6.2.7 Where additional eye hazards are present, other approved eye or face protection must be used such as chemical goggles, face shields, welders shields etc., depending on the application. Various types of face shields, welding shields etc. are to

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be made available for employees whether used alone or over prescription glasses or other safety eye wear.

6.2.8 No employee shall wear contact lenses where eye protection is required without approval of a doctor and SJFC.'s Safety Coordinator.

**6.3 Foot Protection**

Foot protection shall be worn where there is a danger of injury from slippery surfaces, puncture, heavy objects such as barrels or tools that might roll onto or fall on employees' feet, sharp objects such as nails or spikes that might pierce ordinary shoes, molten metal that might splash on feet, hot or wet surfaces.

6.3.1 Supervision is responsible for seeing that all employees under their control are wearing appropriate rugged safety shoes. Appropriate shoes are those that provide protection including:

6.3.2 Soles which prevent against impact to toes and feet, punctures, slipping, penetration by water, deterioration by chemicals and solvents, hot materials, electrical hazards and uppers which protect against expected scraping and scratching from rough materials and meet the safety requirements of the work being performed. (Steel toe required or compatible) for all general day to day work duties unless declared hazardous for a certain situation.

6.3.3 Foot protection will be selected as required, including the addition of boots, for the particular working environment of each individual.

6.3.4 Protective footwear purchased after July 5, 1994 shall comply with ANSI Z41-1986 or shall be demonstrated to be equally effective.

Protective footwear purchased before July 5, 1994 shall comply with ANSI Z41.1-1967 or shall be demonstrated to be equally effective.

6.3.5 Sneakers or open toed shoes shall not be worn on any job site or any area where the employee is exposed to a potential foot injury. Footwear reinforced with a flexible inner sole is not suitable to be worn where contact with energized electrical equipment is possible.

**6.4 Hand Protection**

Gloves should be selected to provide specific protection from particular hazards such as cuts, burns, bruises, caustics, slivers etc. when the hazard is present. Hand protection shall be selected as follows:

<i>Hazard</i>	<i>Protection</i>
Caustics, chemicals	Gloves: Specially designed for exposure
Electricity	Gloves: rubber, covered with leather gloves (See additional information below)
Heat, flame	Gloves: leather, aluminized fabrics, aramid, wool
Heavy materials	Gloves: leather, canvas
Mild irritants	Barrier creams: light duty

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Non-chemical liquids Sharp objects	Moisture resistant gloves, rubber Gloves: cut-proof
---------------------------------------	--

6.4.1 Supervisors shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified and shall document findings in the PPE Assessment.

6.4.2 Gloves used for electrical work

All gloves utilized for electrical work shall be identified by class number. Electrical rubber insulating gloves shall meet the following national standards.

ASTM F 496-93b, Specification for In-Service Care of Insulating Gloves and Sleeves.

ASTM D 120-87, Specification for Rubber Insulating Gloves.

Protector gloves shall be worn over insulating gloves, except as follows:

Protector gloves need not be used with Class 0 gloves, under limited-use conditions, where small equipment and parts manipulation necessitate unusually high finger dexterity.

Note: Extra care is needed in the visual examination of the glove and in the avoidance of handling sharp objects.

6.4.3 Any other class of glove may be used for similar work without protector gloves if the employer can demonstrate that the possibility of physical damage to the gloves is small and if the class of glove is one class higher than that required for the voltage involved. Insulating gloves that have been used without protector gloves may not be used at a higher voltage until they have been properly tested.

6.4.4 Gloves shall also be capable of withstanding the a-c proof-test voltage specified in Table I-2 of OSHA CFR 29 1910.137 after a 16-hour water soak.

6.4.5 Rubber insulating gloves and sleeves with minor physical defects, such as small cuts, tears, or punctures, may be repaired by the application of a compatible patch. Also, rubber insulating gloves and sleeves with minor surface blemishes may be repaired with a compatible liquid compound. The patched area shall have electrical and physical properties equal to those of the surrounding material. Repairs to glove are permitted only in the area between the wrist and the reinforced edge of the opening.

6.4.6 Rubber insulating gloves used for electrical work shall be tested before first issue and every 6 months thereafter. If the insulating equipment has been electrically tested but not issued for service, it may not be placed into service unless it has been electrically tested within the previous 12 months.

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6.5 Protective Clothing

Employees shall wear appropriate clothing in the performance of their jobs to provide protection against environment and hazards. Protective clothing will be provided for the specific task and shall be worn. Final determination will be by supervision.

6.5.1 Rain coats, aprons, protectors, and other protective clothing shall be worn as required. Loose clothing shall not be worn around moving machinery.

6.5.2 Rings should not be worn by employees working on or around electrical installations, moving machinery, or such manual jobs involving the handling of tools, materials and equipment. Gloves or tape may be worn over ring by employees having strong feelings against its removal.

6.6 Emergency Eyewash

All locations where there is a hazard of eye injury from splashing of caustic, corrosive, or other eye irritants shall be provided with eye wash kits. Employees must be aware of the availability and location of these kits and know how to use them. Eye wash kits must be replaced immediately after each use. Permanent eye wash stations should be installed in facilities which have running water.

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6.7 Other

It is the responsibility of supervision that all employees are sufficiently protected, however all employees should take the first step in safely protecting themselves. Failure to use required and available protective equipment will result in disciplinary action. All personal protection equipment will be determined and supplied by supervision as needed. Supervision will immediately replace defective personal protection as required.

**7.0 Training**

7.1 Training will be completed by the Safety Coordinator or supervision to the employees exposed. The training and/or retraining of employees in proper use of PPE will be completed after a hazards assessment has been completed. The employee must know when PPE is needed, what type of PPE is required, the correct manner of wearing the PPE, proper care and maintenance of the PPE, and their limitations.

7.2 The Safety Coordinator and supervision shall set and document measurable training goals, and employees must demonstrate an understanding of the specified training and the ability to use PPE properly, before they are allowed to work in the area that requires them to use PPE.

7.3 When supervision has a reason to believe that any affected employee who has already been trained does not have the understanding and skill required of this section, the employee must be retrained. Circumstances where retraining is required include, but are not limited to, situations where:

7.3.1 Changes in the workplace render previous training obsolete,

7.3.2 Changes in the types of PPE to be used render previous training obsolete,

7.3.3 Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

7.4 Written certification that identifies each employee trained, the date of training and certificate as documentation of the training is required.

**8.0 PROGRAM EVALUATION**

8.1 The Safety Coordinator / designee shall conduct an annual review of the Personal Protective Equipment program. The purpose of this review shall be to ensure that all aspects of the plan are being implemented and that each authorized employee understands and can demonstrate the requirements for selecting and using PPE.

8.2 After action meetings shall be conducted when necessary to evaluate concerns encountered when using PPE. This format will help to identify and document any potential problems or concerns that were observed during the work operation and ensure that the proper PPE is being used.

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**APPENDIX A**

REVISION HISTORY

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000	Initial issue as a controlled document	1/12	mwk
001	Reviewed	10/15	AC
002			

**APPENDIX B**

**Certification of Assessment  
PPE Assessment: Job Safety Analysis**

<b>Work place:</b>	<b>Address:</b>	<b>Date(s) of Assessment:</b>
<b>Assessment Conducted By:</b>	<b>Title:</b>	<b>Signature:</b>
<b>Implementation of Controls</b>		
Approved By:	Title:	Date:

**General Daily Activities: Vehicle Travel (example)**

<b>Task</b>	<b>Potential Hazards</b>	<b>Prevention / Controls</b>
Routine daily activities: Travel company car or truck.	Motor vehicle accident walking/driving to and from work site; striking pedestrians, bicyclists, or other individuals.	-Ensure license is valid for vehicle driven -Wear seatbelt, -Stay alert for pedestrians, bicyclists, and others.
	Sun-glare causing short term distraction or blindness.	-Use glare use wear sunglasses -Stay alert for pedestrians, bicyclists, and others.
	Loose materials in truck or falling materials from truck could cause traffic accident.	-Ensure equipment on vehicle is secured properly, -Follow service vehicle training,

**PPE Required:**

- Sunglass (if necessary)

**Equipment Procedures/Requirements:**

1. Follow all State and Federal traffic laws.
2. Inspect vehicle before shift. Inspect for Visible Damage, Tires, treads, Controls: lights, turn signals, etc., Backing alarms, Loads, Equipment, Belts, hoses, Fuel, Windshield wipers.
3. Operate vehicle safely: practice defensive driving. Adjust mirrors to include side of vehicle. Use spotter when view is blocked - Stand (place) where you can see him/her. If no one around – get out and check – don't guess.
4. Avoid activities that will distract your driving such as: Eating, drinking, grooming,


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Reading maps, Using navigator, Using phone (without hands-free).

Aggressive driving such as Speeding, Tailgating, Not signaling, running red light, cutting other drivers off, Failing to yield, Aggressive driving: rushing.

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**Certification of Assessment  
PPE Assessment: Job Safety Analysis**

<b>Name of work place:</b> Heating & Air Conditioning, Inc	<b>Address:</b> 277 Winton Road North, Rochester, NY 14610	<b>Date(s) of Assessment:</b> 1/16/12
<b>Assessment Conducted By:</b> Michael Keefe, CSP	<b>Title:</b> Safety Consultant : Reditus Safety	 <b>Signature:</b>
<b>Implementation of Controls</b>		
Approved By:	Title:	Date:

**General Daily Activities: Vehicle Travel**

<b>Task</b>	<b>Potential Hazards</b>	<b>Prevention / Controls</b>
Routine daily activities: Travel company car or truck.	Motor vehicle accident walking/driving to and from work site; striking pedestrians, bicyclists, or other individuals.	-Ensure license is valid for vehicle driven -Wear seatbelt, -Stay alert for pedestrians, bicyclists, and others.
	Sun-glare causing short term distraction or blindness.	-Use glare use wear sunglasses -Stay alert for pedestrians, bicyclists, and others.
	Loose materials in truck or falling materials from truck could cause traffic accident.	-Ensure equipment on vehicle is secured properly, -Follow service vehicle training,

**PPE Required:**

- Sunglass (if necessary)

**Equipment Procedures/Requirements:**

5. Follow all State and Federal traffic laws.
6. Inspect vehicle before shift. Inspect for Visible Damage, Tires, treads, Controls: lights, turn signals, etc., Backing alarms, Loads, Equipment, Belts, hoses, Fuel, Windshield wipers.
7. Operate vehicle safely: practice defensive driving. Adjust mirrors to include side of vehicle. Use spotter when view is blocked - Stand (place) where you can see him/her. If no one around – get out and check – don't guess.
8. Avoid activities that will distract your driving such as: Eating, drinking, grooming,

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- 9. Aggressive driving such as Speeding, Tailgating, Not signaling, running red light, cutting other drivers off, Failing to yield, Aggressive driving: rushing.

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**General Daily Activities: Service and Install**

Task	Potential Hazards	Prevention / Controls
Routine daily activities: Service & install	<ul style="list-style-type: none"> <li>-Slipping/tripping on uneven, oily or wet surfaces</li> <li>-Drop object on foot</li> </ul>	<ul style="list-style-type: none"> <li>-Wear steel-toe, slip resistant footwear</li> <li>-Pre-plan route from truck to work area Keep areas dry, clean and unobstructed, as much as possible</li> <li>-Routine and frequent housekeeping to keep area clear of material debris and waste</li> </ul>
	Poor lighting	-Ensure proper lighting in workspace is available
	Muscle/Ligament Strain while lifting heavy materials, equipment or awkward working positions	<ul style="list-style-type: none"> <li>-Material Handling Protocol: Practice safe lifting: Mechanical lifting first, wheel carts, slings, then buddy system then safe lifting by positioning body to avoid strains, take appropriate breaks</li> <li>-Transport heavy equipment using hand trucks</li> <li>-Team lifting whenever possible</li> </ul>
	Static postures for prolonged periods, awkward body postures, awkward postures of the wrist	<ul style="list-style-type: none"> <li>-Position work between waist and shoulder when possible,</li> <li>-Use work stools</li> <li>-Stretch often and use opposite movement stretch</li> </ul>
	Working near moving parts	<ul style="list-style-type: none"> <li>-Avoid moving parts, shut off, if possible put up barriers to avoid contact</li> <li>-Avoid loose clothing, jewelry and keys</li> <li>-Establish zero energy state or lock/tag Out equipment before repairing or servicing</li> </ul>
	Asbestos exposure	<ul style="list-style-type: none"> <li>-Training how to identify potential asbestos material</li> <li>-Avoid contact</li> <li>-If friable or damaged material, notify office immediately</li> </ul>
	Exposure to poor weather conditions Excessively hot temperatures; heat exhaustion, heat stroke, heat stress	<ul style="list-style-type: none"> <li>-Situational awareness: Protect from adverse weather elements to maximum extent possible</li> <li>-Take frequent breaks in cooler areas, Drink plenty of hydration replacing fluids, avoid working in direct sunlight</li> </ul>
	Noise: excessive noise which requires you to talk loudly or raise your voice and lean into person to communicate, hard to	-Use hearing protection for noise exposure

	communicate.	
	Eye Injury, Skin irritation from coolant splashes	-Goggles, face shield, apron, gloves, proper operation of coolant tester

**PPE Required:**

- Foot Protection: Safety shoes/boots
- Hearing Protection
- Hand Protection: Gloves
- Eye Protection: Goggles for splash or safety glasses for impact

**Equipment Procedures/Requirements:**

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object/material handled or worked-on either overhead or directly in front of the operator can cause flying objects including dust, splash, particles, fragments, or any other struck-by hazards, eye protection shall be worn.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn.
7. Keep hands, hair and loose clothing clear of all moving parts.

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**General Daily Activities: Ladders, Hand and Power Tools (including shop, saws, drills, compressed air, etc.)**

<b>Task</b>	<b>Potential Hazards</b>	<b>Prevention / Controls</b>
General Use	Inhalation: Dust/particles generated during (any) machine operation	Appropriate natural ventilation, disposable respirators, automatic vacuum machine
	Cuts, pinches, smashes, punctures, severing of fingers	-Keep tools and equipment in serviceable condition -Inspect tools before use -Wear proper PPE -Use according to manufacturer's instructions -Use necessary caution required for all tools
	Noise: excessive noise which requires you to talk loudly or raise your voice and lean into person to communicate, hard to communicate.	-Use hearing protection for noise exposure
	Eye Injury Projectiles	Use appropriate eye protection: Safety glasses with side shield or appropriate safety goggles for splash hazards
	Trauma: Projectiles, rotating parts, point of operation, ingoing nip joints, flying chips & sparks	Situational awareness, Inspect tools before use, machine guards in place, PPE, protective clothing
	Foot Injury: Drop object on foot	-Safety shoes -Proper housekeeping -Secure loose materials, use clamps, etc.
	Hand Injury: Point of Operation, ingoing nip points, rotating parts, flying chips and sparks	Situational awareness, Inspect tools before use, machine guards in place, PPE (gloves), protective clothing
	Electrical Shock: Improper grounding, improper operations and maintenance	-Inspect tools and cords for hazards before use, -Create a zero energy state using Lockout/tagout, proper grounding of frame, -Follow manufacturer's instructions strictly -Use GFCI protection for all portable tools
	Fire: Heat, sparks	Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area
Using	Ladder collapsing, slipping/falling	-Inspect ladder before use

ladder	from ladder	<ul style="list-style-type: none"> <li>-Use ladder of proper height</li> <li>-Ensure ladder is properly assembled, locked and on level surface</li> <li>-Do not exceed weight limit for ladder</li> <li>-Do not stand on top of ladder or on top rung</li> <li>-Use fall protection, if necessary</li> </ul>
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**PPE Required:**

- Foot Protection: Safety Shoes/Boots
- Eye protection: Safety glasses/goggles
- Face Protection: Face Shield (where appropriate) disposable Respirators (where appropriate)
- Hearing Protection
- Hand Protection: Gloves

**Equipment Procedures/Requirements:**

1. Operate equipment in strict accordance with manufacturer’s instructions and in accordance with OSHA regulations.
2. Only authorized users can operate equipment.
3. Hearing Protection must be worn upon entering compressor area.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Never use compressed air to clean your body or clothes.
6. If using compressed air to blow debris, use only approved nozzle (30 psi maximum cutoff) and effective chip guarding/ eye protection PPE will be used.
7. All points of operation, belts, pulleys, gears, shafts shall be guarded.
8. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
9. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
10. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
11. All portions of the blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide and the table.
12. A tool retainer shall be installed on each piece of utilization equipment, which, without such retainer, may eject tool.
13. Hose and hose connections used for conducting compressed air to utilization equipment must be designed for the pressure and service to which they are subjected.
14. Report any observed defect or safety hazard to your supervisor immediately.

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- 15. Where any object/material handled or worked-on either overhead or directly in front of the operator can cause flying objects including dust, splash, particles, fragments, or any other struck-by hazards, eye protection shall be worn.
- 16. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
- 17. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn.
- 18. Keep hands, hair and loose clothing clear of all moving parts.

**Additional Precautions for Fuel Powered Engines:**

- 1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
- 2. Never fuel the engine while running or in the presence of an open flame.
- 3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
- 4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
- 5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
- 6. Keep all guards and shields in place.
- 7. Keep hands, hair and clothing away from moving parts.

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**General Activities: Unit Electrical Diagnosis or Service**

Task	Potential Hazards	Prevention / Controls
-Assess task for exposure to energized electric components or circuit parts with voltage greater than 50v-600v to ground	-Electrical shock, arc flash, arc blast	-Conduct safety brief -Only Qualified Electricians can perform this work: ensure proper training has been conducted -Ensure inspection and testing of protective equipment and tools -Ensure barriers, if necessary, are in place to prevent unauthorized entry or contact with live parts -De-energize electrical components -If unable to de-energize, create a safe electrical work condition through the use of work practice, appropriate level electrical PPE, implement lockout/tagout procedures -Wear appropriate clothing for task (footwear, flame resistant material) IAW NFPA 70E.
-Repair of electrical components, devices and parts	-Improper use of repair tools -Electrical shock	-Use proper insulated tools for each task -Ensure proper inspection and testing of protective equipment, tools -De-energize electrical components -If unable to de-energize, create a safe electrical work condition through the use of work practice, appropriate level electrical PPE, implement lockout/tagout procedures -Wear appropriate level PPE, implement lockout/tagout procedures

**PPE Required:**

- Foot Protection: Insulated Safety Shoes/Boots
- Eye protection: Safety glasses/goggles
- Face Protection: Face Shield
- Hearing Protection
- Hand Protection: Appropriate class rated Gloves

**Equipment Procedures/Requirements:**

1. Operate equipment in strict accordance with manufacturer’s instructions and in accordance with OSHA regulations.
2. Only Qualified Electricians can perform work on electrical components to test,

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diagnosis or verify zero-energy state.

3. Only authorized employees can place locks and tags on disconnect devices and verify a zero-energy state.
4. All points of operation, belts, pulleys, gears, shafts shall be guarded.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object/material handled or worked-on either overhead or directly in front of the operator can cause flying objects including dust, splash, particles, fragments, or any other struck-by hazards, eye protection shall be worn.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn.
9. Keep hands, hair and loose clothing clear of all moving parts.

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**General Daily Activities: Welding / Hot work (includes soldering guns/irons, sweating, etc)**

<b>Task</b>	<b>Potential Hazards</b>	<b>Prevention / Controls</b>
-Welding /Hot Work	Eye injury from flash Burn	-Appropriate PPE according to 29 CFR 1910.132, 1910.252 for eye protection, gloves, and clothing (Welder's cap; safety glasses, oxygen fed respirator, if required; Welder's face shield; welder's gloves; welder's apron) -Use hot work permit (see equipment procedures)
	-Skin irritation/burning -Residual surface contamination Some fluxes contain toxic compounds (i.e. cadmium and fluorides) -Soldering with lead containing solders Toxic compounds in fluxes	-Use in well-ventilated area -Review SDS, substitute cleaner with non-toxic product, use appropriate PPE/protective clothing -Wipe down work area when finished Review SDS -Substitute with nontoxic compounds if available
	Fire - Hot soldering iron	-Appropriate placed fire extinguisher, remove all combustibles and fire hazards from soldering area

**PPE Required:**

- Eye Protection: Safety glasses w/side shields/Goggles
- Foot Protection Safety Shoes/Boots (for protection against dropped objects when necessary)
- Protective Clothing

**Equipment Procedures/Requirements:**

1. Review applicable SDS when using toxic fluxes to determine PPE requirements.
2. Only authorized users can equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional with written justification).
6. If work cannot be moved, ensure combustible /flammable material is at a safe distance or removed before work begins (behind walls, structures).
7. Ensure hot work permit is issued before work begins.
8. Keep particles/dust from accumulating.

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9. Have suitable fire extinguishing equipment.
10. Assign firewatch for minimum of ½ hour.
11. Have flux and welding rods appropriate for type weld and material being welded.
12. Ensure proper ventilation, atmospheric monitoring, if necessary, fit test for proper respirator type and use, use forced ventilation or local exhaust (forced suction) at the arc to remove fumes from breathing area.
13. Ensure cylinders and all leads are in good repair and serviceable before work begins.
14. Secure all cylinders, store upright.
15. Ensure each are cleaned thoroughly and make absolutely certain that no flammable materials are present or any substances such as greases, tars, acids, or other materials which when subjected to heat, might produce flammable or toxic vapors.
16. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.
17. Ensure proper grounding.
18. Ensure arc welding equipment is serviceable and in good repair.
19. Remove electrodes from holders and locate so that accidental contact cannot occur and disconnect machine from power source.
20. Ensure there are no kinks, cracks or damage to hoses.
21. Ensure all torch valves are closed and inspect for possible leaks.
22. In instances of backfire, turn off gas, check connections before relighting

**Hazard Analysis: Pipe Threader**

Task	Potential Hazards	Prevention / Controls
General Use	Foot Injury: Drop object on foot	Safety Shoes
	Electric Shock: Improper operation and maintenance, improper grounding	Manufactures instructions strictly followed, proper grounding
	Hand Injury: Point of operation, rotating parts	Hand Protection: Gloves, situational awareness
	Eye Injury: Flying particles	Eye Protection Safety glasses w/side shields
	Noise Running equipment	Hearing Protection

**PPE Required:**

- Safety Glasses w/side shields
- Safety Shoes/ Boots
- Gloves
- Hearing Protection

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**Equipment Procedures/Requirements:**

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
4. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional with written justification).
5. Keep hands, hair and loose clothing clear of all moving parts.

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**Appendices**

- A Revision History

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**1.0 PURPOSE**

Confined spaces have the capability to possess hazards beyond those encountered at most typical work locations. In addition to an increased risk of physical trauma caused by restricted work areas, a confined space may present hazards such as oxygen deficiency, flammable/ explosive atmosphere, toxic contaminants, engulfment/flooding, biological agents, high noise levels, and mechanical contact.

This section establishes minimum requirements and procedures for the safety and health of personnel who work in, and in connection with confined spaces.

**2.0 SCOPE**

This section establishes both policy and minimum safety requirements necessary to ensure the safety of all personnel entering, exiting, and working within confined spaces throughout SJFC. This section is written to comply with the OSHA Rule; 29 CFR 1910.146 Permit Required Confined Spaces. Entry into a confined space shall be permitted in conjunction with a suitable air testing and permit procedure.

**3.0 DEFINITIONS**

3.1 Confined Space: Confined space is defined as any enclosed space which has all the following:

3.1.1 is large enough and so configured that an employee can enter and perform assigned work;

3.1.2 has limited or restricted means for entry or exit; and,

3.1.3 is not designed for continuous employee occupancy.

**3.2 Hazardous Atmosphere**

An atmosphere which exposes employees to a risk of death, incapacitation, and impairment of ability to self-rescue, injury or acute illness from one or more of the following causes:

3.2.1 An atmospheric oxygen concentration below 19.5% or above 23.5%. (Normal air contains 20.8% oxygen at sea level.)

3.2.2 A flammable gas, vapor or mist in excess of 10 % of its lower flammable limit (LEL)

3.2.3 An atmospheric concentration of any substance for which a permissible exposure limit is published in Subpart G and Z of 29 CFR 1910 and could result in employee exposure in excess of its permissible limit(s).

3.2.4 An airborne combustible dust at a concentration that obscures vision at a distance of five feet (1.52m) or less.

3.2.5 Any atmospheric condition recognized as immediately dangerous to life or health.

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3.3 Non-Permit Confined Space:

A non-permit confined space is one that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

3.4 Permit Required Confined Space

A confined space that has one or more of the following characteristics:

- 3.4.1 Contains or has a potential to contain a hazardous atmosphere;
- 3.4.2 Contains a material that has the potential for engulfing and entrant;
- 3.4.3 Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- 3.4.4 Contains any other recognized serious safety or health hazard.

3.5 Entry

- 3.5.1 The act by which a person intentionally passes through an opening into a confined space.
- 3.5.2 The entrant is considered to have entered as soon as any part of the entrant's body breaks the plane of an opening into the space.

**4.0 DUTIES AND REQUIRED TRAINING FOR PERMIT REQUIRED CONFINED SPACE ENTRY**

Entry into a Permit Required Confined Space will require a specially trained and equipped team which consists of:

4.1 Authorized Entrant

Authorized Entrants (Entrants) are employees who you authorize to enter a Permit Space. They must know what hazards may be faced during the confined space entry, including:

- 4.1.1 How exposure to the hazards might occur.
- 4.1.2 Signs or symptoms indicative of exposure to the potential hazards as well as the consequences of exposure to these hazards.
- 4.1.3 Maintain a continuous means of communication with the attendant outside of the space to enable the Attendant to monitor the status of all employees within the space.
- 4.1.4 Properly use the equipment required for entry and exit.
- 4.1.5 Alert the attendant in the event of an emergency or whenever the Entrant recognizes any warning sign or symptom of exposure to a dangerous situation so that the Attendant can alert the employees if the need to evacuate the space arises.

Evacuate the space if an emergency occurs.

Alert the Attendant outside the space.

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Alert the attendant the Entrant detects a condition that is prohibited by the Entry Permit.

Exit from the Permit Space as quickly as possible whenever any of the following situations occur:

The Entry Supervisor or Attendant orders evacuation of the space.

An evacuation alarm is activated.

The Entrant recognizes any warning sign or symptom of exposure to a dangerous situation.

The Entrant detects a condition prohibited by the Entry Permit.

4.2 Attendant = an attendant(s) **SHALL** be stationed outside any Confined Space to serve as a Safety Person.

4.3 Entry Supervisor = The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations and for terminating entry as required by this Section of the rules.

4.4 Designated Rescue and Retrieval personnel

4.5 Each member of the team will receive initial and annual refresher training. The training will be specific for the duties of each team member and include the procedures and practices necessary to protect them from the hazards of the permit space. The training program will include the duties of each team member as listed below.

**4.2 Attendants**

1. Provide standby assistance to occupants entering the confined space.
2. Direct occupants to exit the confined space when any irregularities are observed.
3. Initiate evacuation and emergency procedures.
4. Monitor for any conditions or changes that could adversely affect the entry.
5. Remain at their assigned station until relieved by another attendant or until the permit space entry is complete.
6. Know the hazards associated with the permit space and their effects.
7. Maintain an accurate account of the authorized entrants.
8. Summon rescue and applicable medical services in the event of an emergency.
9. Perform non-entry rescue procedures.
10. Establish measures to prevent unauthorized personnel from entering permit space.

The number of attendants needed **SHALL** be determined by a qualified entry supervisor who shall consider the manpower necessary to carry out the duties.

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**4.3 Entry Supervisors**

1. Know the hazards associated with the permit space and their effects.
2. Verify that the safeguards required by the permit have been implemented.
3. Verify that rescue services are available and that means for summoning them are operable.
4. Cancel the written permit and terminate the permit space entry when required.
5. Remove personnel who are not authorized to enter the permit space during entry operations.
6. Periodically, determine that the entry operation is being performed in a manner consistent with the requirements of the permit space entry procedures and that acceptable entry conditions are maintained.

**4.4 Rescue and Retrieval Personnel**

Designated Rescue and Retrieval Personnel shall be trained and aware of the elements of an emergency confined space rescue. These elements include but are not limited to:

1. Be involved in preplanning for a confined space emergency.
2. Have received training in Rescue Elements
3. Be involved with developing Standard Operating Procedures (SOP)
4. What to expect from Emergency Service agency and what they expect from us.

**5.0 PERMIT REQUIRED CONFINED SPACE IDENTIFICATION**

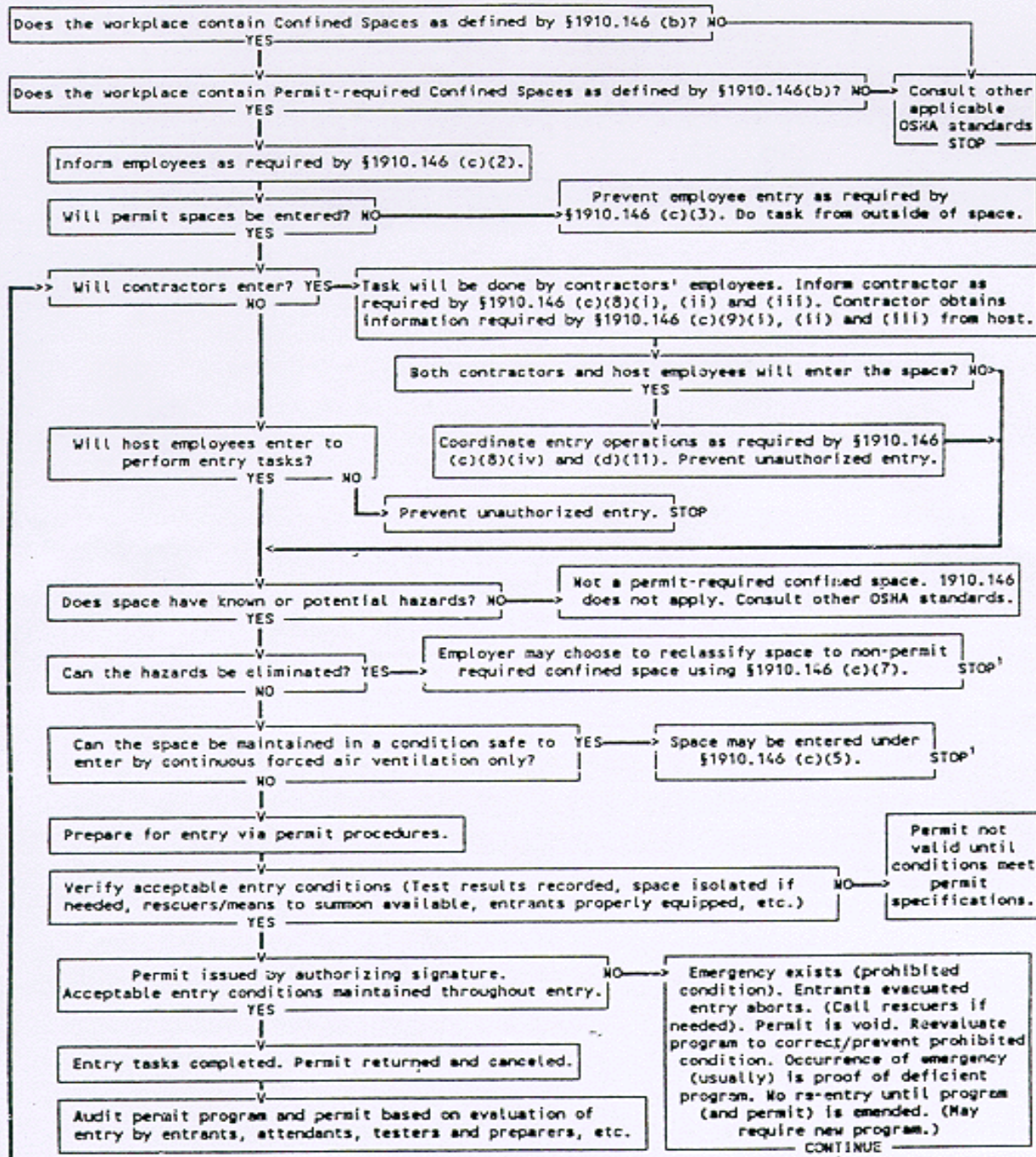
Due to the differing nature of projects that SJFC employees encounter, potential confined spaces that require entry shall be identified at the onset of each individual project. SJFC supervision will determine if any of the confined spaces that need to be entered on that work site are considered permit required and will require that permit entry procedures be followed:

SJFC has developed a Permit Required Confined Space Decision Flow Chart for the determination of confined spaces. This flow chart shall be used to determine the classification of a confined space.

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APPENDIX A TO §1910.146—PERMIT-REQUIRED CONFINED SPACE DECISION FLOW CHART



**5.1 Procedures****A - Confined Space Determination**

The **Entry Supervisor** shall determine if the space under their authority is a confined space, and based upon the evaluation of the known or potential hazards associated with the space and the proposed work activities, classify the confined space as a permit-required, non-permit required low-hazard or non-permit confined space. The space shall first be evaluated to determine if it is a confined space based upon the OSHA definitions.

**B - Hazard Identification****1. Atmosphere**

Before the confined space can be entered the following atmospheric hazards must be identified and evaluated. Before an employee enters any confined space, the internal atmosphere shall be tested from outside the space, using direct-reading instruments equipped with remote sampling probes. The sequence of testing shall be as follows:

- \* Oxygen concentration;
- \* Flammable gas, vapor or mist; and
- \* Potential toxic contaminants over permissible exposure limits (or as specified by the entry supervisor)

These tests will be conducted to determine if the space contains or has the potential to contain one or more of the following:

1. Atmospheric oxygen concentration below 19.5 % or above 22 %,
2. A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL), also known as lower explosive limit (LEL) ,
3. An atmospheric concentration of any substance for which a permissible exposure limit (PEL) is published by OSHA and could result in employee exposure in excess of its permissible exposure limits, but only if it is capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects. For substances without an OSHA-designated PEL consult other sources of information such as the Material Safety Data Sheets (SDS's) for guidance in establishing acceptable environmental conditions,
4. An airborne combustible dust at a concentration that meets or exceeds its lower explosive limit or that obscures vision at a distance of five feet or less,
5. Any other atmospheric condition recognized as immediately dangerous to life or health (IDLH).

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**2. Material Stored**

Contains a material that has the potential for engulfing an entrant.

**3. Internal Configuration**

Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or a floor which slope downward and tapers to a smaller cross-section; or other recognizable hazards

**C - Confined Space Evaluation and Classification**

A qualified person **SHALL** identify the potential hazards for each confined space. The hazard identification process **SHALL** include a review of the following:

- 1) The past and current uses of the confined space which may adversely affect the atmosphere of the confined space;
- 2) The physical characteristics, configuration and location of the confined space;
- 3) Existing or potential hazards in the confined space, such as:
  - Oxygen deficient or enriched atmosphere
  - Flammable/explosive atmosphere
  - Toxic atmosphere
  - Biological hazards associated with the confined space; and mechanical hazards.

Each identified hazard **SHALL** be evaluated by a qualified person and examined with respect to:

- a. Scope of hazard exposure;
- b. Magnitude of the hazard;
- c. Consequences of the hazard;
- d. Potential for changing conditions/activities;
- e. Strategies for controlling the hazards; and Impact on the need for emergency response.

The evaluation will place the area into two classifications.

1) **Permit-required Confined Space** - A confined space shall be considered a permit- required confined space if it contains one or more of the above hazards.

2) **Non-permit Confined Space** - The confined space is considered to be a non- permit confined space if it can be made safe by acceptable means of continuous forced air ventilation alone to maintain the space safe for entry. To accomplish this, the following conditions will be used:

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- Oxygen levels within the range of 19.5% to 23.5%
- Flammable gas, vapor or mist levels less than 5% of the LEL and
- Levels of any toxic contaminants that are potentially present must be less than 50% of their PEL.

Upon classifying the confined space the entry supervisor shall then:

1. Coordinate the employees and any other groups that may be conducting simultaneous entries. This includes SJFC subcontractors.
2. Ensure measures have been taken for safe entry including draining, depressurizing, ventilation, isolating, grounding, purging, etc.
3. Designate trained authorized entrants and attendants.
4. Specify procedures and equipment to be used.
5. Ensure proper trained and equipped rescue service is available.

**5.2 Hazard Re-Evaluation:**

A qualified person(s) **SHALL** determine the need for periodic identification and re-evaluation of the hazards based on possible changes in activities in the space, or physical or environmental conditions, or both, which could adversely affect these spaces. When the need is determined, a qualified person(s) shall conduct the identification and re-evaluation process.

**Anytime the entrance access point to a confined space is closed or blanked over for any period of time, a recertification of the space shall be conducted.**

**6.0 AIR SAMPLING**

Every confined space **SHALL** be instrument tested with a direct reading instrument to determine oxygen content, the presence of flammable or explosive gasses and potential toxic air contaminants prior to entry.

Based upon the hazard evaluation for each confined space, a test for toxic materials such as carbon monoxide, hydrogen sulfide, etc **SHALL** be performed using appropriate direct reading instruments or calorimetric tubes, when necessary.

For spaces such as boilers where temperature extremes may exist, temperatures within the space **SHALL** be determined to be at safe levels prior to any entry.

When an entrant must enter a space to perform atmospheric sampling in addition to the initial sampling, the entrant **SHALL** wear a full body harness and lifeline with an attendant positioned at the point of entry. Respiratory protection (SCBA or airline with escape cylinder) and protective clothing suitable for all known or anticipated hazards **SHALL** be worn during this type of survey when necessary.

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**6.1 Prohibited Entry**

No confined space entry **SHALL** be permitted when the space contains anything other than acceptable environmental condition until correction of the unsafe condition(s) have been made and verified.

**EXCEPTION:**

Properly trained and equipped authorized entrants or rescuers entering for the purpose of rescue or controlling a developing hazard which has no other reasonable means of control.

**7.0 GENERAL OPERATIONAL REQUIREMENTS**

1. The physical and psychological suitability of person to do confined space work **SHALL** be considered prior to issuing a confined space assignment.
2. All hinged or swinging access hatches, doors and covers **SHALL** be substantially blocked, tied or otherwise affixed in the open position until the confined space is secured.
3. Work area protection **SHALL** be used to protect personnel from traffic hazards. Vehicle placement, barricades, flags, cones, signs and lights **SHALL** be used where required by OSHA, NYSDOT and SJFC.
4. Guardrails, barricades or similar protection **SHALL** be provided around confined space access points to prevent persons from falling into openings or making unauthorized entries.
5. Solvents which are flammable **SHALL NOT** be used in confined spaces unless all appropriate safeguards are implemented.
6. Solvents with toxic vapors **SHALL NOT** be used unless appropriate safeguards are implemented.
7. Compressed gas cylinders **SHALL NOT** be used in confined spaces.
8. Hoses supplying hazardous gasses to areas within a confined space **SHALL** be equipped with "excess flow" check valve devices and **SHALL NOT** contain patches or repairs within/or the vicinity of the space.
9. Asbestos operations within a confined space **SHALL** also address all the requirements.
10. Open flame work **SHALL** be prohibited whenever a flammable atmosphere is present within a confined space.
11. Smoking, eating or drinking within all confined spaces **SHALL** be prohibited. Good personal hygiene practices should be followed by personnel after exiting a confined space.
12. Ventilation by mechanical device(s) **SHALL** be used to correct and/or prevent the accumulation of hazardous atmospheric conditions when hazardous conditions are known to exist or anticipated to exist.
13. The entire workplace in and around confined spaces **SHALL** be clean prior to or upon initial entry and maintained in a neat, orderly manner to prevent slips, trips, falls, cuts and similar accidents. The removal by cleaning, purging, pumping or ventilation of all sludge, liquid, or the residues **SHALL** be performed.

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**NOTE:** Tanks, vessels, sumps and similar spaces which have contained corrosive materials **SHALL** be tested with PH indicating materials to verify neutrality (PH-6 to 8) prior to entry.

**8.0 EMERGENCY PLANNING**

The competent person(s) having authority over each confined space work activity **SHALL** address emergency action and communication requirements with the authorized entrants and attendants before work is started. The areas to be covered include:

1. Potential hazards and control methods; including signs and symptoms of over exposure to air contaminants in the confined space.
2. Worker assignments as required:
  - Authorized entrants
  - Attendants
  - Rescue plan assignments
3. Methods of communication:
  - a. Entrants to attendants
  - b. Attendants to emergency assistance

**8.1 Rescue Plan**

The competent person(s) having authority over each confined space work activity **SHALL** address rescue requirements with the authorized entrants and attendants before work is started. The areas to be covered include:

1. Pre-determined methods
2. Provide necessary rescue equipment
3. "On-the-job" vs. "outside" rescue team
4. Provide necessary safety and first aid equipment

**9.0 BASIC SAFETY EQUIPMENT**

In addition to the safety equipment required to be utilized by this or related procedures, all personnel working in and around confined spaces **SHALL** wear hard hats, safety glasses, appropriate garments and footwear. Full body harness with lifeline. Each confined space **SHALL** defined by an authorized foreman/supervisor as to whether a lifeline can be used without impeding an employee's safety or operation of job assignment.

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**10.0 TRAINING**

Personnel responsible for supervising, planning, entering or participating in confined space entry and rescue **SHALL** be adequately trained in their functional duties prior to any confined space entry. Training **SHALL** include:

1. An explanation of the general hazards associated with confined spaces;
2. A discussion of specific confined space hazards associated with the facility, location or operation;
3. The reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces;
4. An explanation of the tag-out system and other procedural requirements for conducting a confined space entry;
5. How to respond to emergencies/and execute the EMS system.
6. Duties and responsibilities as a member of the confined space entry team;
7. A description of how to recognize probable air contaminant overexposure symptoms, such as the “rotten egg” odor of hydrogen sulfide, to themselves and co-workers, and method(s) for alerting attendants.
8. Training for Atmospheric Monitoring Personnel **SHALL** include training in the proper use of atmospheric monitoring instruments. This **SHALL** include field calibration, basic knowledge of work being performed, the anticipated hazardous contaminants, and any process which could significantly alter original conditions inside or outside the confined space.
9. Training for Attendants **SHALL** include Summoning rescue or other emergency services and the proper use of equipment used for communicating with entry and emergency/rescue personnel.

**11.0 SUB-CONTRACTORS**

Subcontractors hired by SJFC **SHALL** be informed of the work requirements mandated by this section and all potential or known hazards associated with the confined space(s) to be entered. The Sub-contractor(s) and their personnel shall also be advised of the applicable emergency plan(s) and the procedure(s) for summoning rescue/emergency assistance in an emergency.

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**Addendum A - Specific Entry Procedures for Sewers, Pump Stations, Manholes.**

**1.0 Entry Permit Required**

Confined Space Entry Permit. All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. Any employee required or permitted to pre-check or enter a permit-required confined space shall have successfully completed, as a minimum, the training as required by the following sections of these procedures. A written copy of operating and rescue procedures as required by these procedures shall be at the work site for the duration of the job. The Confined Space Entry Permit must be completed before approval can be given to enter a permit-required confined space. This permit verifies completion of items listed below. This permit shall be kept at the job site for the duration of the job. If circumstances cause an interruption in the work or a change in the alarm conditions for which entry was approved, a new Confined Space Entry Permit must be completed.

**Sewer, Pump Stations, Manholes Hazard Evaluation**

Types of Hazards	Sources of Hazards
Oxygen Deficiency.	Close space with rust or biologics. A concentration of oxygen in the atmosphere equal to or less than 19.5% by volume.
Presence of explosive/flammable gases.	Sewer gas, hydrogen sulfide, methane, Equal to or greater than 10% of the lower flammable limit (LFL).
Presence of toxic gases.	Equal to or more than 10 ppm hydrogen sulfide measured as an 8-hour time-weighted average. If the presence of other toxic contaminants is suspected, specific monitoring programs will be developed.
Engulfment.	Storm drains, in-takes, all laterals to sewers.

**2.0 How We Will Eliminate and Control Atmospheric and Engulfment Hazards**

**2.1 Pumps and Lines.**

All pumps and lines which may reasonably cause contaminants to flow into the space shall be disconnected, blinded and locked out, or effectively isolated by other means to prevent development of dangerous air contamination or engulfment. Not all laterals to sewers or storm drains require blocking. However, where experience or knowledge of industrial use indicates there is a reasonable potential for contamination of air or engulfment into an occupied sewer, then all affected laterals shall be blocked. If blocking and/or isolation requires entry into the space the provisions for entry into a permit-required confined space must be implemented. When closing valves, secure each valve in its closed position using chain and lock. Attach a tag to the valve and chain warning that a permit entry confined space entry is in progress.

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**2.2 Control of hazards. Electrical/Mechanical.**

Lock out main power at the isolation device to create a zero energy state. Affix tag to the lock to inform others that a permit entry confined space entry is in progress.

**2.3 Surveillance.**

The surrounding area shall be surveyed to avoid hazards such as drifting vapors from the tanks, piping, or sewers.

**2.4 Testing.**

Atmospheric testing is required for the evaluation of the hazards of the permit space and the verification that acceptable entry conditions for entry into that space exist. The atmosphere within the space will be tested to determine whether dangerous air contamination and/or oxygen deficiency exists. Detector tubes, alarm only gas monitors and explosion meters are examples of monitoring equipment that may be used to test permit space atmospheres.

2.4.1 Testing shall be performed by the lead worker who has successfully completed the gas detector training for the monitor he/she will use. The minimum parameters to be monitored are oxygen deficiency, LFL, and hydrogen sulfide concentration. A written record of the pre-entry test results shall be made and kept at the work site for the duration of the job. The supervisor will certify in writing, based upon the results of the pre-entry testing, that all hazards have been eliminated. Affected employees shall be able to review the testing results.

2.4.2 The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space.

2.4.3 The atmosphere of a permit space which may contain a hazardous atmosphere should be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) should be recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.

2.4.4 When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

2.4.5 Order of testing. A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere. Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors. If tests for toxic gases and vapors are necessary, they are performed last.

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**3.0 Entry Procedures.**

If there are no non-atmospheric hazards present and if the pre-entry tests show there is no dangerous air contamination and/or oxygen deficiency within the space and there is no reason to believe that any is likely to develop, entry into and work within may proceed.

3.1 Continuous testing of the atmosphere in the immediate vicinity of the workers within the space shall be accomplished. The workers will immediately leave the permit space when any of the gas monitor alarm set points are reached as defined. Workers will not return to the area until a supervisor who has completed the gas detector training has used a direct reading gas detector to evaluate the situation and has determined that it is safe to enter.

3.2 Space Ventilation. Mechanical ventilation systems, where applicable, shall be set at 100% outside air. Where possible, open additional manholes to increase air circulation. Use portable blowers to augment natural circulation if needed. After a suitable ventilating period, repeat the testing. Entry may not begin until testing has demonstrated that the hazardous atmosphere has been eliminated.

3.3 Continuous gas monitoring shall be performed during all confined space operations. If alarm conditions change adversely, entry personnel shall exit the confined space and a new confined space permit issued.

3.4 Evacuation. When alarm conditions change adversely, the entrant shall exit the confined space immediately. If the entrant feels uneasy or suspects an adverse change in the conditions in the confined space, he/she shall exit the space immediately.

3.4.1 Adverse conditions mean the low level parameters identified on the permit have been reached (19.5% O<sub>2</sub>, 10% LEL, PPM). All abnormal conditions regardless of levels shall be investigated immediately for resolution.

3.5 Rescue. When necessary, the attendant shall call the fire department as previously arranged.

**4.0 Emergency Procedure**

4.1 Continuous gas monitoring shall be performed during all confined space operations. If alarm conditions change adversely, entry personnel shall exit the confined space.

4.02 Rescue. Call the fire department services for rescue.

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**Addendum B – Confined Space Entry Permit****Hazard Identification**

Before the confined space can be entered the following atmospheric hazards must be identified and evaluated. Before an employee enters any confined space, the internal atmosphere shall be tested from outside the space, using direct-reading instruments equipped with remote sampling probes. The sequence of testing shall be as follows:

- \* Oxygen concentration;
- \* Flammable gas, vapor or mist; and
- \* Potential toxic contaminants over permissible exposure limits (or as specified by the entry supervisor)

These tests will be conducted to determine if the space contains or has the potential to contain one or more of the following:

6. Atmospheric oxygen concentration below 19.5 % or above 23.5 %,
7. A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL), also known as lower explosive limit (LEL) ,
8. An atmospheric concentration of any substance for which a permissible exposure limit (PEL) is published by OSHA and could result in employee exposure in excess of its permissible exposure limits, but only if it is capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects. For substances without an OSHA-designated PEL consult other sources of information such as the Material Safety Data Sheets (SDS's) for guidance in establishing acceptable environmental conditions,
9. An airborne combustible dust at a concentration that meets or exceeds its lower explosive limit or that obscures vision at a distance of five feet or less,
10. Any other atmospheric condition recognized as immediately dangerous to life or health (IDLH).
11. Material Stored. Contains a material that has the potential for engulfing an entrant.
12. Internal Configuration. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or a floor which slope downward and tapers to a smaller cross-section; or other recognizable hazards

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Confined Space Entry Permit Checklist

Date: \_\_\_\_\_ Facility Name: \_\_\_\_\_

Company Foreman: \_\_\_\_\_

Coordinator: \_\_\_\_\_

Confined Space To Be Entered: \_\_\_\_\_

**Pre-Entry**

Do Not Enter A Confined Space Without Completing This Checklist (enter NA if not applicable):

	Yes	No
a) Is entry necessary?		
b) Have potential contaminants been identified?		
c) What are the hazards?		

Describe: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

<b>Atmospheric Testing</b> (see Atmospheric Testing Procedures)	Yes	No
a) Does the atmosphere require testing for:		
Oxygen deficiency		
Explosive, (and fire)		
Toxicity		
Other (describe):		
b) Have instruments been calibrated?		
c) During work, will the atmosphere be monitored (complete attached monitoring sheet during entry):		
Periodically (at 2 hour intervals)?		
Continuously? (at least every 15 minutes)?		
Other: Explain		
d) If confined space is determined to be hazardous due to its atmosphere, can engineering controls (e.g., ventilation) remove the hazard?		

If yes, describe controls: \_\_\_\_\_  
 \_\_\_\_\_

Entry

Equipment	Yes	No
a) Are all tri-pod part in work in working order? Winch? Cable? Handle?		
b) Is fan in working order? (dents? Guards, cord, switch?)		
c) Supply hose intact and in working order?		
d) Inspect the ladder.		
e) Fall protection equipment (harnesses, lanyard) inspected?		

Entry	Yes	No
a) Has Entry Permit been completed and posted?		
b) Have ALL power sources been isolated, locked out, and tagged?		
c) Are personnel entering space trained to do so?		
d) Are personnel required to wear PPE trained to do so?		
e) Are attendants trained to do so?		
f) Are Safety harnesses or lifelines in place?		
g) If entry personnel are not in line-of-sight, has communications system been established?		

Rescue Procedures

Describe Rescue Procedures:

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Approval

I certify that the information provided in this checklist is accurate:

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Entry Supervisor Date

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Confined Space Entry Monitoring Record

Job Site: \_\_\_\_\_  
Date: \_\_\_\_\_  
Supervisor: \_\_\_\_\_  
Person Recording Data: \_\_\_\_\_

Time	Parameter / Concentration Measured*				
	Initials	Oxygen	% LEL	Toxicity	
Pre-Entry					

\* - fill in blank columns with additional parameters to be measured

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Confined Space Entry Permit

This Permit is Valid for a Maximum of 8 Hours.

All Permit Copies Shall Remain At the Site Until the Job is COMPLETED.

Facility Name:	
Facility Address:	
Company Foreman:	
EH&S Coordinator:	
Phone Number:	
Date and Time Permit Issued:	
Date and Time Permit Expires:	
Confined Space To Be Entered:	
Work To Be Performed:	

Emergency Procedures & Numbers

Fire Department: 911      Ambulance: 911      Police: 911

In Case of an Emergency:


Expected Hazards:


Name of Entrant(s): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Attendant(s): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Supervisor: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Acceptable Ranges:**

Percent Oxygen 19.5% To 23.5%  
Lower Explosive Limit Under 10%

	<u>STEL</u>	<u>PEL</u>
Carbon Monoxide	-	35 ppm
Aromatic Hydrocarbons	5 ppm	1 ppm
Hydrogen Cyanide	4 ppm	-
Hydrogen Sulfide	15 ppm	10 ppm
Sulfur Dioxide	5 ppm	2 ppm
Ammonia	35 ppm	-

ppm - parts per million

STEL - Short-term Exposure Limit. Employee can work in the area up to 15 minutes.

PEL - Permissible Exposure Limit (8-hour time weighted average). Employee can work in area 8 hrs (longer with appropriate respiratory protection).

**PPE / Equipment to be Used:**


**Communication Procedures:**


We have reviewed and approved of the work authorized by this permit and the information contained here-in and have determined that the work conditions are acceptable. Written safety instructions and procedures have been received and are understood. This Permit is not valid unless all spaces on this and the Permit Checklist have been completed.

Permit Prepared by: \_\_\_\_\_

Approved By: \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_

APPENDIX A

REVISION HISTORY

REVISION NO	ACTIONS	DATE	BY
000	Initial issue as a controlled document	1/1/10	mwk
001	Add Addendum A – Specific Entry Procedures for Sewers, Pump Pits, Manholes.	11/8/12	mwk
002	Add Addendum B – Confined Space Permit	11/8/12	mwk
003	Add Addendum C, adjustment to CSPermit	1/7/13	mwk
004	Review, removed SBA. Rescue from within confined space by fire dept (Section 4.0)	10/15	AC

# **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

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- A Hazardous Energy Control Program Training Outline**
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- C Specific Equipment Procedure Templates**
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# **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

## **1.0 PURPOSE**

The purpose of this program is to prevent employee injury caused by the unexpected release of energy or start-up of equipment during service and maintenance activities.

## **2.0 SCOPE**

The program establishes requirements for hazardous energy control. It is to be used to ensure that machines and equipment are isolated from all potentially hazardous energy sources whenever servicing or maintenance activities are conducted on any equipment in this facility. Energy isolation lockout/tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

This program applies to all employees who work in, or may enter an area where servicing and maintenance of equipment takes place. Whenever a guard or other safety device must be removed to perform service or repair to energized equipment, thereby exposing an employee to injury in the event of unexpected start up. Specifically:

2.1 Authorized Employee: An employee whose job requires them to perform lockout while servicing or repairing equipment at this facility, is trained in lockout procedures and is authorized by the maintenance manager to perform specific lockout procedures.

2.2 Affected Employee: An employee whose job requires them to operate equipment that may be locked out for service or repair, or an employee who works in an area where service and repair takes place. An affected employee may not perform lockout procedures.

2.3 Other Employee: An employee whose work is in, or who may enter into, an area of the facility where lockout is, or could take place at some point in time.

2.4 This program does not apply to:

2.4.1 Work on plug-in equipment, where pulling the plug eliminates all sources of energy, and the employee doing the repair has total control of the plug.

2.4.2 Minor adjustments to equipment during production as long as they are routine, integral to the operation and other precautions are taken to assure the operator will not be injured. Removal of a guard and placement of any part of the operator's body into the point of the machine where work is performed on the product is NOT considered "minor", and lockout must be used.

## **3.0 RESPONSIBILITY**

Alphonse Camp is designated as the Program Coordinator. The Program Coordinator is responsible for developing and revising lockout procedures, and specifying the equipment used for energy control.

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## **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

3.1 Each supervisor is responsible for the proper application of all required energy control procedures and for the employees under his/her supervision. He/she will be responsible for implementing, managing, training and assisting employees with locating, locking, tagging and required procedures or to correct deficiencies observed during annual audit and program review.

3.2 Each employee is responsible for learning and following the procedures in this program.

### **4.0 GENERAL**

4.1 Procedures will be developed for control of hazardous energy before performing service and/or maintenance on all machines when an employee may be exposed to unexpected start up or release of energy. Lockout/tagout procedures include any equipment or systems involved with, but not limited to electricity, steam, natural gas, hydraulics, compressed air, sewers, any pressurized system, etc.

4.2 The lockout/tagout procedure must be used whenever an employee who must service or maintain a piece of equipment or system and may be exposed to unexpected start up or release of energy.

4.3 Machine guarding devices may be used in lieu of lockout/tagout procedures when they provide effective control of unexpected start up or release of energy.

### **5.0 BASIC LOCKOUT PRINCIPLES**

The basic principles for hazardous energy control (lockout) are outlined in OSHA Standard 29 CFR 1910.147, and this program has been developed in accordance with that standard.

5.1 All equipment must be locked out to protect against accidental or inadvertent operation, when operation could cause injury to personnel. Locks may be applied and removed only by the individual authorized employee. No one is to attempt to operate equipment that is locked out or to tamper with any lockout device.

5.2 Each authorized employee will place his/her personal lock(s) on every energy isolating device on a piece of equipment and insure that it remains in place at all times while they are working on that equipment

5.3 Any employee who violates these procedures will be subject to immediate discharge, regardless of whether or not physical harm or equipment damage results.

### **6.0 EQUIPMENT**

Whenever it is possible to lock out an energy source, locks with tags will be used.

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6.1 The specified lockout devices (padlocks) shall be used only for energy control. The padlocks will be identified by a standardized color code, and shall be durable enough to withstand any facility environment they may be expected to encounter. Padlocks will be keyed differently, with no master keys or duplicate keys that are not in the possession of the employee. If an authorized employee needs additional locks for work on equipment with multiple energy sources, a sufficient number will be provided. For convenience, multiple locks issued to an individual may be keyed alike as long as none of them are keyed the same as those used by any other employees.

6.1.1 SJFC has lock out tag out kits. Each authorized employee performing work requiring locks and tags will be issued their own lock and tag while they perform the work. If multiple locks are issued, they may be keyed alike for ease of use by each individual. Each individual maintains control of the keys for their locks. They can only open their personal locks.

6.1.2 Lockout locks will not be used for anything other than equipment lockout.

6.2 The information on the tags provides warning of the danger in removal of the lock. Tags also have space available for the employee to sign their name.

6.2.1 Signed tags are used in conjunction with locks to must identify the owner of the lock.

6.2.2 Nylon cable ties are used to attach tags on or near the energy cut off device.

6.3 Multiple lockout devices will be used when more than one employee is working on a piece of equipment, to insure that each individual has his/her personal lock(s) on every energy control device. These devices may be in the form of hasps that will accept multiple locks or other devices made for this purpose.

### **7.0 TRAINING**

7.1 SJFC will provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees.

7.2 SJFC will certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

7.3 Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

7.4 Each affected employee shall be instructed in the purpose and use of the energy control procedure.

7.5 All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about

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## **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

7.6 Employee retraining. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

7.6.1 Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

7.6.2 The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

### **8.0 PERIODIC INSPECTIONS**

Periodic inspections will be conducted of the energy control procedures at least annually to ensure that the procedure and the requirements of this program are being followed.

8.1 Any authorized employee can participate in the inspection process. The inspection must include the following:

8.1.1 Ensure that only authorized employees are performing the work and they fully understand and use the LOTO procedures needed for servicing or repairing the machinery and equipment.

8.1.2 Ensure the locks and tags conform to the specifications of this program.

8.1.3 Ensure that all responsibilities of those involved are being followed.

8.1.4 Review deficiencies uncovered during the inspection with the employees performing the work.

8.2 The person performing these reviews shall certify in writing that the review has been performed. The following information shall be documented:

8.2.1 Date of Inspection and which authorized person conducted the inspection.

8.2.2 All Authorized Persons involved in the inspection.

8.2.3 Identification of the equipment being serviced.

8.2.4 Comments regarding corrective action needed.

8.3 Deficiencies uncovered by these reviews must be corrected and discussed in training sessions facilitated by the inspector, or an alternate.

### **9.0 COMPANY LOCKOUT PROCEDURE**

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## **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

Before work is begun on any machinery or equipment, the correct means of energy control will be reviewed by the authorized employee(s). If the equipment does not have a documented procedure because it meets the criteria in the OSHA standard (see 1910.147 (c)(4)(i)) that allows lockout without a written procedure, proper identification of the energy source is the initial preparation. In the event that the lockout does require use of a written procedure, it must be reviewed by each authorized employee. Written lockout procedures will be documented with the form in Appendix C. The necessary locks and other devices must be available before the procedure is begun. The SJFC facility has equipment specific LOTO procedures. Written procedures will be kept in the Operation Manager's office. Each of these procedures follows these guidelines.

The following sequence of steps (9.1 through 9.9) is general in nature. Specific lockout procedures (where applicable) contain additional details.

### **9.1 Preparation for shutdown**

Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy. The equipment specific procedure provides this information.

### **9.2 Notifying Affected Employees**

The Authorized Employee shall notify all affected employees working on the machine or nearby that the process of locking out the equipment/machine is beginning. They should explain the reason why lockout is going to be utilized.

### **9.3 Machine or equipment shutdown**

The machine or equipment shall be turned off or shut down using the procedures established for the machine or the equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of equipment stoppage.

### **9.4 Machine or equipment isolation**

All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s). The equipment specific procedure provides this information.

### **9.5 Apply lockout or tagout device**

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## **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

Lockout or tagout devices shall be affixed to each energy-isolating device by the authorized employee. Lockout devices shall be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position. Tagout devices shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited. The equipment specific procedure provides this information.

9.5.1 Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.

9.5.2 Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

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### **9.6 Stored energy**

Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe. The equipment specific procedure provides the information for performing this step.

9.6.1 If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

### **9.7 Verification of isolation**

Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished, even though isolation is performed prior to shut down and is checked at that point. The equipment specific procedure provides the information for verifying that isolation is effective.

### **9.8 Release from lockout or tagout**

Before lockout or tagout devices are removed and energy is restored to the machine or equipment, the equipment specific procedures shall be followed and actions taken by the authorized employee(s) to ensure that the work area has been inspected and that non-essential items have been removed and that the machine or equipment components are operationally intact. The authorized employee(s) shall check the area to ensure that:

9.8.1 No employees are exposed.

9.8.2 Remove all tools and repair equipment.

9.8.3 Replace all guards and reactivate safety interlocks.

9.8.4 Verify that the operating controls are in the "off" or neutral position.

9.8.5 Remove locks and open the energy isolation devices.

### **9.9 After lockout or tagout devices have been removed**

Before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed and the work is complete.

### **10.0 REMOVAL OF LOCKOUT OR TAGOUT DEVICES:**

Each lockout or tagout device shall be removed from each energy-isolating point by the authorized employee who applied the device.

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10.1 When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the supervisor following the procedures for such removal.

10.2 The supervisor shall demonstrate that the removal procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. Before a lock can be removed, the following must be accomplished:

10.2.1 Verification by the supervisor that the authorized employee who applied the device is not at the facility;

10.2.2 Making all the reasonable efforts to contact the authorized employee to inform him/her that his/her lockout or tagout device needs to be removed; and

10.2.3 If unable to reach authorized employee, the area supervisor must obtain approval from the Program Coordinator.

10.2.4 Ensuring that the authorized employee knows that his lockout device has been removed before the employee resumes work at the facility.

### **11.0 GROUP LOCKOUT PROCEDURES**

11.1 If more than one employee is working on the same equipment, each authorized person must place his/her lock on each energy isolation device, by using multi-lock devices. For major projects involving many employees and several points of lockout, the group method of lockout may be used by performing the following:

11.1.1 An authorized employee must disable the equipment according to the written procedure.

11.1.2 Place the key(s) to the lock(s) used in a "lock box".

11.1.3 All authorized employees apply their own safety lock to the lock box.

### **12.0 SHIFT CHANGE PROCEDURES**

If an authorized employee must leave locked out equipment due to a re-assignment or shift change before work is completed, he/she will remove the personal lock(s) before departing.

12.1 If the job is not completed when the authorized employee is to go off shift, the disabled equipment must remain secured. However, the individual Lock must be removed by its owner. The employee going off shift must wait for the arrival of the next shift. The employee going off shift will remove his lock(s) and the employee coming on duty will place his lock(s) on the isolation devices.

12.2 Under no circumstances is an employee to fail to apply his/her personal lock(s) equipment, even if other employees already have started work and have their locks in place.

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**13.0 OUTSIDE CONTRACTORS**

In order to protect in-house employees, the contractor's work area will be isolated and access will be restricted whenever possible. If this cannot be accomplished, the Program Coordinator must assure that the Contractor complies with proper energy isolation procedures by observing work in progress. Outside contractors must comply with their own Lockout Program when they are called in to perform service or repair on SJFC equipment however, they may not know how to properly secure SJFC equipment. Therefore, the following steps will be taken:

13.1 The person coordinating the project will notify the maintenance supervisor as to when the project is to take place.

13.2 The maintenance supervisor will notify the supervisor as to when and where the lockout will be in effect.

13.3 The supervisor must tell the affected employees that the contractor's Lockout hardware may appear different from that used in the facility, but that they must treat this hardware the same as if the project were being performed by an in-house employee.

13.4 The maintenance supervisor must provide the contractor with the SJFC procedure for locking out the equipment.

13.5 When an authorized SJFC employee will be working on the same project, the equipment will be secured using multiple lock adapters or lock boxes. Both the locks of the contractor employees and the SJFC employees will be applied.

13.6 Contractors failing to adhere to the provisions of this program or the OSHA Hazardous Energy Control standard will be required to stop work until their program is brought into compliance to the satisfaction of the Program Coordinator.

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# **Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

## **APPENDIX A**

### **HAZARDOUS ENERGY CONTROL PROGRAM TRAINING OUTLINE**

All of the following information will be presented to the authorized employees. Only topics marked with (\*) will be reviewed with affected employees.

**A. Overview**

- \*1. Review of OSHA standard 1910.147.
- \*2. Review of lockout program.

**B. Hazardous Energy**

- 1. Types and injury potential.
- 2. Applications.
- 3. Control methods and devices.

**C. Basic Lockout Principles**

- \*1. Equipment to be locked out.
- \*2. Activities requiring use of lockout.
- \*3. Prohibition of attempt to operate locked equipment.
- \*4. Disciplinary action for violation of any lockout procedures.

**D. Lockout Devices**

- \*1. Padlocks.
- \*2. Multi-Lock Hasps.
- \*3. Other devices (pipe blanks, valve locks, lock boxes, etc.).
- 4. Demonstration and practice application of devices.

**E. Lockout Procedures**

- 1. Review of steps for undocumented lockout.
- 2. Review of specific written procedures.
- 3. Special procedures
  - a. Shift changes
  - b. Multi-crew jobs
  - c. Outside contractors

**F. Monitoring**

- 1. Formal annual inspection.

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**APPENDIX B**

<b>HAZARDOUS ENERGY CONTROL LOCKOUT PROGRAM INSPECTION</b>	
EQUIPMENT IDENTIFICATION: _____	
INSPECTION DATE: _____	INSPECTOR: _____
<b>AUTHORIZED EMPLOYEES PERFORMING LOCKOUT</b>	
<b>NAMES</b>	<b>JOB TITLES</b>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
<b>DESCRIPTION OF WORK</b>	
_____ _____ _____ _____	
<b>EVALUATION OF PROPER APPLICATION OF LOCKOUT PROCEDURE</b>	
_____ _____ _____ _____	
<b>FOLLOW-UP/CORRECTIVE ACTION</b>	
_____ _____ _____	
COMPLETED BY: _____	DATE: _____
<b>COMMENTS</b>	
_____ _____ _____	
CERTIFIED BY: _____	DATE: _____

# Control of Hazardous Energy (Lockout/Tagout) Safety Program 004

## Appendix C LOCKOUT / TAGOUT PROCEDURE

AREA / LINE: \_\_\_\_\_ EQUIPMENT: \_\_\_\_\_

ENERGY TYPE:	MAGNITUDE	LOCATION OF ENERGY DISCONNECT:	START / STOP LOCATION:	METHOD OF ISOLATION LOCKOUT DEVICE USED:
<input type="checkbox"/> ELECTRICAL				
<input type="checkbox"/> MECHANICAL (including gravity)				
<input type="checkbox"/> THERMAL				
<input type="checkbox"/> STEAM				
<input type="checkbox"/> AMMONIA				
<input type="checkbox"/> HYDRAULIC				
<input type="checkbox"/> PNEUMATIC				
<input type="checkbox"/> WATER				
<input type="checkbox"/> CHEMICAL				

COMMENTS:

---

### SHUTDOWN PROCEDURES:

1. Notify affected employees in the area that a Lockout/Tagout of a piece of equipment is taking place.
2. Shutdown equipment using normal shutdown procedure.
3. Isolate all energy sources.
4. Apply Lockout device to the appropriate equipment local energy isolating device along with dated safety tag including personal identification.
5. Safely release any stored energy, if applicable.
6. Prior to working on equipment, ensure that equipment will not start up. With all Lockout/Tagout devices in place, attempt to jog equipment.

---

### START-UP PROCEDURES:

1. Check to ensure that all tools and servicing equipment have been removed from the work area.
2. Replace all machine guards (if applicable)
3. Notify all affected employees that the equipment will be energized and started.
4. Have all individuals working on the equipment remove their Lockout / Tagout devices.
5. Enable or turn on the energy isolating devices.
6. Again, announce to all affected employees that equipment will be restarted.
7. Start the equipment.

WRITTEN BY:

APPROVED BY:

SAFETY MANAGER Signature:

REVISION DATE:

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**Control of Hazardous Energy (Lockout/Tagout) Safety Program 004**

**Appendix D Revision History**

REVISION NO.	ACTIONS	DATE	BY
000	Initial issue as a controlled document	1/12	mwk
001	Reviewed, updated	10/15	AC
002			

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- 2.0 SCOPE**
- 3.0 RESPONSIBILITIES**
- 4.0 OPERATIONAL REQUIREMENTS**
- 5.0 HEARING PROTECTION**
- 6.0 TRAINING**
- 7.0 RECORD KEEPING**

**APPENDIX A: Permissible Noise Levels a Scale of the Hearing Conservation**

**APPENDIX B: Noises and Levels**

**APPENDIX C: Industrial Noise Survey**

**APPENDIX D: REVISION HISTORY**

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**1.0 PURPOSE**

To serve as SJFC's procedures and methods to protect employees exposed to hazardous noises based on a Time Weighted Average (TWA) of 85 decibels or more.

**2.0 SCOPE**

This section establishes both policy and minimum safety requirements necessary to ensure the safety of all personnel exposed to hazardous noises throughout SJFC. This section is written to comply with the OSHA Rule; 29 CFR 1910.95.

2.1 If ever an employee of SJFC is exposed to noise exposures equal to or exceeding an eight (8) hour time-weighted average (TWA) sound level of eighty-five (85) decibels measured on the A scale (slow response) or equivalently, a continuing, effective hearing program must be implemented.

2.2 For purposes of this Hearing Protection Program, employee noise exposures shall be computed in accordance with Permissible Noise Levels A Scale of the Hearing Conservation Amendments found on the last page of this section, and without regard to any attenuation provided by the use of personal protective equipment.

2.3 Whenever a noise level is above or is potentially above 90 decibels, employees will wear appropriate hearing protection regardless of permissible exposure levels.

**3.0 RESPONSIBILITIES**

SJFC's safety officer will make an assessment of the hazards in their workplace and shall supply the proper hearing protective equipment as necessary. Assessment must be documented by written certification as to what workplace was assessed, who assessed the workplace, and the date of the assessment. See Section 12.0 for specific details.

**4.0 OPERATIONAL REQUIREMENTS**

4.1 When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the supervision responsible for the affected employee(s) will implement the following:

4.2 Typically, the employees of SJFC are involved in circumstances such high worker mobility, significant variations in sound level, and a significant component of impulse noise which will make area monitoring generally inappropriate. Therefore, the supervisor shall use personal sampling unless the supervisor can show that area sampling produces equivalent results.

4.3 All continuous, intermittent and impulsive sound levels from 80 decibels to 130 decibels shall be integrated into the noise measurements. Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.

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4.4 Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

4.4.1 Additional employees may be exposed at or above the level; or

4.4.2 The attenuation provided by hearing protection being used by employees may be rendered inadequate to meet the requirements of hearing protector attenuation found later in this program.

4.5 Supervision shall notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.

4.6 Employees or their representatives will be provided with an opportunity to observe any noise measurements.

4.7 Multiple Noise Level Exposure

4.7.1 When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. Using the following equation if the sum of the fractions exceeds unity, then, the mixed exposure should be considered to exceed the limit value.

$$C(1)/T(1) + C(2)/T(2) + \dots + C(n)/T(n)$$

Cn - indicates the total time of exposure at a specified noise level

Tn - indicates the total time of exposure permitted at that level

4.7.2 Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

4.8 Controls

When employees of SJFC are subject to sound exceeding the permissible levels, administrative or engineering controls will be used when possible. If these controls do not relieve the noise to permissible levels, personal protective equipment will be supplied and utilized to reduce the noise exposure.

**5.0 HEARING PROTECTION**

5.1 All employees exposed to noise levels above the permissible levels specified in the A scale will be provided and are required to wear appropriate hearing protection. Hearing protection shall be provided at no cost and replaced as necessary.

5.2 The safety officer will ensure that all employees exposed to the unacceptable limits will wear the hearing protection. Ear protective devices inserted in the ear shall be fitted or determined individually by supervision. Supervision shall ensure that hearing protection is worn:

5.2.1 By an employee who exceeds the exposure levels of the A scale and is required to wear personal protective equipment; and

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5.2.2 By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who has experienced a known standard threshold shift.

5.3 Employees shall be given the opportunity to select their hearing protection from a variety of hearing protectors provided by SJFC. Depending upon noise exposure, proper hearing protection shall be selected. The hearing protection must provide hearing dampening ability to reduce the noise level exposure to the accepted A scale permissible noise levels or TWA.

5.4 SJFC will train the employees in the use, care, and fitting of the protection per manufacturer's recommendations.

5.5 SJFC shall ensure proper initial fitting and supervise the correct use of all hearing protectors.

5.6 The safety officer will evaluate the hearing protection attenuation for the specific noise environments in which the protection will be used. The hearing protection must extend the employee exposure at least to an eight (8) hour time-weighted average of 90 decibels.

5.7 The adequacy of hearing attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that protection provided may no longer provide adequate attenuation. More effective hearing protectors shall then be provided.

**6.0 TRAINING**

6.1 Training will be completed by supervision to the employees exposed to noise at or above an 8-hour time-weighted average of 85 decibels. The training and/or retraining of employees in proper use of hearing protection will be completed after a hazards assessment has been completed.

6.2 The employee must know when hearing protection is needed, what type of hearing protection is required, the correct manner of wearing the hearing protection, the effects of noise on hearing, proper care and maintenance of the hearing protection, the limitations of the hearing protection, and when appropriate the purpose of audiometric testing and explanation of the test procedures.

6.3 Training will be held annually, for each employee included in the hearing program and as needed to be consistent with the significant changes in protection and work processes.

6.4 Audiometric testing will be held annually, for each employee included in the hearing program.

**7.0 RECORD KEEPING**

7.1 The Personnel office will maintain the following records:

7.1.1 Employee exposure measurements if applicable.

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7.1.2 Employee's annual audio metric testing and training records. These shall be retained for three (3) years.

7.1.3 The most recent noise assessment if applicable. These shall be retained for three (3) years.

7.2 Records required by this section shall be provided upon request to employees, former employees and individual employee designees.

7.3 Copies of this program and standard are available to affected employees or their representatives and also a copy is filed at the main office.

**APPENDIX A:**

**Permissible Noise Levels A Scale of the Hearing Conservation**

**Amendment Duration per day Hours Response**

<b>8</b>	<b>90db</b>
<b>6</b>	<b>92db</b>
<b>4</b>	<b>95db</b>
<b>3</b>	<b>97db</b>
<b>2</b>	<b>100db</b>
<b>1-1/2</b>	<b>102db</b>
<b>1</b>	<b>105db</b>
<b>1/2</b>	<b>110db</b>
<b>1/4 or less</b>	<b>115db</b>

**APPENDIX B: Noises and Levels**

The following chart can be used as reference concerning potential sound pressure levels (decibels / dB). Keep in mind that these levels are estimates and ranges of potential sound pressure levels. Construction and conditions of the equipment; environments; workplace configuration; proximity to employees; etc., all have a diverse effect on the actual noise exposure.

Whisper - - - - -	-10 dB
Normal Conversation - - - - -	-60 dB
Welding Equipment - - - - -	-65 - 105 dB
Freeway Traffic - - - - -	-70 dB
Manual Machine - - - - -	- 80 dB
Factory - - - - -	-80 - 90 dB
Graders - - - - -	- 85 - 98 dB
Sander - - - - -	-85 dB (hearing loss begins)
Diesel Air Compressor - - - - -	-87 - 89 dB

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Heavy Truck - - - - -90 - 100 dB  
Power Shovel Cab - - - - - 90 - 115 dB  
Pneumatic Drill, Power Mower, Jackhammer - 100 dB  
Car Horn - - - - -100 - 120 dB  
Riveting Tool Used On Metal Plates - - - - - 105 - 125 dB  
Power Saw - - - - - 110 dB  
Jet Plane (1000 feet away) - - - - -110 - 120 dB (discomfort)  
Boiler Factory - - - - -130 dB (Pain begins at 125 dB)  
Highest Sound Level That Can Occur - - - - -190 dB

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**APPENDIX D**

REVISION HISTORY

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<b>2.0</b>	<b>PROCEDURE</b>
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**Appendices**

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- B**     **Revision History**

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## 1.0 PURPOSE

SJFC's compressed gases program provides guidelines concerning the safe handling and use of portable compressed gas cylinders. Compressed gases are unique in that they represent both a physical and potential chemical hazard (depending on the particular gas). The gases contained in these cylinders vary in chemical properties, ranging from inert and harmless to toxic and explosive. The high pressures constitute a serious hazard in the event that the cylinders sustain physical damage and/or are exposed to high temperatures. This procedure does not apply to large stationary compressed gas or cryogenic fluid cylinders.

## 2.0 PROCEDURE

### Responsibility

2.1 Compressed gas cylinders must be handled only by experienced and properly instructed personnel. This includes Hazard Communication information on the chemical nature of the materials and the appropriate response necessary in the event of fire, leak or spill. Contact manager or foreman for training.

2.2 The user responsible for the cylinder and for its installation should check the identity of the gas before use. If the cylinder content is not identified, if hydrostatic test date is past due, or if the cylinder is in any way damaged, the cylinder should be returned to the supplier.

2.3 The user shall not modify, tamper with, paint, deface, obstruct, remove or repair any part of the cylinder, including the pressure relief device and the container valve or the valve protection device.

2.4 The user is responsible for the proper disposal of the cylinder when it is empty or no longer needed (see Section VII for procedures).

2.5 The user is responsible to maintain an inventory of all gas used and stored in their area. This inventory must be provided to the department manager annually.

## 3.0 IDENTIFICATION

3.1 All compressed gases received, used or stored must be labeled according to the United States Department of Transportation (DOT) and the Occupational Safety and Health Agency (OSHA) regulations. Each cylinder must be marked by label or tag with the name of its contents. It is the manufacturer's and shipper's responsibility to label the cylinders. Do not accept cylinders without the appropriate labels. The primary identifier of cylinder contents is the label. Color should not be used to identify contents.

3.2 Safety Data Sheets (SDS) must be obtained and maintained for all compressed gases.

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3.3 Empty cylinders must be marked EMPTY or MT and stored apart from full cylinders while waiting to be removed.

3.4 Rooms or cabinets containing compressed gases must be conspicuously labeled COMPRESSED GAS. Container Storage Areas must be prominently posted with the hazard class and the name of the gases stored.

3.5 Piping systems require additional labeling and markings.

#### **4.0 GENERAL HANDLING PROCEDURES**

4.1 Cylinders must be transported, stored and used upright (with the valve up), and must be securely fastened to prevent them from falling or being knocked over. Suitable racks, straps, chains or stands are required to support cylinders.

4.2 Cylinder valves are to be protected with the standard cap when not in use (empty or full). Regulators are to be protected with covers where there is likelihood of damage.

4.3 Never force a cap or regulator. The cap should be only be hand tight.

4.4 Cylinders should not be exposed to excessive dampness, or to corrosive chemicals or fumes.

4.5 Cylinders are not to be exposed to temperature extremes nor stored in the vicinity of combustibles.

4.6 Gases are not to be transferred from one vessel to another (except dry ice and cryogenic material). Do not try to refill compressed gas cylinders.

4.7 Before using a cylinder, slowly "crack" the valve to clear dust or dirt, being sure the opening is not pointed toward anyone. Additional precautions must be taken when toxic or flammable gases are involved (see Section 5.) Do not stand in front of the regulator gauge glass when opening the valve.

4.8 Never use a cylinder without a regulator. Always use the correct pressure regulator.

4.9 After attaching the regulator, and before the cylinder is opened, check the adjusting screw of the regulator to see that it is released. Never permit the gas to enter the regulator suddenly.

4.10 Never try to stop a leak between a cylinder and regulator by tightening the union nut unless the valve has been closed first.

4.11 Never strike an electric arc on a cylinder.

4.12 Never use a leaking, corroded or damaged cylinder. Remove the cylinder from service and contact the supplier for return.

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**5.0 SPECIFIC HANDLING PROCEDURES**

**5.1 Flammable Gases**

5.1.1 Not more than 100 cubic feet of flammable gas can be used and stored (combined quantity) in a fire control area. In a laboratory 500 square feet or less, not more than 6 cubic feet, and larger laboratories, not more than 0.012 cubic feet per square feet of lab work area can be used and stored. In addition, lecture bottle cylinders must be limited to 25 (10 in instructional laboratories).

5.1.2 Flammable gases must be stored in well-ventilated areas away from flammable liquids, combustible materials, oxidizers, open flames, sparks and other sources of heat or ignition. A distance of 20 feet or a noncombustible barrier at least 18 inches above the tallest container, but not less than 5 feet and laterally not less than 18 inches beyond the sides of the containers and having a fire rating of at least ½ hour is the minimum separation requirement.

5.1.3 Portable fire extinguishers (carbon dioxide or dry chemical type) must be available for fire emergencies where flammable gas is stored.

5.1.4 Spark-proof tools should be used when working with flammable gas cylinders.

5.1.5 "Flow" experiments with flammable gases are not to be left unattended; an explosimeter or combustible gas alarm must be used.

5.1.6 In the event of an emergency involving a flammable gas, such as a gas leak, fire or explosion, personnel must immediately evacuate the area. Do not attempt to extinguish burning gas if the flow of product cannot be shut off immediately and without risk.

5.1.7 All lines and equipment associated with flammable gas systems must be grounded and bonded.

5.1.8 Acetylene should not be utilized in lines or hoses at a pressure exceeding 15 psi.

5.1.9 Contact your manager for additional information or concerns about flammable gas storage.

**5.2 Asphyxiant Gases**

5.2.1 Do not store asphyxiant gases in areas without ventilation. This includes environmental chambers (e.g. cold boxes) that do not have a fresh air supply or exhaust system.

5.2.2 Any gas that has the potential to displace oxygen in sufficient quantities can cause asphyxiation. Only persons trained, qualified and using a self-contained breathing apparatus (SCBA) with adequate back-up should respond to an inert gas leak or enter an area where an asphyxiant gas could be present. Shut off the source of the gas leak if there is no risk to personnel and ventilate the area. If a person has

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symptoms of asphyxiation, move the victim to fresh air and obtain proper medical attention.

**5.3 Oxidizer Gas**

5.3.1 Not more than 1500 cubic feet of oxidizing gas can be used and stored (combined quantity) in a fire control area. In a laboratory 500 square feet or less, not more than 6 cubic feet, and larger laboratories, not more than 0.012 cubic feet per square feet of lab work area can be used and stored. In addition, lecture bottle cylinders must be limited to 25 (10 in instructional laboratories).

5.3.2 All equipment used for oxidizing gases must be cleaned with oxygen-compatible materials free from oils, greases, and other contaminants (hydrocarbons and neoprene are not oxygen-compatible; PTFE Teflon is compatible. The equipment will state that it is oxygen compatible). Do not handle cylinders with oily hands or gloves.

5.3.3 Oxidizers shall be stored separately from flammable gas containers or combustible materials. A distance of 20 feet or a noncombustible barrier at least 5 feet high having a fire rating of at least ½ hour is the minimum separation requirement.

**5.4 Corrosive Gas**

5.4.1 Not more than 810 cubic feet of corrosive gas can be used and stored (combined quantity) in a fire control area.

5.4.2 Keep exposure to gas as low as possible. Use in fume hood or other vented enclosure when possible. Avoid contact with skin and eyes.

5.4.3 Wear safety goggles when handling compressed gases which are corrosive (see manager or foreman and *Personal Protective Equipment Policy* for additional information).

5.4.4 An emergency shower and eyewash must be installed within 50 feet where corrosive materials, including corrosive gases, are used (see manager or foreman for additional information).

5.4.5 An emergency response procedure must be in place and everyone working in the area must be trained on the procedures.

5.4.6 Safety plugs in the valves of chlorine cylinders fuse at 157 degrees F. Care must be exercised to see that they are not exposed to steam, hot water, etc. which could produce this temperature. Chlorine leaks may be located using a cloth wet with aqua-ammonia which will produce white fumes (ammonia chloride) in the presence of chlorine. NOTE: This procedure may only be performed with appropriate respiratory protection. In order for any individual to wear a respirator, he/she must have written physician's approval, attend a respiratory protection training session, and pass a respirator fit test.

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**5.5 Toxic and Highly Toxic Gas**

5.5.1 Not more than 1,620 cubic feet of toxic gas can be in storage and 810 cubic feet in use in a fire control area. Not more than 40 cubic feet of highly toxic gas can be in storage and 20 cubic feet in use in a fire control area. In a laboratory 500 square feet or less, not more than 0.3 cubic feet, and larger laboratories, not more than 0.0006 cubic feet per square feet of lab work area can be used and stored. In addition, lecture bottle cylinders must be limited to 25 (10 in instructional laboratories).

5.5.2 Lecture bottle-sized cylinders for all gases that have a health hazard rating of 3 or 4 or a health hazard rating of 2 without physiological warning properties, must be kept in a continuously mechanically ventilated hood or other continuously mechanically ventilated enclosure. Larger cylinders of toxic or highly toxic gas must be stored in gas cabinets, exhausted enclosures or gas rooms.

5.5.3 Toxic and highly toxic gases shall not be stored or used outside of academic or research laboratories.

5.5.4 Keep exposure to gas as low as possible. Use in fume hood or other vented enclosure when possible. Avoid contact with skin and eyes.

5.5.5 Wear safety goggles when handling compressed gases which are toxic or highly toxic (see manager or foreman *Personal Protective Equipment Policy* for additional information).

5.5.6 A gas detection system with visible and audible alarms to detect the presence of leaks, etc. must be installed for all toxic and highly toxic gases when the physiological warning properties for the gas are at a level below the accepted permissible exposure limit or ceiling limit for the gas. Contact manager or foreman for specifics on installing the gas monitoring system.

5.5.7 An emergency response procedure must be in place and everyone working in the area must be trained on the procedures.

**5.6 Cryogenic**

5.6.1 Wear face shield and chemical safety goggles when dispensing from cylinder or dewar toxic (see manager or foreman *Personal Protective Equipment Policy* for additional information).

5.6.2 Wear appropriate insulated gloves to protect from the extreme cold when handling cryogenic containers. Gloves need to be loose fitting so that they can be readily removed in the event liquid is splashed into them. Never allow an unprotected part of the body to touch uninsulated pipes or containers of cryogenic material.

5.6.3 Keep liquid oxygen containers, piping, and equipment clean and free of grease, oil, and organic materials.

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5.6.4 Do not store cylinders or dewars in environmental chambers that do not have fresh air ventilation. A leak or venting from the container could cause an oxygen deficient atmosphere.

5.6.5 Large stationary cryogenic systems and piping have additional requirements. Contact manager or foreman for guidance.

5.6.6 First aid treatment for cold-contact burns:

- a) Remove any clothing not frozen to the skin that may restrict circulation to the frozen area. Do not rub frozen parts, as tissue damage may result. Obtain medical assistance as soon as possible.
- b) Place the affected part of the body in a warm water bath (not to exceed 40° C). Never use dry heat.

## 5.7 Pyrophoric Gas

5.7.1 Not more than 250 cubic feet of pyrophoric gas can be in a storage area.

5.7.2 Lecture bottle-sized cylinders for Pyrophoric (e.g. Silane) gases must be kept in a continuously mechanically ventilated hood or other continuously mechanically ventilated enclosure.

5.7.3 Silane gas with a concentration of 2% or more by volume silane has additional safety requirements for flow control, exhausted enclosures or gas cabinets and emergency power. Contact manager or foreman for information.

## 6.0 TRANSPORTING CYLINDERS

6.1 The protective cap must be in place.

6.2 Avoid dropping and striking cylinders together. The cylinder should not be lifted by the cap.

6.3 Use a cradle for hoisting, never a lifting magnet or sling.

6.4 Use a suitable hand truck with the cylinder firmly secured. Avoid dragging, sliding or rolling cylinders.

6.5 Cylinders must be secured in a positive fashion with straps or chains while being transported and when in motor vehicles.

6.6 Use a Freight Elevator when possible. If there is no Freight Elevator, do not use an elevator with people in it and do not allow other people to enter the elevator when transporting cylinders. When transporting Asphyxiant gas in elevators send the cylinder up by itself and then follow in another elevator or stairs. This can only be done if the elevator can be made to not stop at any other floors before the cylinder is removed.

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**7.0 STORAGE**

7.1 Cylinder storage areas must be prominently posted with the names and hazard class of the gases to be stored.

7.2 Cylinders not “in use” (“in use” means connected through a regulator to deliver gas to a laboratory operation, connected to a manifold used to deliver gas to a laboratory operation or a single cylinder secured alongside the cylinder as the reserve cylinder) must not be stored in the laboratory.

7.3 When gases of different types are to be stored at the same location, cylinders should be grouped by type of gas and the groups arranged taking into account the type of gas contained (e.g., flammable gases may not be stored next to oxidizing gases). Empty cylinders should be stored separately from full cylinders.

7.4 Storage rooms should be dry, cool, and well ventilated. Cylinders should not be stored at temperatures above 51 degrees C. (125 degrees F.) or near radiators or other sources of heat. Cylinders must be stored a minimum of 20 feet from incompatible materials and a minimum of 10 feet from combustible material, including vegetation.

7.5 Cylinders stored outside must be protected against extremes of weather and combustible waste and vegetation must be kept a minimum off 10 feet from the cylinders..

7.6 Cylinders must be protected from any object that will produce a cut or other abrasion in the surface of the metal. Do not store near elevators or gangways, or in locations where heavy moving objects may strike or fall on them.

7.7 All gas cylinders must be capped and secured when stored. Cylinders must be stored in the upright position, unless designed for use in the horizontal position. Each cylinder must be individually secured. Nesting of cylinders is not permitted.

7.8 Do not store gas cylinders with pressure on the regulator.

7.9 Storage, use and handling areas shall be secured against unauthorized entry or access to unauthorized personnel.

**8.0 DISPOSAL OF CYLINDERS**

8.1 Close and tighten valves and replace safety caps on cylinders.

8.2 Contact supplier/vendor to obtain guidelines for the shipment of cylinders to be returned.

8.3 Identify the gas that was in the container. Valves will be removed from empty nontoxic gas cylinders before disposal as metal scrap.

8.4 Contact the supervisor for removal of cylinders that cannot be returned to the supplier/vendor or for disposal of orphaned cylinders.

8.5 Cylinders of hydrogen fluoride and hydrogen bromide should be returned to the supplier within two (2) years of the shipping date. Cylinders of corrosive or unstable

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gases should be returned to the supplier when the expiration date of the maximum recommended retention period has been reached. If no maximum recommended retention time is provided by the supplier, a 36 month (3 year) time limit should be used.

## 9.0 EMERGENCIES

9.1 In the event of a leak or suspected leak of gas, evacuate the building or area. Do not activate the fire alarm by pulling the nearest fire alarm box. Inform people to evacuate the building.

9.2 Use soapy water to detect leaks. Connections employing flammable or toxic gases are to be leak tested with Leaktec or equivalent.

9.3 An emergency plan must be prepared and updated wherever compressed gases or cryogenic fluids are produced, handled, stored or used. The plan must include the following information:

9.3.1 The type of emergency equipment available and its location (e.g. emergency eyewash & shower, fire extinguisher).

9.3.2 An indication that hazard identification labeling is provided for each storage area.

9.3.3 The location of posted emergency procedures.

9.3.4 A material safety data sheet (SDS) for each compressed gas or cryogenic fluid or list with name of gas, hazard class, and quantity, stored or used in the area.

9.3.5 A list of personnel who are designated and trained to be liaison personnel for the fire department/emergency responders and who are responsible for the following:

- a) Aiding the emergency responders in pre-emergency planning
- b) Identifying the location of the compressed gases and cryogenic fluids stored or used
- c) Accessing material safety data sheets.
- d) Knowing the site emergency procedures.

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**Appendix A**

**DEFINITIONS**

**Asphyxiant gas:** A gas, usually inert, that may cause suffocation by displacing the oxygen in the air necessary to sustain life, or is labeled by the DOT as Division 2.2.

**Compressed gas:** A gas or mixture of gases having an absolute pressure exceeding 40 psi at 70 degrees F (21.1 degrees C); or, a gas or mixture of gases having an absolute pressure exceeding 104 psi at 130 degrees F (54.4 degrees C) regardless of the pressure at 70 degrees F; or, a liquid having a vapor pressure exceeding 40 psi at 100 degrees F (37.8 degrees C) as determined by ASTM D-323-72.

**Corrosive gas:** A gas that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact or is labeled by the DOT as Division 2.3 and Division 8 (Corrosive).

**Cryogenic fluid:** A refrigerated liquefied gas having a boiling point colder than -90 °C (130 °F) at 14.7 psia absolute, or which the DOT requires the Division 2.2 label for non-flammable, nonpoisonous compressed gas-including compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas.

**Fire Control Area:** A Fire Area is an area enclosed and bounded by fire walls, fire barriers, exterior walls or fire-resistance rate horizontal assemblies of a building (NYS Fire Code Sect 902). Control Areas are spaces within a building and outdoor areas where quantities of hazardous materials not exceeding the maximum quantities allowed are stored, dispensed, used or handled (NYS Fire Code Sect. 2703.8.3). Control areas must be separated from each other by not less than a 1 hour fire barrier.

**Flammable gas:** A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or, a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit; or, one for which the United States Department of Transportation (DOT) requires their red flammable gas label or is labeled as Division 2.1.

**Oxidizer gas:** A gas that is nonflammable but can support and vigorously accelerate combustion in the presence of an ignition source and a fuel or is labeled by the DOT as Division 2.2 and Division 5.1 (Oxidizer).

**Toxic gas:** A gas that has a median lethal concentration (LC<sub>50</sub>) in air of 2,000 parts per million or less by volume of gas (Highly Toxic has an LC<sub>50</sub> of 200 ppm or less); or, a gas which the DOT requires the white poison label or is labeled as Division 2.3 "Gas poisonous by inhalation"

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because it is known to be so toxic to humans as to pose a hazard to health during transportation; or a gas that has an NFPA Health Hazard Rating of 3 (Toxic) or 4 (Highly Toxic).

**Appendix B**

REVISION HISTORY

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000	Initial issue as a controlled document	1/12	mwk
001	Reviewed	10/15	AC
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**Appendices**

- A** Self-Inspection Checklist
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**1.0 PURPOSE**

To establish requirements for safely working with electricity and to protect employees from shock, arc and fire hazards resulting from contact with electrical exposures.

**2.0 SCOPE**

This program covers electrical safety work practices for both qualified persons (those who have training in avoiding the electrical hazards of working on or near exposed energized parts) and unqualified persons (those with little or no such training) working on, near, or with the following installations:

- (1) Premises wiring. Installations of electric conductors and equipment within or on buildings or other structures, and on other premises such as yards, and other lots, and industrial substations;
- (2) Wiring for connection to supply. Installations of conductors that connect to the supply of electricity; and
- (3) Other wiring. Installations of other outside conductors on the premises

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

The qualified electricians at SJFC are:

- Dave Johnson, Electrician
- Gary Kincade, Electrician

In addition, the following have been trained in this policy and work on equipment containing electrical components:

- Brian Shaffer, HVAC Technician
- Brad Thrush, HVAC Technician
- George Zaov, HVAC Technician
- Bob Grimm, General Maintenance Technician
- Lance Murphy, General Maintenance Technician
- Edmond Kushi, General Maintenance Technician

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**3.0 GENERAL**

3.1 It is the policy at SJFC that all employees are protected from all live (energized) parts to which they may be exposed during the course of work by de-energizing before the employee works on or near them. Therefore, equipment must be put in an electrically safe work condition or prior to maintenance or repair. The exception to de-energizing parts would be if de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

3.2 Only qualified persons may work on electric circuit parts or equipment that have not been de-energized. Such persons shall establish a safe electrical working condition and be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools (see definition of qualified person).

3.2.1 The qualified employees at this facility are: none.

3.3 All electrical installations shall be completed in accordance with the National Electrical Code (NEC) and will be in compliance with the pertinent OSHA standard.

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

3.5 Live electrical parts shall be effectively de-energized before working on or near electrical circuits, equipment, or systems. Lockout and tagout out of energy sources shall be followed in accordance with this program.

3.6 Before work is begun, the Supervisor shall ascertain whether any part of an energized electrical power circuit is so located that the performance of work may bring an employee, tool, or machine into physical or electrical contact with the electric power circuit. Alerting techniques (warning signs, tape, labels, barricades, etc.) shall be used to warn and protect employees from hazards that could cause injury due to electric shock, burns, or failure of electric equipment parts.

3.7 Use properly rated test equipment and verify its condition and operation before and after use.

3.8 Maintain a clear working space in the front, back, and on each side of all electrical enclosures and around electrical equipment.

3.9 Provide adequate illumination at all times work is being performed in or around electrical equipment.

**4.0 OPERATION**

4.1 Electrical equipment, tools, cords, receptacles etc. must be inspected before each use.

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4.2 All defective components, such as damaged cords, broken plugs, broken receptacles, broken switches, loose parts etc., must be removed from service and repaired or destroyed.

4.3 All deficiencies must be repaired immediately before they can be used. These include exposed conductors, lack of guards, missing covers, open panel doors, unidentified high voltage equipment, etc.

4.4 All portable electric tools and equipment shall meet one of the following specifications:

4.4.1 Double insulated type and permanently labeled as double insulated.

4.4.2 Equipped with three wire cord having the ground permanently connected to the tool frame and a means for grounding the other end.

4.4.3 Connected to the power source by means of an isolating transformer or other isolated power supply.

4.5 All 120V single phase portable electric power tools, extension cords or electric lighting, when used outdoors, in wet conditions or in a construction area, shall be supplied through a ground fault circuit interrupter (GFCI) unless supplied by an isolated source. The ground fault interrupter, where required, shall be utilized as close to the power source as practical. Portable ground fault interrupters shall be tested before each use.

4.6 Electrical receptacles will be grounded, of proper amperage and configuration for the voltage utilized.

4.7 Extension cords are to be used for temporary purposes only and shall not be used for a permanent source of electricity. Flexible cords used with temporary and portable lights shall be designed for hard or extra-hard usage.

4.8 Extension cords used by employees of SJFC must have the three-conductor type with matching plug and receptacle and designed for hard or extra-hard usage.

4.9 Temporary lighting shall not be suspended by their electric cords unless cords and lights are designed for this.

4.10 General illumination lighting should be properly caged and protected against breakage and water penetration. Metal-case sockets shall be grounded.

4.11 Portable electric lighting used in wet and/or other conductive locations, shall be operated at 12 volts or less. However, 120-volt lights may be used if protected by a ground-fault circuit interrupter.

4.12 Select electrical equipment based upon the types of flammable materials present at the work site. If flammable materials are present take precautions to ensure there will be no electrical sources of ignition.

4.13 Ladders may not have conductive side rails in situations where the employee or the ladder could come in contact with exposed energized parts.

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4.14 Keys, rings, necklaces, metal buckles (articles of jewelry rings/watches/bracelets/key chains etc.) are prohibited from being worn if there is a possibility of contacting exposed energized parts.

4.15 Electrically conductive cleaning materials (steel wool/metalized cloth/conductive liquid solutions etc.) may not be used in proximity to energized parts.

4.16 Any interlock designed to de-energize circuits to prevent electrical shock to persons using equipment or performing minor maintenance or adjustments shall not be defeated or bypassed by an unqualified person.

4.17 De-energizing and re-energizing: lockout/tagout procedures apply to the control of potentially hazardous energy sources. (For specific information related to lockout/ tagout refer to written program.)

4.18 Extension cords shall not be fastened with staples, hung from nails, or suspended by wires. Cords shall not be placed in doorways or other pinch points, where the potential exists for the cord to be damaged or cut. Working spaces shall be kept clear of cords so as not to create a hazard to employees.

4.19 Work in hazardous or potentially hazardous locations shall be conducted in accordance with 29 CFR 1910.307.

4.20 Before using electrical equipment, employees shall make sure that hands are dry and that they are not standing in or near water. Safety glasses with side shields shall be used when working with power tools.

4.21 In general leave the electrical work to the electricians. If a piece of equipment is in question about its electrical safety have it checked out by a trained electrician or person qualified in determining the condition.

**5.0 REPAIRS**

5.1 No repairs, component replacement, alterations or modification can be done while equipment is energized.

5.2 No repairs, alterations or modification can be done on extension cords.

5.3 The electrical plug shall be removed before servicing the electrical tool including changing drill bits, changing blades, etc.

5.4 If energized equipment must be left exposed and unattended post a warning of the hazard and construct an adequate barrier or guard.

5.5 Lockout and tagout procedures must be followed at all times. Reference SJFC.'s Lockout / Tagout Program for details regarding these procedures.

5.6 When working on closed circuits, use tools with insulated handles and wear rubber gloves. Ordinary rubber gloves, boots, shoe soles etc. shall not be used as most contain carbon and will conduct electricity.

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**6.0 RESPONSIBILITIES**

The Supervisor will be responsible for identifying electrical safety hazards prior to the start of the shift and ensuring that all electrical work is conducted in accordance with OSHA regulations and state and local regulations and codes.

**7.0 DISCIPLINARY PROGRAM**

All employees will be expected to follow each of the operational procedures as indicated by this program. This program, like all other safety and health program elements, will be enforced utilizing the existing disciplinary program guidelines.

**8.0 TRAINING**

8.1 No untrained SJFC employee shall electrically troubleshoot any piece of equipment that is energized. This work can only be completed by an authorized trained electrician.

8.2 Employees who are not qualified electricians must be specially trained, with records kept of their training, before doing any work on or around electrical systems.

8.3 Qualified employees working with electrical equipment will have received the following training:

8.3.1 The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment

8.3.2 The skills and techniques necessary to determine the nominal voltage of exposed live parts

8.3.3 Understand clearance distances from unguarded overhead lines

8.3.4 Understand the hazards of electricity and the ability to recognize hazards and hazardous situations, including the installation and use of electrical equipment in hazardous or potentially hazardous locations.

8.3.5 Applicable codes, regulations and standards

8.3.6 Use and care of personal protective equipment

8.3.7 Job-specific safe electrical work practices.

**9.0 PROGRAM EVALUATION**

This program will be evaluated a minimum of one time per year to ensure effectiveness. This evaluation will identify both strengths and needed improvement areas. All needed improvement areas will result in an action plan so that program improvements can be made.

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**Appendix A**

**Self-Inspection Checklist**

- Do you specify compliance with OSHA for all contract electrical work that you contract for your work area?
- Are all employees required to report as soon as practicable any obvious hazard to life or property observed in connection with electrical equipment or lines?
- Are employees instructed to make preliminary inspections and/or appropriate tests to determine what conditions exist before starting work on electrical equipment or lines?
- When electrical equipment or lines are to be serviced, maintained, or adjusted, are necessary switches opened, locked out, and tagged whenever possible?
- Are portable electrical tools and equipment grounded or of the double insulated type?
- Are electrical appliances such as vacuum cleaners, polishers, vending machines, etc., grounded?
- Do extension cords being used have a grounding conductor?
- Are multiple plug adapters prohibited in your work area?
- Do you have electrical installations in hazardous dust or vapor areas? If so, do they meet the National Electrical Code (NEC) for hazardous locations?
- Is exposed wiring and cords with frayed or deteriorated insulation repaired or replaced promptly?
- Are flexible cords and cables free of splices or taps?
- Are clamps or other securing means provided on flexible cords or cables at plugs, receptacles, tools, equipment, etc., and is the cord jacket securely held in place?
- Are cord, cable, and raceway connections intact and secure?
- In wet or damp locations, are electrical tools and equipment appropriate for the use or location or otherwise protected?
- Is the location of electrical power lines and cables (overhead, underground, under floor, other side of walls, etc.) determined before digging, drilling, or similar work is begun?
- Are metal ladders, measuring tapes, ropes, hand lines, or similar devices with metal in the make-up prohibited where they could come in contact with energized parts of equipment, fixtures, or circuit conductors?
- Are all disconnecting switches and circuit breakers labeled to indicate their use or equipment served?
- Are disconnecting means opened before fuses are replaced?
- Do interior wiring systems include provisions for grounding metal parts of electrical raceways, equipment and enclosures?

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- Are all energized parts of electrical circuits and equipment guarded against accidental contact by approved cabinets or enclosures?
- Is sufficient access and working space provided and maintained about all electrical equipment to permit ready and safe operations and maintenance?
- Are all unused openings (including conduit knockouts) in electrical enclosures and fittings closed with appropriate covers, plugs, or plates?
- Are electrical enclosures such as switches, receptacles, junction boxes, etc., provided with tight-fitting covers or plates?
- Is each disconnecting switch or circuit breaker located within sight of control device or motor-powered machines/equipment?
- Is the controller for each motor in excess of two horsepower, rated in horsepower equal to or in excess of the rating of the motor it serves?
- Are employees who regularly work on or around energized electrical equipment or lines instructed in the cardiopulmonary resuscitation (CPR) methods?
- Are employees prohibited from working alone on energized lines or equipment over 600 volts?

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**APPENDIX B**

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APPENDIX A REVISION HISTORY

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**1.0 PURPOSE**

The purpose of this written program is to ensure that proper procedures and safe methods are utilized during normal work activities involving various types of powered equipment. The intent of this program is to prevent injuries and/or illnesses from unsafe conditions that could be encountered during normal workplace equipment operations.

**2.0 SCOPE**

This procedure pertains to all employees and contractors involved with workplace operations at SJFC. It is designed to provide a formal procedure for identifying and controlling hazards associated with powered equipment operations, which could be created during the course of normal work activities. Violation of established procedures is a serious offense and failure to comply with this plan shall result in appropriate disciplinary action.

This Machine Guarding Program has been developed to comply with the requirements of OSHA 1910 Subpart O and ANSI B 11 Standards.

**3.0 RESPONSIBILITIES**

3.1 Managers / Supervisors and Authorized Employees are responsible for ensuring that all equipment is in proper operating condition, are aware of the hazards associated with the specific areas of the workplace and the requirements of SJFC safety policy.

3.2 The safety coordinator shall ensure that this procedure is followed and revised as required.

3.3 The safety coordinator shall conduct regular audits to ensure that the procedure has been implemented and maintained.

**4.0 MACHINE GUARDING ASSESSMENT**

OSHA requires that one or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.

4.1 Hazard Assessment: SJFC shall conduct assessments of existing, new and transferred equipment to identify potential hazards and implement corrective measures. The assessment shall uncover any motion or action of a machine, power-operated tool, or power-transmission device which may have the potential to cause injury. These areas require one or more methods of guarding to prevent accidental contact.

4.2 There are many ways to safeguard machinery. The type of operation, the size or shape of stock, the method of handling, the physical layout of the work area, the type of material, and production requirements or limitations will help to determine the appropriate safeguarding method for the individual machine.

We develop guarding solutions based on the following hierarchy of group safeguards:

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**1. Guards**

- Fixed
- Interlocked
- Adjustable
- Self-adjusting

**2. Devices**

- Presence Sensing
  - Photoelectrical (optical)
  - Radiofrequency (capacitance)
  - Electromechanical
- Pullback
- Restraint
- Safety Controls
  - Safety trip control
    - " Pressure-sensitive body bar
    - " Safety triprod
    - " Safety tripwire cable
  - Two-hand control
  - Two-hand trip
- Gates
  - Interlocked

**3. Location/Distance**

**4. Potential Feeding and Ejection Methods to Improve Safety for the Operator**

- Automatic feed
- Semi-automatic feed
- Automatic ejection
- Semi-automatic ejection
- Robot

**5. Miscellaneous Aids**

- Awareness barriers
- Miscellaneous protective shields
- Hand-feeding tools and holding fixtures

4.3 Guards shall be affixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard shall be such that it does not offer an accident hazard in itself. Permanent mounted guards shall be securely attached and in good condition and removable guards shall be in place before the equipment is put into service.

4.4 Guards shall meet, but are not limited, to the following minimum requirements:

4.4.1 Guards shall be so designed and installed to prevent any part of the employee's body from coming into contact with dangerous moving parts.

4.4.2 Guards shall be designed and installed to prevent easy removal. They shall be secure and durable to withstand normal use.

4.4.4 Guards shall be designed and installed to prevent objects from falling into moving parts.

4.4.5 A guard shall not in itself create a new hazard such as a shear point, jagged edge or unfinished surface that could cause an injury to the employee.

4.4.6 Electrically interlocked guards shall be designed with fail to safe circuits.

4.4.7 Mechanical interlocks shall be of unique design.

## 5.0 OPERATING PROCEDURES

5.1 If any guard is determined to be defective, damaged or otherwise does not meet the requirements of this program the equipment shall not be used until corrected.

5.2 If operation of the equipment has the potential to injure people in the area it shall not be used until the hazard has been eliminated or controlled.

5.3 If PPE is required it shall be available and worn at all times while the equipment is in operation.

5.4 The work area shall be well lit and in a clean and orderly condition.

5.5 Clothing and jewelry, which may have the potential to be caught in moving machinery, shall be removed and appropriate measures taken.

5.6 Only authorized employees shall be allowed to install and / or repair machinery and equipment.

5.7 Other than for normal maintenance, new and overhauled machinery and / or equipment shall go through a pre-startup process by utilizing the machine guarding assessment.

5.8 No guard or safety device shall be removed except by authorized employees and only after LOTO has been accomplished.

5.9 If conditions exist which cause the employee to become distracted or unable to focus on the work with machinery and / or equipment than work must stop until the condition is corrected.

5.10 Machinery and equipment shall be maintained in safe and proper operating condition as applicable.

5.11 Machinery and equipment shall be properly stored when not in use.

5.12 If problems develop during machinery and / or equipment use it shall be shut down and locked out until corrections have been made.

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5.13 Machinery and / or equipment shall be that which is designed and installed for the specific operation (use the right tool for the job).

5.14 Electrical connections shall be in accordance with applicable codes and regulations. Only qualified employees are allowed to work on exposed and energized electrical circuits.

**6.0 TRAINING PROGRAM**

6.1 It is SJFC policy to allow only trained and authorized employees to operate machinery, tools and / or equipment. This includes employees that operate manufacturing machinery and equipment; machine shop employees; maintenance employees; and contractors.

6.2 Under no circumstances will an employee operate any machinery and / or equipment until they have successfully completed the applicable training program. This includes new employees and transferred employees regardless of claimed previous experience.

6.3 SJFC shall provide training to all employees and others whose job requires them to operate machinery and / or equipment. The training shall ensure that each person working for or on behalf of the company has acquired the knowledge, skills and competence necessary to identify and understand the proper actions required for the safe performance of their duties. Specific and detailed training is a crucial part of any effort to provide safeguarding against machine-related hazards.

This content includes but is not limited to;

- 6.3.1 A description and identification of the hazards associated with particular machines;
- 6.3.2 The safeguards themselves, how they provide protection, and the hazards for which they are intended;
- 6.3.3 How to use the safeguards and why;
- 6.3.4 What to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection.
- 6.3.5 How and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only);
- 6.3.6 SJFC Health & Safety policy and applicable OSHA regulations.

6.4 Initial training is necessary for new operators and maintenance or setup personnel and when workers are assigned to a new machine or operation.

6.5 Re-training is required when an employee is observed performing an unsafe act or when the operator demonstrates a lack of knowledge, skill or ability to identify and understand the proper actions required for the safe performance of their duties.

6.6 Training will be conducted either in classroom or on the job hands-on training and shall include operational evaluations by the supervisor. Training shall include but is not limited to the following listed machinery and equipment:

<b>DEPARTMENT</b>	<b>MACHINERY, TOOLS, EQUIPMENT</b>
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Electrical	Meters, manufacturing equipment, facilities equipment, electrical systems & hand tools
Facilities / Grounds	Landscaping hand and power tools, cutters, chain saws, saws
Machine Shop	Lathes, drill presses, mills, grinders, welders, cutters, all metal working machinery & hand tools
Maintenance	Wood working machinery, drill presses, saws, & hand tools

6.7 All operators will be trained at least every two (2) years.

### 7.0 PROGRAM EVALUATION

The safety coordinator shall monitor this procedure to ensure that all elements of the program have been implemented and that employees, contractors and others working for or on behalf of the company are performing work operations in accordance with these procedures.

### 8.0 RECORD-KEEPING

All training shall be documented.

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APPENDIX A  
REVISION HISTORY

ISSUE NO	ACTIONS	DATE	BY
1	Original Issue	1/12	mwk
2	Reviewed	10/15	AC

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  - 5.10 Wire Rope
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**1.0 PURPOSE**

To ensure that SJFC employees involved with the handling and storage of materials understand and can demonstrate proper procedures and work practices to minimize accidents.

The intent of this material handling and storage program is to describe common material handling and storage problems, the means of identifying and correcting these problems, proper use of material handling equipment, and general guidelines on safe practices.

**2.0 SCOPE**

Mishandling of material accounts for over one-third of the injuries at a work place. The types of injuries that are experienced include strains, sprains, crushing, hernia, rupture, lacerations, bruises and contusions.

This procedure pertains to all SJFC employees and contractors that may during the course of work be involved in material handling and storage. This procedure applies to all operations of SJFC.

**3.0 RESPONSIBILITIES**

3.1 The supervisor shall be responsible for the enforcement of the safe work practices identified in this program. The supervisor shall regularly inspect and identify actual and potential problems associated with poor material handling and storage. Supervision will then evaluate and correct these problems through training, engineering methods, ergonomic principles and education.

3.2 The employee shall follow safe practices associated with proper material handling and storage as identified in this program. Employees shall be aware of accidents that may occur from unsafe or improperly handled equipment or materials and improper work practices. Employees are expected to work with the supervisor to correct potential problems associated with poor material handling and storage.

**4.0 GENERAL**

4.1 Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

4.2 Secure storage. Storage of material shall not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

4.3 Housekeeping. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

4.4 Clearance signs to warn of clearance limits shall be provided.

4.5 Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

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**4.0 MANUAL LIFTING**

4.1 When manually moving materials, employees should seek help when a load is so bulky it cannot be properly grasped or lifted, when they cannot see around it, or when a load cannot be safely handled.

4.2 Before lifting, the following proper evaluation procedures shall be followed:

- 4.2.1 Is it too heavy or bulky get help or break it down.
- 4.2.2 Check the load for nails, splinters, sharp edges, oil, grease, moisture, or if the edges are rough or sharp. If possible grip object where it is least hazardous.
- 4.2.3 Wear appropriate safety shoes to help prevent foot injury.
- 4.2.4 Know where the load is going and where you are going to put it down.
- 4.2.5 Be sure the path you take is clear of any obstacles.

4.3 When lifting an object the following procedures shall be followed:

- 4.3.1 Step 1– Face the object and get as close as you can to it,
- 4.3.2 Step 2 – Get a firm footing and place your feet about shoulder width apart,
- 4.3.3 Step 3 – Bend your knees from hips and squat, keeping your back,
- 4.3.4 Step 4 – Grip sides of object using your whole hands as a balance point,
- 4.3.5 Step 5 – Lift by straightening legs using thigh muscles to raise your body,
- 4.3.6 Step 6 – Bring your back and legs to a vertical position

4.4 When carrying objects the following procedures shall be followed:

- 4.4.1 Do not carry objects that block your vision ahead or to the sides.
- 4.4.2 If you have to change your grip, set the object down and re-grip.
- 4.4.3 DO NOT hurry if you feel you cannot hold the object much longer. Put it down and rest and get assistance
- 4.4.4 When changing directions, DO NOT twist the body. Change the direction of the feet to turn the body.

4.5 When setting down objects the following procedures shall be followed:

- 4.5.1 Reverse the lifting object procedure to set down object.
- 4.5.2 If the receiving surface is near waist level, place the load on the edge of the surface and then push it forward.

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4.5.3 DO NOT set a heavy object into a position below floor level directly from carrying. It should first be lowered to floor level.

4.5.4 Avoid awkward positions or full extension of arms.

4.6 If you must lift an object higher than your waist, first lift the load to waist level, and then rest it on a support, while you change your grip. Then bend your knees again to give added leg muscle power for the final lift.

4.7 When two or more are carrying a single object, one should call the signals to assure they lift, carry and lower together. Avoid placing unnecessary strain on one individual.

4.8 Handles and holders should be attached to loads whenever possible. Keep fingers away from pinch points, especially when maneuvering through narrow openings or when setting the object down.

**5.0 MECHANICAL LIFTING**

Mechanical material lifting is advantageous when compared to manual lifting and is preferred at SJFC.

5.1 When an employee is placing blocks under raised loads, the employee should ensure that the load is not released until their hands are clearly removed from the load.

5.2 Blocking materials and timbers should be large and strong enough to support the load safely. Materials with evidence of cracks, rounded corners, splintered pieces or dry rot should not be used for blocking.

5.3 When mechanically moving materials, avoid overloading the equipment by letting the weight, size and shape of the material being moved dictate the type of equipment used for transporting it.

5.4 All material handling equipment shall have a rated capacity that determines the maximum weight that it can safely handle and the conditions under which it can handle those weights. These capacities must never be exceeded except for load testing.

5.5 Loads should be picked up only when they are directly under a hoist. Otherwise, dangerous stresses may be imposed on it.

5.6 Dollies are usually best used for carrying single heavy objects short distances.

5.6.1 Guide dollies by pushing the load.

5.6.2 Do not pull a load on a dolly unless a second person has a rope attached in the rear where braking action can be applied.

**5.7 Ropes, Chains and Slings**

5.7.1 Leather work gloves should always be worn when handling ropes, chains and slings.

5.7.2 Ropes, chains and slings are elastic and stretch under stress. Caution should be exercised since they will snap back if they fail.

5.7.3 Select the correct sling type for the material to be handled. Each type of sling has its advantages and disadvantages and is designed to be utilized for particular operations.

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5.7.4 Successful use of synthetic ropes and slings depends to a large extent on selection of those having physical properties and characteristics which meet the requirements of the specific use involved.

5.7.5 Synthetic ropes and web slings are generally much stronger and offer greater dielectric qualities than manila rope. They also possess a high resistance to friction.

5.7.6 Repaired slings shall be tested by the manufacturer or equivalent to twice the rated capacity prior to return to service. The department head will retain the certificate of the test and have it available for examination.

5.7.7 Sling legs should not be kinked.

5.7.8 Slings shall be securely attached to their loads.

5.7.9 Suspended loads shall be kept clear of all obstructions.

5.7.10 All employees shall be kept clear of loads about to be lifted and of suspended loads.

5.7.11 Shock loading will not be permitted. Lift load slowly, so load is not "jerked".

**5.8 Natural and Synthetic Fiber Rope Slings**

5.8.1 All ropes should have a breaking strength of at least five (5) times greater than the working strength.

5.8.2 Rope should be inspected prior to being put in service and periodically under ordinary conditions and more often if required by work conditions.

5.8.3 Rope should never be kinked, dragged on the ground or against rough or sharp objects.

5.8.4 Only authorized employees shall make modifications.

5.8.5 Natural and synthetic fiber rope slings should immediately be removed from service if any of the following conditions are present:

- a) Abnormal Wear
- b) Powdered fibers between strands
- c) Broken or cut fibers
- d) Variations in the size or roundness of strands
- e) Discoloration or rotting
- f) Distortion of hardware in the sling

5.8.6 Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in temperature range from minus 20 degrees F to plus 180 degree F without decreasing the work load limit. For operation outside these limits the manufacturer's recommendations shall be followed.

5.8.7 Spliced fiber rope slings will not be used unless they have been spliced in accordance with the requirements of the manufacturer.

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5.8.8 Only fiber rope slings made from new rope shall be used. The use of repaired or reconditioned fiber rope slings is prohibited by law.

5.9 Web Slings

5.9.1 Nylon web slings shall not be used where acid or phenolic fumes, vapors, sprays, mists, are present.

5.9.2 Web slings with aluminum fittings shall not be used where caustic fumes, sprays, mists, or liquids are present.

5.9.3 Repaired synthetic web slings should not be used unless they have been repaired by a sling manufacturer or equivalent entity.

5.9.4 Synthetic web slings shall immediately be taken out of service if any of the following conditions are present:

- a) Acid or caustic burns
- b) Melting or charring of any part of the sling surface
- c) Snags, punctures, tears or cuts
- d) Broken or worn stitches
- e) Distortion of fittings

5.10 Wire Rope

5.10.1 Wire rope should be inspected before, during and after each use. The following are some things to look for:

- a) Kinking, crushing or bird caging, or any other damage resulting in the distortion of the wire rope structure.
- b) Evidence of heat damage. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200 degrees F.
- c) Ten (10) randomly distributed broken wires in one rope lay, or five (5) broken wires in one strand in one rope lay. Wire rope should not be used if in any length of eight diameters, the total number of visible broken wires exceeds 10% of the total number of wires.
- d) Wear or scraping of one-third (1/3) the original diameter of outside individual wires.
- e) End attachments that are cracked, deformed or worn.
- f) Corrosion of the rope or end attachment. Corrosion will materially weaken a rope; however, it is almost impossible to determine the extent of the weakness. It must be assumed that the interior wires are in a like condition.

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- g) Correct lubrication. Frequent application of the proper lubricant to the exterior of the rope helps retain the original lubricant to the rope.

- 5.10.2 Wire rope slings shall not be used with loads in excess of their rated capacities.
- 5.10.3 All welded end attachments shall not be used unless tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use.
- 5.10.4 Never lift a heavy load at less than a forty-five (45) degree angle.
- 5.10.5 Protruding ends of strands in splices shall be covered or blunted.
- 5.10.6 Wire rope should not be secured by knots.
- 5.10.7 An eye splice should have at least three full tucks.
- 5.10.8 Wire rope should consist of one continuous piece without knots or splices.
- 5.10.9 Eyes in wire rope bridle should not be formed by clips or knots.
- 5.10.10 Rigging should be inspected each day prior to use.
- 5.10.11 Never use a wire sling against the sharp edge of a load.
- 5.10.12 Never use or modify a sling with knots, bolts, or other makeshift devices.
- 5.10.13 Always be sure that the sling is securely attached to and that it supports its load. Initially visually inspect the load and then slowly lift the object an inch or two off the floor for a period before proceeding with the full lift.
- 5.10.14 Sudden stresses due to impact or acceleration can increase the dead load two to three times.
- 5.10.15 A rope that has been in service should never be used to fabricate slings or chokers.
- 5.10.16 At least three full turns of wire rope should be maintained on any drum.

**5.11 Chains and Chain Slings**

- 5.11.1 Chain and chain slings should be inspected before, during and after each use. The following are some things to look for:
  - a) Evidence of corrosion or other wear.
  - b) Evidence of faulty welds.
  - c) Cracking of the links or other parts.
  - d) Evidence of the chain links stretching or bending.
  - e) Evidence of the hooks stretching beyond fifteen (15) percent of the normal throat openings or twisting beyond ten (10) degrees from the plane of the unbent hook.
- 5.11.2 Chains shall not be spliced.
- 5.11.3 A strain shall not be placed on a kinked chain.

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- 5.11.4 Do not remove the required identification and load ratings from the chain slings.
- 5.11.5 Use only attachments which have a rated capacity at least as great as the chain.
- 5.11.6 A hammer shall not be used to force a hook over a chain link.
- 5.11.7 All hooks should have approved safety latches in proper working order.
- 5.11.8 Hooks that have been opened more than fifteen percent of the normal throat opening measured at the narrowest point or twisted more than ten degrees from plane of the unbent hook.
- 5.11.9 Loads should always be properly set in the bowl of the hook.
- 5.11.10 Keep chains free of grease and store them properly.
- 5.11.11 Attachments should have a rated capacity at least equal to the chain.
- 5.11.12 Makeshift hooks, links, or fasteners should not be used.
- 5.11.13 Safety latches should be installed on all hooks.

**5.12 Sheaves**

- 5.12.1 Undersized sheaves are directly responsible for many rope failures. Under no circumstances should a rope be operated over a sheaf smaller than the "Critical" diameter of the rope. A sharper bend results in displacement of the strand and over stressing of the wires.
- 5.12.2 The grooves in the sheaves should be the right size for the rope. Undersized grooves cause a pinching action that literally eats up the rope and sleeves. Oversized grooves result in the rope becoming fattened and distorted.

**5.13 Crosby Clips**

- 5.13.1 Clips should be at least 6 rope diameters apart.
- 5.13.2 The "U" bolts should bear upon the "dead" end of the rope.
- 5.13.3 A heavy-duty thimble for the eye is recommended.
- 5.13.4 Any item found to be defective should be removed from service and destroyed.

**5.14 Shackles**

- 5.14.1 Exhibit should be used to determine the safe working loads of shackles. Also if the width between eyes is greater than that listed, the shackles have been overstrained
- 5.14.2 All shackles pins must be straight and all pins of the screw in type must be screwed in all the way.

**6.0 MATERIAL STORAGE**

6.1 Storage areas must be kept free from accumulated materials that may cause tripping, fires, or explosions, or that may contribute to the harboring of rats and other pests.

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6.2 When stacking materials be aware of how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored.

6.3 DO NOT store incompatible materials together. Be sure you know the compatibility of the materials is that you storing. Common materials that are incompatible are:

6.3.1 Acids and bases \* Acid and chlorine bleach

6.3.2 Acids and cyanide mixtures \* Fuels or solvents and oxidizers

6.3.3 Fuels or solvents and peroxides \* Ammonia and chlorine bleach.

6.3.4 Corrosives and untreated metals (e.g., Aluminum)

6.4 All bound materials should be stacked, placed on racks, blocked, interlocked, or otherwise secured to prevent from sliding, falling, or collapsing.

6.5 A load greater than that approved by a building official may not be placed on any floor of a building or other structure. Where applicable, load limits approved by the building inspector should be conspicuously posted in all storage areas.

6.6 Always be sure that you stack material on a solid, smooth, level, safe base. If the floor or ground is not level, use dunnage or bearing strips or timber to make sure that the pile will not shift.

6.7 Always stack or pile to a safe height, which means not so high the pile is unstable. Do not stack so high that the lower objects may collapse from the weight and cause the pile to fall.

6.8 Always maintain a minimum of eighteen inches between pile and the sprinkler heads.

6.9 Maintain aisle space for workers and fire equipment. Materials should not protrude from the face of the pile.

6.10 The following guidance is provided for the storage of general classes of materials.

6.11 Boxes and Cartons

6.11.1 Boxes and cartons will be stacked by cross-tying when piles are above head height.

6.11.2 The safe height will depend upon the size and weight of containers.

6.11.3 Cartons should be stored on pallets or platforms to protect against moisture.

6.11.4 Wire or strap banded cartons and boxes should be stored so sharp ends do not protrude into walkways.

6.11.5 Piles should be perpendicular to the floor, except for step back stacking.

6.12 Flammable Liquids

6.12.1 Flammable liquid containers will be racked for easy identification and access.

6.12.2 They will be identified with a manufacturer label, a stenciled title or other approved means, and equipped with self-closing spigots.

6.12.3 Drums will be bonded and grounded to prevent from static electricity from accumulating.

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6.13 Gas Cylinders

- 6.13.1 Gas cylinders should be stacked upright and in approved cylinder racks.
- 6.13.2 Individual cylinders must be chained or clamped to a substantial structure such as a wall or columns.
- 6.13.3 The storage location will not be exposed to mobile equipment traffic, direct sunlight, or heat sources.
- 6.13.4 Indoor storage spaces shall be well ventilated and posted as no smoking.
- 6.13.5 Different gases should be stored separately.
- 6.13.6 Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a non-combustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- 6.13.7 Cylinders must be capped when not in use.

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6.14 Hazardous Liquid Chemicals

6.14.1 Hazardous liquid chemicals shall be bulk stored in special locations designed for such storage.

6.14.2 These special storage locations shall be well ventilated, free from temperature extremes, capable of being locked to prevent unauthorized access, provided with suitable handling facilities and include diking.

6.14.3 Hazardous liquid drums must be stored in racks and never stacked.

6.14.4 Hazardous liquid drums must be provided with self-closing spigots.

6.14.5 The drums should be clearly identified by approved markings.

6.15 Machinery Spare Parts

6.15.1 Large machinery spare parts should be stored in rows.

6.15.2 The location should be as near to the source of use as possible.

6.15.3 A walkway space should be maintained between rows to provide access and easy identification.

6.15.4 Individual items should not be stored on top of one another.

6.15.5 Shelving should have load limits clearly posted.

**7.0 TRAINING PROGRAM**

7.1 SJFC shall provide training to all employees whose work is regulated by the standards covered in this procedure when they are new to the position or if there is significant changes to their work process. The training shall ensure that each employee has acquired the knowledge and skills to identify and understand the necessary actions for the safe performance of their duties and will include:

7.1.1 Overview of associated OSHA standards,

7.1.2 Potential hazards of the tool(s) used in the workplace,

7.1.3 Conditions specific to their work area,

7.1.4 Proper procedures for selecting, inspecting and utilizing the appropriate equipment and attachments.

7.2 The intent of this training is to ensure that employees understand the hazards associated with their specific workplaces and can demonstrate the actions necessary to maintain a safe workplace.

7.3 All training shall be documented.

**8.0 PROGRAM EVALUATION**

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The safety coordinator shall monitor this program annually to ensure that all elements of the program have been implemented and that employees, contractors and others working for or on behalf of the company are performing work operations in accordance with these procedures.

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**1.0 PURPOSE**

SJFC is dedicated to the protection of its employees from on-the-job injuries. All employees of SJFC have the responsibility to work safely on the job. The purpose of this plan is to:

- Supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on the job.
- Ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of erection.

**2.0 SCOPE**

This program informs interested persons, including employees that SJFC is complying with OSHA's Fall Protection requirements for both General Industry and Construction.

This program applies to all employees who might be exposed to fall hazards. All fall protection systems selected for each application will be installed before an employee is allowed to go to work in an area that necessitates the protection. Certain employees are authorized to inspect, investigate, or assess workplace conditions before construction work begins or after all construction work has been completed. These employees are exempt from the fall protection rule during the performance of these duties.

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These authorized employees also determine if all walking/working surfaces on which our employees work have the strength and structural integrity to support the employees. Our employees will not be allowed to work on these surfaces until they have the requisite strength and structural integrity.

**3.0 DUTY TO PROVIDE FALL PROTECTION**

3.1 To prevent falls, SJFC has a duty to anticipate the need to work at heights and to plan our work activities accordingly. Careful planning and preparation lay the necessary groundwork for an accident-free jobsite.

**4.0 WORKSITE ASSESSMENT AND FALL PROTECTION SYSTEM SELECTION**

There are situations at this worksite that will require fall protection.

This fall protection plan is intended to anticipate the particular fall hazards to which our employees may be exposed. Specifically, we:

- 4.0.1 Inspect the area to determine what hazards exist or may arise during the work.
- 4.0.2 Identify the hazards and select the appropriate measures and equipment.
- 4.0.3 Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions.
- 4.0.4 Ensure employees follow procedures given and understand training provided.
- 4.0.5 Apprise ourselves of the steps our specialty subcontractors have taken to meet their fall protection requirements.

**4.1 HAZARD ASSESSMENT**

Providing fall protection requires an assessment of each fall situation at a given jobsite. Our criteria for selecting a given fall protection system follow those established at 29 CFR 1926.502, fall protection systems criteria and practices. Each employee exposed to these situations must be trained in the nature of hazards they may encounter and in the proper equipment.

- 4.1.1 Conventional fall protection includes restraint systems and arrest systems. Our company policy is to choose in order of priority; work platforms such as ladders, scaffolds, aerial lifts then restraint systems as guardrail systems, personal restraint (lanyards), and finally arrest systems (PFAS) to protect our employees in all situations.

Controlling Fall Hazard: Conventional Fall Protection

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The following hierarchy, or preferred order of control, shall be used to choose methods to eliminate or control fall hazards. More than one control measure may be used to reduce the risk of a fall and/or control a hazard.

4.1.2 Elimination or Substitution (Guardrail) - Removing the hazard or hazardous work practices.

4.1.3 Fall Restraint – equipment that prevents a free fall in the first place. This works by securing the Authorized Person to a connection point using a lanyard short enough to prevent the person's center of gravity from reaching the fall hazard.

Personal fall restraint – a body belt or harness connected to an anchor to prevent you from going over the edge of the roof, guardrail, or hole cover.

4.1.4 Fall Arrest – equipment that stops a free fall in progress (in the middle of the fall). A system designed to stop an Authorized Person after a fall has begun.

Personal fall arrest systems – a body harness, D-ring, lanyard, deceleration device, anchor point Or Rope Grab. Or Catch platforms, Or Safety nets,

4.1.5 Administrative Controls - Work practices or procedures that reduce the risk of a person falling.

4.1.6 Planning Matrix: Service, Maintenance, new Build

	<b>Fall Protection Starts At</b>	<b>Flat roof</b>	<b>Low Sloop</b>	<b>Steep Sloop</b>	<b>Hazardous Conditions</b>
<b>General Industry</b>	4 ft elevation from next level	Reasonable fall hazard - Warning Line 15 ft from edge plus instruction	Warning Line 15 ft from edge plus instruction or Conventional Fall Protection	Conventional Fall Protection	Conventional Fall Protection

**5.0 UNCONVENTIONAL FALL PROTECTION**

5.1 There may be occasions when our employees are involved in specific work that warrants the use of unconventional fall protection. These include the following types of work:

- Formwork and Reinforcing Steel
- Overhand Bricklaying and Related Work
- Roofing Work on Low-Slope Roofs
- Precast Concrete Erection

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On these rare occasions, the appropriate system considered ‘unconventional’ such as warning lines (6’ from edge), safety monitor, controlled access zones (CAZ), or a fall protection plan will be used to protect our employees from the fall hazard.

**6.0 PROTECTION FROM FALLING OBJECTS**

When employees are exposed to falling objects, we ensure they wear hard hats and also implement one of the following measures:

6.1 Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels.

6.2 Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally moved.

6.3 Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally moved.

Cover or guard holes 6 feet or more above a lower level.

**7.0 GENERAL WORKSITE POLICY**

7.1 If any one of the conditions described in the Workplace Assessment is not met for the area or piece of equipment posing a potential fall hazard, then do not perform that work until the condition is met. If you cannot remedy the condition immediately, notify a supervisor of the problem and utilize a different piece of equipment or work in a different area, according to the situation.

7.2 If the situation calls for use of fall protection devices such as harnesses or lanyards because the fall hazard cannot be reduced to a safe level, then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work.

7.3 Only employees trained in such work are expected to perform it.

7.4 All places of employment, job sites shall be kept clean and orderly and in a sanitary condition.

7.5 All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.

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**8.0 TRAINING PROGRAM**

8.1 Under no circumstances shall employees work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until they have successfully completed this company's fall protection training program.

8.2 The training program includes classroom instruction and operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard the employee may encounter. The training program is given by a "competent person" qualified in each aspect of the program, and must cover the following areas:

8.2.1 The nature of fall hazards in the work area.

8.2.2 Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free fall distance (including determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspection and storage of the system.

8.2.3 The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.

8.2.4 The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.

8.2.5 The role of each employee in the safety monitoring system when this is used.

8.2.6 The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.

8.2.7 The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.

8.2.8 The role of employees in fall protection plans.

8.2.9 The standards contained in Subpart M of the construction regulations.

8.2.10 The program coordinator will identify all current and new employees who require training and schedule the classroom instruction for those employees. Training on the above components will occur both in the classroom and on the job site, as appropriate. Classroom training will cover written policy/procedures on fall protection. Job site instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific job.

8.3 The program coordinator has overall responsibility for the safety of employees and will verify compliance with 1926.503(a), training program, for each employee required to be trained.

8.4 The program coordinator has the responsibility of determining when an employee who has already been trained, does not have the understanding and skill required by the training program (1926.503(a)).

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A written certificate of training is required which must include:

- The name or other identity of the employee trained.
- The date(s) of training.
- The signature of the competent person who conducted the training or the signature of the employer.

8.5 Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed to minimize fall hazards.

**9.0 ENFORCEMENT**

9.1 Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The jobsite superintendent, as well as individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

**10.0 INCIDENT INVESTIGATION**

10.1 All accidents that result in injury to workers, regardless of their nature, are investigated and reported to the Safety and Security Department. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

10.2 In the event that an employee falls or there is some other related, serious incident (e.g., a near miss) occurs, this plan will be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

**11.0 PROGRAM EVALUATION**

11.1 Any changes to the plan will be approved by the safety manager. This plan is reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers are notified and trained, if necessary, in the new procedures.

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**1.0 PURPOSE**

To assure that hand and portable power tools are maintained in a safe operating condition and that authorized employees understand and can demonstrate the safe use of portable hand tools.

**2.0 SCOPE**

This procedure pertains to all SJFC employees and contractors that may during the course of work use hand and power tools. This procedure applies to all operations of SJFC. It also reinforces the company's commitment to providing a safe and healthy work place.

**3.0 REFERENCE DOCUMENTS**

**OSHA General Requirements**

29 CFR 1926.300(a) All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in safe condition and 29 CFR 1910.242(a), the employer is responsible for the safe condition of tools and equipment used by employees, including tools and equipment supplied by the employee.

**4.0 RESPONSIBILITIES**

It is the policy SJFC to permit only trained and authorized employees to operate machinery, tools, or equipment at any time. This policy is applicable to:

- daily operators of machinery, tools, and equipment; and
- those who only occasionally have cause to use machinery, tools, or equipment.

Supervision is responsible for providing safe working tools for use by employees under their control and for implementation and verification of safety compliance.

All employees are responsible for understanding the correct use and safety associated with the use of hand and power tools.

Trained employees are responsible for safe use of hand and portable powered tools within SJFC.

**5.0 SAFETY PROCEDURES**

**Operation - General**

Employees will be trained in the use of all tools - not just power tools. They should understand the potential hazards as well as the safety precautions to prevent those hazards from occurring.

- a) Select the right tool for the job.
- b) Only approved hand or power tools, in good condition, shall be used.
- c) Any defective tool shall be tagged and removed from service immediately.

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- d) Employees shall report any defective tool to their immediate supervision.
- e) Tools and machinery with power supply deactivated, unplugged, etc., when servicing or adjusting.
- f) Tools will not be left in an elevated location where they may create a falling hazard.
- g) No employee shall create a condition where an injury may occur to themselves or others if a tool may slip.
- h) Electrical extension cords and trouble lights shall be inspected by supervision before and after each use and on a monthly basis.
- i) All tools shall be used in accordance with the manufacturer’s safety and maintenance instructions.

**5.1 Hand Tools**

**Pre-Operational Procedures for Hand Tools**

Hand tools must be inspected prior to use to ensure that:

- a) For tools with jaws, jaws are not sprung to the point of slippage.
- b) Check the head of each tool before use, including hammers, punches, chisels, mallets, bars and the like for mushrooming heads and have the tool dressed or replaced if necessary.
- c) For tools with wooden handles, the handles are free of splinters or cracks and are tight in the tool.
- d) Sharpen edges of cutting tools and carry tool with the sharp edge down. Store sharpened tool in a manner to prevent injury to persons or damage to materials or the tool.
- e) Check tool handle for tightness before use.
- f) Files shall not be used without proper handles.
- g) Employees shall only use properly insulated tools when working around energized electrical circuits or equipment.
- h) Employees will avoid the use of metal measuring tape, fabric tapes with woven metal strands, rope with wire cord, or any other tools and equipment that have conductive properties while working around energized electrical circuits or equipment.
- i) Tools shall be returned to their proper place after use.
- j) Clean, shatterproof goggles shall be worn when using chisels, punches, wedges or any tool that may create flying particles or potential eye injury from use. When others are working in the area they must also wear eye protection.

**5.2 Power Tools**

The following general precautions should be observed by power tool users:

- a) Employees shall inspect hand held power tools on a regular interval basis.

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- b) All Guards shall be designed and maintained to protect the operator from hazards associated with sawing, drilling, grinding and fastening on various materials that could generate chips, sparks and fragments. The guards shall be in place when in use.
- c) Hand held power tools should be equipped with a constant pressure switch that will shut off the power when the pressure is released.
- d) All power tools shall be used in accordance with the manufacturer's safety and maintenance instructions found in the manuals supplied with the tools.
- e) Electric cables and cords are kept clean and free from kinks. Equipment may never be carried by its cord.
- f) Never yank the cord or the hose to disconnect it from the receptacle.
- g) Keep cords and hoses away from heat, oil, and sharp edges.
- h) Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
- i) Never carry a tool by the cord or hose.
- j) All observers should be kept at a safe distance away from the work area.
- k) Secure work with clamps or a vise, freeing both hands to operate the tool.
- l) Avoid accidental starting. The worker should not hold a finger on the switch button while carrying a plugged-in tool. Switches and controls shall be designed to require positive pressure for operation. Operating controls shall be located to minimize the potential for accidental operation.
- m) Tools should be maintained with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
- n) Be sure to keep good footing and maintain good balance.
- o) The proper apparel should be worn. Loose clothing, ties, or jewelry can become caught in moving parts.
- p) All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use."
- q) Compressed air shall not be used for cleaning purposes except where it is reduced to less than 30 psi and used with effective guarding and PPE.
- r) All portable electric hand tools shall meet one of the following specifications:
  - 1) Double insulated type and permanently labeled as double insulated.
  - 2) Equipped with three wire cord having the ground permanently connected to the tool frame and a means for grounding the other end. Connected to the power source by means of an isolating transformer or other isolated power supply.
- s) Use of Ground Fault Interrupters on all 120V single phase portable electric power tools, extension cords or electric lighting, when used outdoors, in wet conditions or in a construction area, shall be supplied through a ground fault interrupter unless supplied by an isolated source.
- t) The ground fault interrupter, where required, shall be utilized as close to the power source as practical.
- u) Portable ground fault interrupters shall be tested before each use.

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- v) Each electrical tool or machine should be inspected before they are used for cord damage, proper ground connections, etc.
- w) The electrical plug shall be removed before servicing the electrical tool including changing drill bits, changing blades, etc.
- x) Extension cords used by employees of SJFC must have the three-conductor type with matching plug and receptacle.

**5.3 Grinders**

- a) Only employees who are familiar with the mounting of grinding wheels are permitted to do so.
- b) A ring test shall be completed on the wheel before installation. Ring Test:
  - 1. Support the wheel freely on a rod through the arbor hole.
  - 2. Tap the wheel lightly with a wooden object.
  - 3. If it has a clear, metallic ring the wheel does not have any cracks.
- c) Oil and adjust grinder bearings as needed.
- d) Assure wheel fits on the spindle easily. Too loose or too tight is dangerous. Securely fasten to the shaft before commencing work.
- e) Only use wheels designed for the speeds of the particular grinder.
- f) Securely adjust work-rest on all stationary grinders to within approximately 1/8 inch of the wheel.
- g) The distance between the grinder wheel periphery and the adjustable tongue or the end of the peripheral member at the top shall never exceed one-fourth inch.
- h) After wheel is mounted and before starting work, stand out of danger while allowing the grinding wheel to operate at full speed for a minimum of one (1) minute.
- i) Apply work gradually to a cold wheel at the beginning of each work task.
- j) Use the cutting surface of a grinding wheel uniformly.
- k) Avoid applying excess pressure to the wheels.
- l) Do not use the side of an emery wheel for grinding, unless it is especially designed for side grinding.
- m) When grinding narrow objects be particularly careful as they are apt to catch between the rest and the wheel.
- n) Do not store a grinding wheel on a damp or cement surface or place oily rags on the wheel.
- o) Glasses or goggles meeting ANSI requirements and full face shields will be worn by the operator at all times when the grinder is in use.

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**5.4 Fuel Powered Tools**

- a) Fuel powered tools may only be used by employees trained and familiar with the equipment.
- b) All fuel powered tools shall be stopped while being refueled, serviced, or maintained.
- c) Keep a fire extinguisher available while fueling.
- d) All fuel for fuel powered tools shall be transported, handled and stored in accordance with SJFC's Fire Safety and Prevention Program.
- e) Where fuel powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment shall apply.

**5.5 Hydraulic Powered Tools**

- a) Hydraulic power tools may only be used by employees trained and familiar with the tools.
- b) All hydraulic tools and hoses which are used on or around energized lines or equipment shall be equipped with non-conducting hoses having adequate strength for normal operating pressures.
- c) Hydraulic tool controls shall be in the off position before connecting or disconnecting tool. Deactivate the hydraulic tool control when the tool is not in use.

**5.6 Compressed Air and Pneumatic Tools**

- a) Compressed air shall not be used for cleaning purposes except where pressure is reduced to less than 30 psi.
- b) Compressed air will not be used for cleaning clothing.
- c) All air hoses and connections will be inspected before use and at regular intervals and replaced when found defective.
- d) Pneumatic power tools shall be secured to the hose by some positive means such as safety clips or retainers.
- e) The pressure shall be shut off and the air exhausted from the line before disconnecting the line from any tool or connection. The exception to this is when Quick-Disconnects and check valves are installed.

**5.7 Sheet Metal Equipment**

- a) Only SJFC employees trained and authorized to use a particular piece of sheet metal equipment which include shears, brakes, spot welders, rollers, etc. shall be allowed to operate that equipment.
- b) All sheet metal equipment shall be used in accordance with the manufacturers procedural, safety and maintenance instructions.
- c) Always observe lockout / tagout procedure when maintaining or repairing his equipment.

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**5.8 Powder-Actuated Tools**

Powder-actuated tools operate like a loaded gun and should be treated with the same respect and precautions. Only SJFC employees trained in and who have a valid authorization certificate for the operation of the particular tool in use shall be allowed to use a powder actuated tool. Their operator's permit should be on or near the person when the tool is in use.

**Safety precautions include the following:**

- a) These tools should not be used in an explosive or flammable atmosphere.
- b) Before using the tool, the worker should inspect it to determine that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions.
- c) The powder actuated tool shall not be loaded until just prior to intended firing. A loaded tool should not be left unattended, especially where it would be available to unauthorized persons.
- d) Before loading and using the tool it must be tested per the manufacturer's recommended procedure. This shall be done each day to verify that the safety devices are in correct working condition.
- e) The tool should never be pointed at anybody.
- f) Hands should be kept clear of the barrel end. To prevent the tool from firing accidentally, two separate motions are required for firing: one to bring the tool into position, and another to pull the trigger. The tools must not be able to operate until they are pressed against the work surface with a force of at least 5 pounds greater than the total weight of the tool.
- g) If a powder-actuated tool misfires, the employee should wait at least 30 seconds, then try firing it again. If it still will not fire, the user should wait another 30 seconds so that the faulty cartridge is less likely to explode, than carefully remove the load.
- h) The bad cartridge should be put in water.
- i) Suitable eye and face protection are essential when using a powder-actuated tool.
- j) Hands shall always be kept clear of the open barrel end.
- k) The muzzle end of the tool must have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles that might otherwise create a hazard when the tool is fired. The tool must be designed so that it will not fire unless it has this kind of safety device.
- l) All powder-actuated tools must be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force.
- m) If the tool develops a defect during use it should be tagged and taken out of service immediately until it is properly repaired.

**5.9 Fasteners**

When using powder-actuated tools to apply fasteners, there are some precautions to consider.

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- a) Never drive fasteners into very hard or brittle material which might chip or splatter, or make the fastener ricochet. These materials include but not limited to, cast iron, glazed tile, surface hardened steel, glass block, face brick, hollow tile, spalled concrete or concrete any closer than 3 inches to an edge or corner.
- b) Fasteners must not be fired into material that would let them pass through to the other side.
- c) In steel, the fastener must not come any closer than one-half inch from a corner or edge.
- d) An alignment guide must be used when shooting a fastener into an existing hole.
- e) Never drive fasteners into materials easily penetrated shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side.

**5.10 Woodworking Tools**

- a) Machine guards must be in place at all times.
- b) All fixed power driven woodworking tools (saws, joiners, planers, etc.), shall be provided with a disconnect switch that can either be locked or tagged in the off position and a magnetic starter.
- c) When running short or narrow stock, always use a push stick for control of material.
- d) Before a circular saw is used , check all materials for warping. When a concave edge is found, always place it away from the straight-edge guide of the saw.
- e) If the saw binds in a cut, hold the piece with a push stick and shut saw off to dislodge material.
- f) If a blade is used in a circular saw over twenty (20) inches in diameter it shall be permanently marked with its operating speed. This blade shall not be operated at a speed other than that marked on blade.
- g) Always use a spreader when using a cross cut saw.
- h) When operating a circular saw, stand out of the line of a possible "kick-back" to avoid the danger of being stuck by small pieces that are frequently thrown.
- i) Never reach over a machine to get finished materials from the opposite side, to remove dust or wood particles, or to oil the machine while it is in operation.
- j) If an employee is using a joiner, do not allow either hand to pass over the knife.
- k) Place one hand on each side of the material.

**6.0 TRAINING PROGRAM**

SJFC shall provide training to all employees whose work is regulated by the standards covered in this procedure. The training shall ensure that each employee has acquired the knowledge and skills to identify and understand the necessary actions for the safe performance of their duties and will include:

- Overview of associated OSHA standards,
- Potential hazards of the tool(s) used in the workplace,

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- Conditions specific to their work area,
- Proper procedures for selecting, inspecting and utilizing the appropriate equipment and attachments.

The intent of this training is to ensure that employees understand the hazards associated with their specific workplaces and can demonstrate the actions necessary to maintain a safe workplace.

**7.0 PROGRAM EVALUATION**

The Safety Officer shall monitor this procedure to ensure that all elements of the program have been implemented and that employees are performing work operations in accordance with these requirements.

**APPENDIX A**

REVISION HISTORY

REVISION NO	ACTIONS	DATE	BY
000	Initial issue as a controlled document	2/12	mwk
001	Reviewed	10/15	AC
002			

# **Bloodborne Pathogens: Exposure Control Plan Safety Program 012**

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# **Bloodborne Pathogens: Exposure Control Plan Safety Program 012**

## **1.0 PURPOSE**

The purpose of this written program is to ensure that all employees with potential exposure to bloodborne pathogens and other body fluids understand the hazards associated with their exposure and the corrective actions necessary to protect them from injury and illness in accordance with 29 CFR 1910.1030.

This document serves as a policy for the development, implementation and maintenance of programs for (bloodborne pathogens) BBP, First Aid / CPR and AED requirements for SJFC.

There are no jobs with responsibilities that present inherent exposure to bloodborne pathogens at this facility. The jobs we've identified in this plan have collateral duties that may expose them to potentially infectious materials. This procedure pertains to all employees that have the potential for exposure to BBP's in work related situations.

The purpose of this Exposure Control Plan (ECP) is to outline the protective measures we will take to eliminate or minimize employee exposure incidents.

## **2.0 SCOPE**

This program applies to all SJFC employees, who through our exposure determination may incur occupational exposure to blood or other potentially infectious materials.

The extent of employee exposure shall be limited through the use of engineering controls and personal protective equipment. This document is designed to provide a formal procedure for identifying and controlling all potential BBP exposures.

Violation of established BBP procedures is a serious offense and failure to comply with this plan shall result in appropriate disciplinary action. Any violation of this procedure shall be reported immediately to the Safety Officer.

This ECP has been developed in accordance with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030.

## **3.0 RESPONSIBILITIES**

3.1 Plan Administrator: Fire and Life Safety Officer. Has overall responsibility for the maintaining the ECP. Any questions concerning the plan should be addressed to the Safety officer. They are responsible for the following:

3.1.1 Evaluating new tasks or procedures that may require the use of new safer medical devices;

3.1.2 Evaluating new safer medical devices available on the market;

3.1.3 Soliciting input from employees on the selection and use of safer medical devices.

3.1.4 Reviewing this plan on an ongoing basis, and/or at least annually.

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3.2 Only trained and authorized employees shall be allowed to respond to situations that pose an occupational risk of exposure.

### **4.0 EXPOSURE DETERMINATION**

SJFC has conducted an exposure determination for all job classifications that may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e. employees are considered to be exposed even if they wear personal protective equipment).

4.1 It has been determined that persons working in the following job classifications will have occupational exposure to hazards of bloodborne pathogens or other potentially infectious materials (OPIM):

<b>JOB CLASSIFICATION</b>	<b>TASKS with RISK</b>
First aid CPR trained Staff	CPR/First Aid response Cleaning blood spills Changing and dressing open wounds
Facilities/Grounds Crew	Cleaning
Supervisors	Assisting injured employees

These job classifications define the jobs which some of the employees have been assigned certain tasks where there is occupational exposure. Those employees in these job classifications not assigned and trained to perform these tasks safely to our ECP, shall not perform those tasks listed.

4.2 Employees who are covered by the Bloodborne Pathogen Standard will receive an explanation of the ECP during their initial training session. It shall also be reviewed in their annual refresher training. All employees have the opportunity to review this plan at any time during their work shifts by contacting the Safety Officer.

**Note:** Good Samaritan acts which result in exposure to blood or other potentially infectious materials as a result of assisting fellow employees such as giving CPR or first aid are not included in the Bloodborne Pathogen Standard. However, employees should be encouraged to offer post-exposure medical evaluation and follow-up.

### **5.0 EXPOSURE CONTROL PROCEDURES**

#### **5.1 Universal Precautions**

In all circumstances, Universal Precautions, as recommended or defined by the Centers for Disease Control (CDC) and/or the Occupational Safety and Health Administration (OSHA), will be observed in order to prevent contact with blood and other potentially infectious materials, unless they interfere with the proper delivery of healthcare or would create a significant risk to the personal safety of the worker.

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All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual. These precautions and practices include the following four areas:

- 5.1.1 Personal hygiene,
- 5.1.2 Engineering and work practice controls,
- 5.1.3 Personal protective equipment,
- 5.1.4 Equipment cleaning and disinfecting.

While the concept of “Universal Precaution” is generally accepted as prudent and effective, a more complete worker protection program is required to ensure maximum protection. The approach for the safe handling of infectious agents involves the use of a combination of strategies.

### **5.2 Engineering Controls**

Wherever possible, engineering controls will be utilized to reduce potential exposure. The Safety Officer will be responsible for inspection and maintenance of these controls. Records will be maintained for frequency of inspection and repairs.

5.2.1 Sharps Containers: Sharps containers shall be used to make sure contaminated “sharps” (needles, blades, etc) cannot injure other workers.

5.2.2 Labels: The Safety Officer shall ensure that biohazard labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious materials, and other containers used to store, transport or ship blood or other potentially infectious materials. The universal biohazard symbol shall be used. The label shall be fluorescent orange or orange red. Red bags or containers may be substituted for labels. However, regulated wastes must be handled in accordance with the rules and regulations of the organization having jurisdiction. Engineering and work practice controls will be used to eliminate and/or minimize potential exposure. When potential exposure remains, PPE shall be used;

5.2.3 Machine Guarding: The elimination of sharp, edges, pinch points, run-in points, and other standard practices to minimize worker injury is an ongoing and active process. Through the elimination of items that can cause physical injury, workers will be protected from unnecessary exposure to bloodborne pathogens.

5.2.4 Hand-washing Facilities: Hand-washing facilities are also available to the employees who incur exposure to blood or other potentially infectious materials. These facilities are readily accessible after incurring exposure. Hand-washing facilities are located throughout the facility.

5.2.5 For handling other regulated waste: SJFC will provide containers sufficient to contain regulated wastes, other than those regulated by the Bloodborne Pathogens rule, capable of resisting punctures and labeled as a biohazard (as appropriate). These are located in the Safety Officer’s office. The waste shall be placed in containers which are closeable, constructed to contain all contents and prevent

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leakage of fluids during handling, storage, transportation or shipping. The waste must be labeled or color coded and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

**Note:** Disposal of all regulated waste shall be in accordance with applicable United States, state and local regulations.

### 5.3 Work Practices Controls

5.3.1 Employees shall wash their hands immediately or as soon as possible after removal of gloves or other personal protective equipment and after hand contact with blood or other potentially infectious materials.

5.3.3 All personal protective equipment must be removed immediately upon leaving the work area or as soon as possible if overtly contaminated and placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

5.3.3 Used needles and other sharps may not be sheared, bent, broken, re-capped or re-sheathed by hand. Used needles may not be removed from disposable syringes. Recapping is permitted only if no other alternative is feasible and must be done using an approved mechanical device or one-handed technique.

5.3.4 Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses are prohibited in work areas where there is a potential for occupational exposure.

5.3.5 Food and drink shall not be stored in refrigerators, freezers, or cabinets where blood or other potentially infectious materials are stored or in areas of possible contamination.

5.3.6 All procedures involving blood or other potentially infectious materials will be done in a manner which minimized splashing, spraying, and aerosolization of these substances.

5.3.7 Mouth pipetting/suctioning is prohibited.

5.3.8 If conditions are such that hand washing facilities are not available, antiseptic hand cleaners are to be used. Because this is an interim measure, employees are to wash hands at the first available opportunity.

5.3.9 Exposed employees wash hands and exposed skin as soon as possible after exposure; and contaminated materials are properly disposed of as Red Bag Waste or medical waste or bio-hazard waste.

5.3.10 Supervisors shall ensure that after the removal of personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.

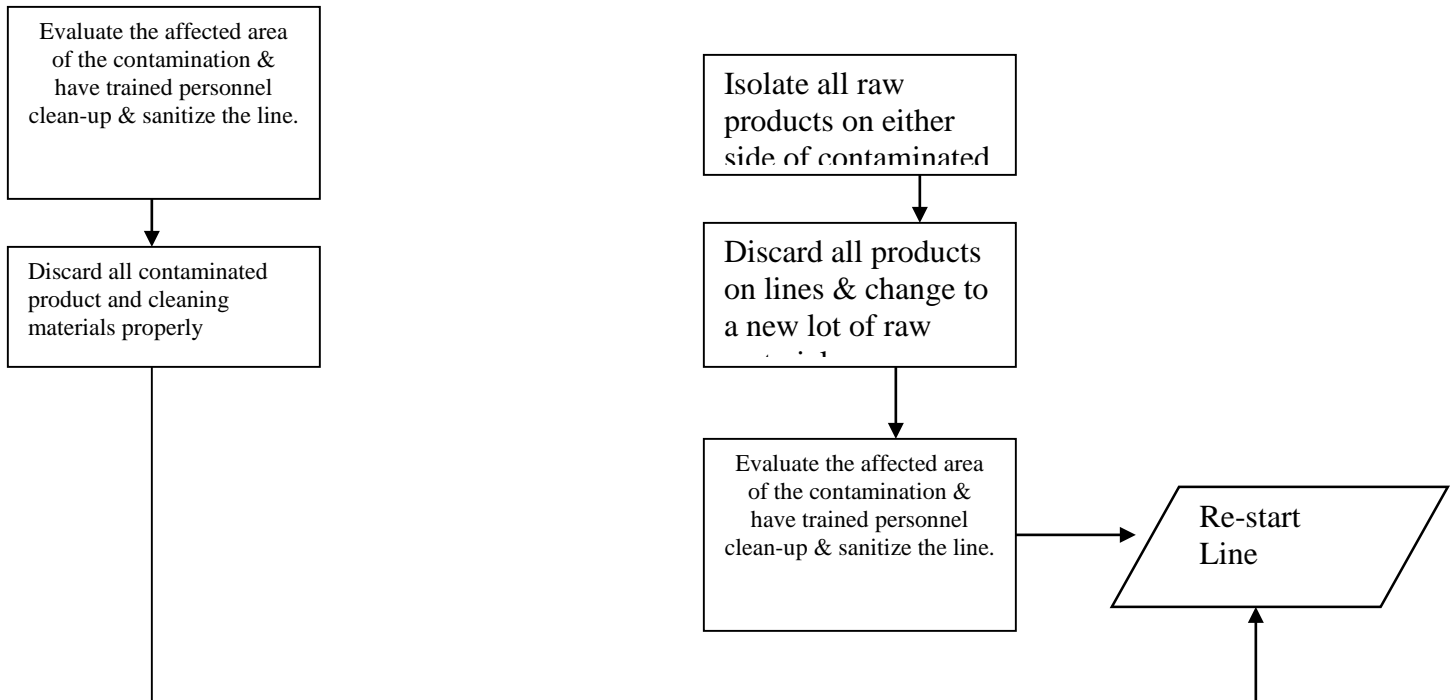
5.3.11 Supervisors shall ensure that if employees incur exposure to their skin or mucous membranes then those areas shall be washed or flushed with water as soon as feasible following contact.

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5.3.12 Decontamination will be accomplished by following the procedure for blood contamination clean-up flowchart in appendix E. This process describes the clean up activities to follow when any blood is found on the processing line blood detected in the production line or on the product. Only trained employees shall be allowed to undertake decontamination activities.



5.4 Personal Protective Equipment

5.4.1 All personal protective equipment used at this facility will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

5.4.2 The Safety Officer and Department Managers/Supervisors shall ensure that appropriate PPE in the appropriate sizes is readily accessible at the work site or is issued without cost to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

5.4.3 The Safety Officer and Department Managers/Supervisors shall ensure that all personal protective equipment will be cleaned, laundered, and disposed of by the employer at no cost to the employees. All repairs and replacements will be made by the employer at no cost to employees.

5.4.4 The Supervisor shall ensure that all garments which are penetrated by blood shall be removed immediately or as soon as feasible. All PPE will be removed prior to leaving the work area. When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

5.4.5 Gloves shall be worn where it is reasonably anticipated that employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes; when performing vascular access procedures and when handling or touching contaminated items or surfaces.

5.4.6 Disposable gloves used at this facility are not to be washed or decontaminated for re use and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised. Utility gloves may be decontaminated for re use provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured, or exhibits other signs of deterioration or when their ability to function as a barrier is compromised.

5.4.7 Additional PPE selections and such as use of headnets, smocks, foot covering and aprons maybe necessary to ensure employee safety in regards to bloodborne pathogens in certain workplace situations.

5.4.8 Laundry contaminated with blood or other potentially infectious materials will be handled as little as possible. Such laundry will be placed in appropriately marked "A biohazard", labeled, or color-coded red bags at the location where it was used. Such laundry will not be sorted or rinsed in the area of use.

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**6.0 HEPATITIS VACCINATION PROGRAM**

SJFC shall make available the Hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post exposure follow up to employees who have had an exposure incident.

6.1 The Safety Officer and Wellness Center shall ensure that all medical evaluations and procedures including the Hepatitis B vaccine and vaccination series and post exposure follow up, including prophylaxis are:

- 6.1.1 Made available at no cost to the employee;
- 6.1.2 Made available to the employee at a reasonable time and place;
- 6.1.3 Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and
- 6.1.4 Provided according to the recommendations of the U.S. Public Health Service.

6.2 Hepatitis B vaccination shall be made available after the employee has received the training in occupational exposure (see Information and Training) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete Hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicate for medical reasons.

6.3 Participation in a pre-screening program shall not be a prerequisite for receiving Hepatitis B vaccination.

6.4 If the employee initially declines Hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the vaccination shall then be made available.

6.5 All employees who decline the Hepatitis B vaccination offered shall sign the OSHA required waiver indicating their refusal. This waiver is good for one calendar year and must be re-signed by employees who choose to decline the vaccination at each refresher training.

6.6 If a routine booster dose of Hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster doses shall be made available.

6.7 Safety Officer and Wellness Center shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided with the following:

- 6.7.1 29 CFR 1910.1030;
- 6.7.2 A written description of the exposed employee's duties as they relate to the exposure incident;
- 6.7.3 All medical records relevant to the appropriate treatment of the employee including vaccination status.

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6.8 The Wellness Center shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

6.9 The healthcare professional's written opinion for HBV vaccination shall be limited to whether HBV vaccination is indicated for an employee, and if the employee has received such vaccination.

6.10 The healthcare professional's written opinion for post exposure follow up shall be limited to the following information:

6.10.1 A statement that the employee has been informed of the results of the evaluation; and

6.10.2 A statement that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

6.10.3 All other findings or diagnosis shall remain confidential and shall not be included in the written report.

### **7.0 EMPLOYEE COMMUNICATION and TRAINING:**

SJFC shall assure that all employees with the potential for exposure to blood or other infectious materials understand the associated hazards and are trained to minimize their exposure.

7.1 To accomplish these requirements, SJFC shall ensure that a competent person, who shall include but is not limited to the following, conducts training:

7.1.1 Ensure that signs and labels conform to 1910.1030;

7.1.2 Provide training at no cost to the employee;

7.1.3 Conduct training prior to any potential exposure;

7.1.4 Conduct training at least annually or as conditions change;

7.1.5 Conduct training in English and other languages as required

7.1.6 Provide warning signs and labels; and

7.1.7 Utilize current training aids.

7.2 Training Program: Employee training shall include:

7.2.1 A review of 1910.1030;

7.2.2 Discussions of bloodborne diseases;

7.2.3 Modes of transmission;

7.2.4 Review of the exposure control plan;

7.2.5 Recognition of tasks that may involve exposure;

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- 7.2.6 Procedures for handling contaminated waste;
- 7.2.7 Right to have the HEP B vaccination;
- 7.2.8 Procedure for recording an incident; and
- 7.2.9 Post exposure evaluation.
- 7.2.10 First Aid / CPR and AED

**8.0 EXPOSURE INCIDENT EVALUATIONS**

An exposure incident is specific eye, mouth, other mucous membrane, non-intact skin, or parental contact with blood or other potentially infectious materials that results from the performance of an employee’s duties. Should an employee be exposed to a potentially infectious material (via needle stick, splash, etc.) post-exposure evaluations will be provided.

8.1 Employees should immediately report exposure incidents or suspected exposure incidents to the Safety Officer and the Safety and Security Department. The exposed employee must be immediately directed to a licensed health care professional for testing and medical evaluation. This allows for timely medical evaluation and follow-up by a licensed health care professional as well as for timely testing of the source individual’s blood for HIV and HBV.

8.2 All exposure incidents shall be investigated and documented. The findings of the documented investigation must be sent with the exposed employee to the treating health care professional. The Safety Officer shall investigate and document the incident using the form in appendix C. When evaluating an exposure incident, thorough assessment and confidentiality are critical issues. All reports must be treated with strict confidence.

8.2.1 The written documentation shall include; the route of exposure and circumstances under which exposure occurred, HBV and HIV antibody status of the source patient(s) (if known), the employees involved, and consent to test the blood of all involved in the incident.

8.2.2 If the source patient can be determined, permission is obtained and, it is not prohibited by law, collection and testing of the source patient's blood to determine the presence of HIV or HBV infection shall be done as soon as possible after the exposure incident.

8.2.3 If consent is not obtained; SJFC must show that legally required consent could not be obtained.

8.2.4 If the source is known to be infectious for HBV or HIV, testing need not be repeated to determine the known infectivity.

8.2.5 All samples will be preserved for at least 90 days.

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8.3 Following a report of an exposure incident, the exposed employee shall immediately receive a confidential medical evaluation and follow up. The attending physician or licensed health care professional will be provided the following information:

- 8.3.1 A copy of the OSHA regulation "Bloodborne Pathogens" and its appendices;
- 8.3.2 A description of the affected employee's duties as they relate to the employee's occupational exposure;
- 8.3.3 Results of the source individual's blood testing, if available;
- 8.3.4 All employee medical records, including vaccination records, relevant to the treatment of the employee.

8.4 The attending physician will provide a written opinion to SJFC concerning the following:

- 8.4.1 Specific findings or diagnoses which are related to the employee's ability to receive the HBV vaccination.
- 8.4.2 A statement that the employee has been informed of the results of the medical evaluation and that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
- 8.4.3 Any other findings and diagnoses shall remain confidential.
- 8.4.4 For each evaluation under this section, the company will obtain and provide the employee with a copy of the attending physician's written opinion within 15 days of the completion of the evaluation.

### **9.0 SHARPS INJURY LOG**

A sharps injury log will be maintained at SJFC to record all percutaneous injuries from contaminated sharps. All entries on the sharps injury log will be recorded in a manner that maintains the confidentiality of the injured employee.

(NOTE: This requirement applies only to employers required to maintain a log of occupational injuries and illnesses under 29 CFR 1904. Maintenance of this sharps injury log is covered in 29 CFR 1904.6.)

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## APPENDIX A

### HEPATITIS B IMMUNIZATION

OSHA requires that those persons who may come in contact with blood or other potentially infectious materials be protected against Hepatitis B. As Supervisors, members of our emergency response team, and backups to the Human Resources Department, you become "those persons who may come in contact with bloodborne pathogens."

At the option of the individual employee, SJFC will provide Hepatitis B immunization for employees in these categories.

The immunization program is a series of three (3) vaccine injections, (one at a time) 0, 1 month and 6 months. Protection is excellent and side effects are minimal. Immunization is thought to last lifelong.

### HEPATITIS B IMMUNIZATION RECORD

Initial:

\_\_\_\_\_ I have reviewed and understand the policy and procedure regarding occupational exposure to Hepatitis B.

\_\_\_\_\_ I have reviewed and understand the medical literature on Hepatitis B vaccine.

I **have / have not** received a Hepatitis B. vaccine in the past. (Circle one)

If so:            Date received \_\_\_\_\_  
                      Record on file \_\_\_\_\_

I **do / do not** opt to receive the (3) series Hepatitis B vaccine. (Circle one)

\_\_\_\_\_  
Signature

<u>Time</u>	<u>Date Vaccinated:</u>	<u>Site of Injection:</u>	<u>Vaccinated By:</u>	<u>Manufacturer and Lot Number</u>
(0)	_____	_____	_____	_____
1 mo.	_____	_____	_____	_____
6 mo.	_____	_____	_____	_____

Follow Up Notation: \_\_\_\_\_

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Antibody test results (optional): Pre-vaccine \_\_\_\_\_  
Post-Vaccine \_\_\_\_\_

**APPENDIX B**

**DECLINATION STATEMENT**

I understand that due to my potential occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other infectious materials, I can receive the vaccination series at no charge to me. This declination statement is good until one year from the date below, and employees will re-sign this document each year during refresher training.

Employee Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

SJFC Representative: \_\_\_\_\_

Signature: \_\_\_\_\_

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**APPENDIX C:**

**EXPOSURE INCIDENT FORM**

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

LOCATION: \_\_\_\_\_ TAKEN BY: \_\_\_\_\_

POTENTIALLY INFECTIOUS MATERIALS TYPE:

\_\_\_\_\_  
\_\_\_\_\_

SOURCE:

\_\_\_\_\_  
\_\_\_\_\_

DESCRIPTION of INCIDENT:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EMPLOYEES INVOLVED:

\_\_\_\_\_  
\_\_\_\_\_

PPE UTILIZED:

\_\_\_\_\_

CORRECTIVE/CLEANUP ACTIONS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COMMENTS & RECOMMENDATIONS:

\_\_\_\_\_  
\_\_\_\_\_

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**APPENDIX D:**

**SHARPS INJURY LOG**

**FACILITY NAME:** \_\_\_\_\_

**CALENDAR YEAR:** \_\_\_\_\_

**LOG ADMINISTRATOR:** \_\_\_\_\_

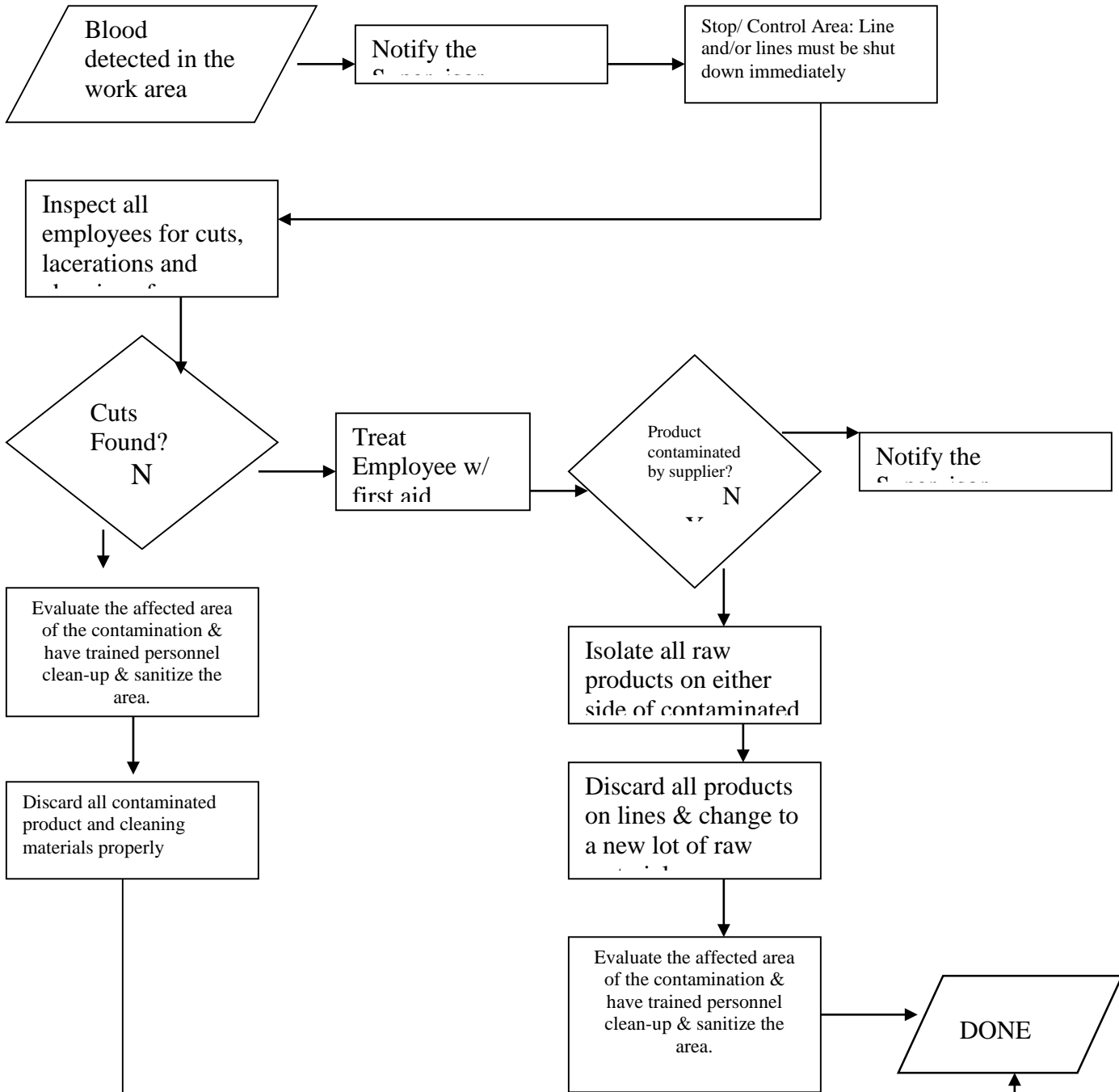
<b>DATE*</b>	<b>INCIDENT LOCATION (e.g. Department)</b>	<b>WORK AREA</b>	<b>INCIDENT DESCRIPTION (e.g. How incident occurred)</b>	<b>TYPE/BRAND DEVICE INVOLVED</b>

\*Optional Entry

**APPENDIX E:**

**PROCEDURE FOR BLOOD CONTAMINATION CLEAN-UP**

Purpose: This process describes the clean up activities to follow when any blood is found on the processing line Blood Detected on the lone or in the product



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**APPENDIX F:**

**REVISION HISTORY**

REVISION NO	ACTIONS	DATE	BY
000	Initial issue as a controlled document	6/11	mwk
001	Reviewed	10/15	AC
002			

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**1.0 PURPOSE**

This procedure establishes this company's requirements for a Forklift Safety Program in accordance with the requirements of 29 CFR 1910.178. It is used to ensure that employees who operate powered industrial trucks (forklifts) are properly and effectively trained to safely perform their work.

**2.0 SCOPE**

This Safety Policy covers all SJFC employees operating powered industrial trucks otherwise referred to as forklifts.

List of Permitted PIT operators:

- Al Hoffend, Grounds
- Keith Colf, Grounds
- Mike Stalker, Grounds
- Jim Gillette, Grounds
- Warren Putman, Grounds
- Patrick Curry, Grounds
- Mark Polimeni, Maintenance
- Lorenzo Morrison, Housekeeping
- David Johnson, Maintenance
- Jim Richter, Maintenance
- Robert Grimm, Facilities Services
- Michael Rolfe, Facilities Housekeeping
- Gary Kincade, Facilities Services
- Larry McCombs, Facilities Services
- Rick Dukes, Facilities Services
- John Scott, Facilities Services
- Brian Shaffer, Facilities Services
- Chad Gerhart, Grounds
- Shawn Kogler, Housekeeping

Training for the above operators was conducted on September 10, 2014. Retraining must occur within 3 years, by September 10, 2017.

PITs in operation at SJFC:

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- LP powered Toyota Forklift – load capacity 3,750lbs @ 189in height, 24" load center; 3,300lbs @ 189in height, 30" load center

PIT accessories available:

- Work Platform – blue – model WP-3737-FD and SP-175
  - Requires a minimum load capacity of 3,000lbs and 24" load center
  - Refer to owner’s manual for instructions on assembly and safe operation

**3.0 GENERAL**

**3.1 Selection of Operators**

SJFC will have the discretion to select operators who have the ability to be trained and have the physical capabilities to properly operate a powered industrial truck, i.e. good hearing, visibility and the ability to distinguish between colors, objects, etc.

**Driver Fitness Requirements:**

- a) Vision: If an employee is trained and certified to operate a forklift, and the motor vehicle license mandates they wear corrective glasses while driving a motor vehicle on the highway, SJFC also requires that they wear their glasses while operating forklifts.
- b) Hearing: A hearing test may be given to insure auditory acuity is within satisfactory range established by the federal DOT. The DOT guidelines read "A person is physically qualified to drive a motor vehicle if that person does not have an average hearing loss in the better ear greater than 40 decibels at 500Hz, 1000Hz and 2000Hz."

**3.2 Authorized Trainers**

SJFC may designate qualified internal trainers to conduct forklift training. A qualified designated person is one who has the requisite knowledge, training and experience to train powered industrial operators and judge their competency. The training and evaluation does not have to be conducted by a single individual, but can be done by several persons, provided each one is qualified. The trainee can only operate the forklift when directly supervised by such a person and when this would not endanger anyone. Qualified individuals may be found from the following:

- a) Existing SJFC Forklift Operators,
- b) Forklift Supplier and Servicing Companies,
- c) Other Training Companies Specializing in Safety or OSHA compliance.

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**4.0 TRAINING**

There are three programs for operator training at SJFC. Initial training is conducted for new operators. Refresher training is conducted for operators involved in incidents involving property damage or injury, near miss incidents, for misconduct, or if the supervisor observes an operator demonstrating a lack of knowledge in any area. Evaluation of all operators occurs every three years.

4.1 A qualified person shall conduct the training for initial, refresher and the three year evaluation and certify that the training was conducted with the name of the student, date and the name of the trainer.

4.2 Evaluations of each operator’s performance are required as part of the initial and refresher training and at least once every three years.

4.3 All training has three parts:

4.3.1 Formal instruction such as a lecture, discussion, interactive computer learning, videotape and or written material (can be taken anywhere);

4.3.2 Practical training which includes hands-on demonstrations by the trainer and exercises by the trainee (on the model of forklift the worker will use); and

4.3.3 An evaluation of the effectiveness of the training by observing the operator’s performance while doing actual work using the forklift. This evaluation must be repeated at least once every three years (must be at workplace).

**4.1 Initial Training**

Before an employee is permitted to operate a powered industrial truck, except for training purposes, the employee must successfully complete the required training including an evaluation. Training of forklift operators is carried out through both classroom and hands-on training methods.

4.1.1 Powered industrial truck operator trainees must be trained in the following topics unless the employer can demonstrate that some of the topics are not needed for safe operation. The truck-related topics include:

- a) All operating instructions, warnings and precautions for the types of truck the operator will be authorized to operate;
- b) Similarities to and differences from the automobile;
- c) Controls and instrumentation: location, what they do, and how they work;
- d) Plant operation and maintenance;
- e) Steering and maneuvering;
- f) Visibility (including restrictions due to loading);
- g) Fork and attachment adaptation, operation and limitations of their utilization;
- h) Vehicle capacity;
- i) Vehicle stability;
- j) Vehicle inspection and maintenance;

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- k) Refueling or charging, recharging batteries;
- l) Operating limitations; and (M) Any other operating instruction, warning or precaution listed in the operator's manual for the type vehicle that the employee is being trained to operate.

Workplace-related topics.

- a) Surface conditions where the vehicle will be operated;
- b) Composition of probable loads and load stability;
- c) Load manipulation, stacking and unstacking;
- d) Pedestrian traffic;
- e) Narrow aisles and other restricted places of operation;
- f) Operating in hazardous classified locations;
- g) Operating the truck on ramps and other sloped surfaces that could affect the stability of the vehicle;
- h) Operating the vehicle in closed environments and other areas where insufficient ventilation could cause a buildup of carbon monoxide or diesel exhaust; and
- i) Other unique or potentially hazardous environmental conditions that exist or may exist in the workplace.

**4.2 Previous Employer Training**

If an operator has received his or her initial operator training from a previous employer, SJFC will evaluate the new employee's previous training for adequacy and appropriateness. SJFC authorized trainers will determine if the employee can do the job safely. In all cases, SJFC will document its' evaluation (or that of the designated trainer) of the new employee's ability to safely operate the company's powered industrial trucks. SJFC may decide to provide additional training on site-specific or truck-specific matters.

**4.3 Refresher Training**

Refresher training is conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

- a) The operator has been observed to operate the vehicle in an unsafe manner;
- b) The operator has been involved in an accident or near-miss incident;
- c) The operator has received an evaluation that reveals that the operator is not operating the truck safely;
- d) The operator is assigned to drive a different type of truck; or

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e) A condition in the workplace changes in a manner that could affect safe operation of the truck.

4.3.1 All forklift operators going through this process will be re-assigned and unable to operator any powered industrial truck until the refresher training is completed.

4.3.2 Refresher training can only be conducted by SJFC’s authorized PIT trainers. Refresher training will consist of topics relevant to the incident. All training will be documented using the Refresher Training Form.

4.3.3 The operator will be allowed back in the work schedule and available to operate forklifts when they successfully complete the refresher training.

The training program should be based upon:

- a) The operator’s prior knowledge and skill
- b) The types of powered industrial trucks the operator will operate in the workplace
- c) The hazards present in the workplace
- d) The operator’s demonstrated ability to operate a powered industrial truck safely

**4.4 Three Year Evaluations**

An evaluation of each driver’s performance is conducted at least once every three years by the authorized trainer. The authorized trainer monitors each driver while the driver demonstrates specified requirements. Once the driver has completed the procedure, the trainer completes the “Operator Driving Evaluation” checklist and signs and dates it and forwards it for record retention. The evaluation of driver performance is completed for each type of forklift that a driver must use in their work. (Appendix C)

**5.0 SAFE FORKLIFT OPERATION**

- a) The speed limit on or about the company property is a walking speed.
- b) Seatbelts must be worn on all forklifts that have seatbelts installed.
- c) Fire aisles, access to stairways, and fire equipment shall be kept clear.
- d) Arms or legs may not be placed between the uprights of the mast or outside the running lines of the forklift.
- e) Forklifts shall not be driven up to anyone standing in front of a bench or other fixed object.
- f) No person shall be allowed to stand or pass under the elevated portion of any forklift, whether loaded or empty.
- g) Unauthorized personnel shall not be permitted to ride on powered industrial forklifts.
- h) When the operator is dismounted and within 25 ft. of the forklift still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.
- i) When the operator is dismounted and 25 ft. or more away from the vehicle with it still in his view, or whenever the operator leaves the vehicle and it is not in his view, power shall be shut off, the load

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engaging means shall be fully lowered, controls neutralized, and brakes set to prevent movement. Wheels shall be blocked if the forklift is parked on an incline.

- j) Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto.
- k) An overhead guard is used as protection against falling objects. An overhead guard is intended to offer protection from the impact of small packages, boxes, or bagged material, but not to withstand the impact of a falling capacity load.
- l) A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- m) Only approved industrial forklifts shall be used in hazardous locations.

**5.1 Traveling**

- a) Only authorized personnel shall operate industrial trucks.
- b) The operator shall not transport any passengers on their truck.
- c) The operator shall know the dimensions and clearance required for their truck.
- d) Horns shall be used for signaling in any intersection or corner.
- e) Pedestrians have the right-of-way sound horns to warn of your approach.
- f) The operator is responsible at all times for the safety of pedestrians.
- g) Do not run over loose objects on the floor. Stop the tow motor and pick up the object prior to proceeding.
- h) The reverse controls should never be used as a brake.
- i) When parking, the forks should be completely down on the floor.
- j) There shall be no fork trucks operating in areas normally used for exit during shift changes.
- k) Never operate a forklift with any part of your body protruding the confines of the operator compartment or roll-over protection.
- l) Fast driving, stunt driving and horseplay will not be permitted.
- m) Do not drive up to anyone standing in front of a building, column, bench, rack or other fixed object.
- n) Travel with the forks lowered as far as possible and tilted back to retain a load.
- o) No one will be allowed to walk or stand under elevated loads during assembly or servicing. Jack posts must be used to prevent the fork's jack post from being blocked. Crimping must be used to prevent the forks from descending.
- p) When driving over a dock plate or into a trailer, maintain a safe distance from the edge of the dock and assure that the trailer's wheels are chocked and the brake applied.

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- q) Do not locate pallets or a load in a marked aisle blocking a regular fire exit in front of the fire extinguishers, electrical panels or anywhere where it might constitute a safety hazard.
- r) Report all incidences and accidents to your supervisor so that corrective action can be taken.
- s) No fork truck is permitted in any of the paint spraying areas.
- t) Observe all traffic regulations, including authorized plant speed limits
- u) Keep the forklift under control at all times.
- v) Under all travel conditions, operate the forklift at a speed that will permit it to be brought to a stop in a safe manner.
- w) Slow down when driving on wet, icy and / or slippery floors.
- x) Slow down and sound the horn at cross aisles and other locations where vision is obstructed.
- y) Look in the direction of, and keep a clear view of, the path of travel.
- z) Do not pass other forklifts traveling in the same direction at intersections, blind spots, or other potentially dangerous locations. Maintain a distance of approximately three forklift lengths from the forklift ahead when following another forklift.
- aa) If the load being carried obstructs forward view, travel with the load trailing.
- bb) Ascended or descended grades slowly.
- cc) When ascending or descending grades in excess of 10 percent, drive loaded forklifts with the load upgrade.
- dd) On all grades, tilt the load and load engaging means back and only raise them as far as necessary to clear the road surface.
- ee) Stunt driving and horseplay are not permitted.
- ff) Secure dockboard or bridgeplates before they are driven over.
- gg) Drive over a dockboard or a bridgeplate carefully and slowly.
- hh) Do not exceed the rated capacity of dockboards or bridgeplates.
- ii) Approach the elevators slowly, and then entered squarely after the elevator platform is properly leveled. Once on the elevator, the controls shall be neutralized, power shut off, and the brakes set. The chain must be engaged at the end of the elevator platform and at the entrance to the platform.
- jj) Maintain a safe distance from the edge of ramps or platforms while on the elevated docks, platforms or freight cars.
- kk) Do not use forklifts used for opening or closing freight doors.
- ll) Avoid running over loose objects on the facility floor.
- mm) While negotiating turns, reduce speed to a safe level by turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, turn the hand steering wheel at a moderate, even rate.

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- nn) Cross railroad tracks diagonally.
- oo) Do not park closer than 8 feet from the edge of the railroad tracks.

**5.2 Loading**

- a) Ensure that the load is stable and safely arranged. Exercise caution when handling off-center loads which cannot be centered.
- b) Do not exceed the rated capacity of the forklift.
- c) Operate forklifts equipped with attachments as partially loaded forklifts when not handling a load. The attachment changes the unattached center of gravity.
- d) Insert the forks or lifting device as far as possible under the load;
- e) Tilt the mast backward to stabilize the load.
- f) Use care when tilting the load forward or backward, particularly when working with loads in the high tiers of the racks.
- g) Tilting forward with forks elevated is prohibited except to pick up a load.
- h) Do not tilt an elevated load forward except when the load is in a deposit position over a rack or stack.
- i) When stacking or placing a tote in a rack, use only enough backward tilt to stabilize the load.

**5.3 Trucks and railroad cars**

- a) Verify that the driver of a highway truck has set the brakes and placed wheel chocks under the rear wheels prior to entering the truck with a forklift. This will prevent the trucks from rolling while they are boarded with forklifts.
- b) Use the wheel stops as a positive protection to prevent railroad cars from moving during loading or unloading operations.
- c) Do not enter railroad cars unless wheel stops are in places that prevent the railroad car from being moved while dockboards or bridge plates are in position.
- d) Fixed jacks may be necessary to support a semi-trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.

**5.4 Inspection and Service**

- a) Before the start of each shift, a forklift daily inspection must be completed by the forklift driver before operating the forklift away from the inspection area. An inspection list is provided in appendix D. If the operator discovers any problem with a powered industrial truck upon inspection, they should be reporting this to their supervisor immediately.

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- b) Forklifts exhibiting visual or operation deficiencies must be tagged out and taken out of service pending evaluation by the repair service contractor or authorized maintenance personnel.
- c) When the temperature of any part of any forklift is found to be in excess of its normal operating temperature, thus creating a hazardous condition, remove the vehicle from service. Do not return it to service until the cause for such overheating has been eliminated.
- d) Keep the forklifts in a clean condition, free of lint, excess oil, and grease. Use noncombustible or high flash point (at or above 100 deg. F.) solvents for cleaning forklifts.
- e) Preventive maintenance schedules established by the service contractor must be followed.
- f) Repairs to the forklift fuel and ignition systems forklifts which involve fire hazards shall be conducted only in locations designated for such repairs.
- g) All parts of any such industrial forklift requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- h) Forklifts shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided or authorized by the manufacturer or by the elimination of any parts.
- i) Additional counter weighting of fork forklifts shall not be done unless approved by the forklift manufacturer.
- j) No repairs shall be made in Class I, II, and III locations.

**6.0 PROGRAM EVALUATION**

The safety coordinator shall monitor this procedure to ensure that all elements of the program have been implemented and that employees, contractors and others working for or on behalf of the company are performing work operations in accordance with these procedures.

**7.0 RECORD-KEEPING**

All training shall be documented.

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Appendix A – Lesson Plan

**Powered Industrial Truck (Pit) Operator Training Program Outline\***

This PIT operator training program outline has been designed to assist designated, qualified trainers in providing sufficient operator training, as required by the OSHA powered industrial truck standard. The entire training program must combine both formal and practical training. Therefore, it is suggested that the trainer stagger classroom time with practical application on a powered industrial truck in a common setting. To keep your student's interest and maximize learning, you may also want to incorporate some "real-world" examples of forklift fatalities, as provided in the next section of this guide.

**1. Introduction**

- a. Overview of the program
- b. Goal of the program: the types of vehicles used in the workplace, and the hazards of the workplace.
- c. Course will utilize video, group discussion and hands-on practice. All operators must obtain the knowledge and skills needed to do their job correctly and safely.

**2. Types, features and physics**

- a. Familiarize each operator with the basic types and functions of powered industrial trucks.
- b. Develop an understanding of the information shown on a data plate.
- c. Understand the critical truck measurements that affect safety.
- d. Understand the forces that cause tipovers, and the truck design considerations and safety ratings that help prevent them, including the "stability triangle."

**3. Inspecting the vehicle**

- a. Understand the purpose and importance of preoperational checkouts.
- b. Provide a basic understanding of areas covered during a preoperational checkout.
- c. Familiarize each operator with a checklist for preoperational checkouts and what to do if a problem is discovered.

**4. Driving the truck**

- a. Understand the elements of safe movement of a powered industrial truck.
- b. Understand the differences between an automobile and a powered industrial truck.
- c. Recognize the safety hazards associated with operating a powered industrial truck.

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**5. Load handling**

- a. Understand the elements of load lifting safety.
- b. Understand the safe operating procedures for raising and lowering loads in aisles.

**6. LPG for lift trucks**

- a. Discuss LPG and its properties.
- b. Understand the elements and procedures of safely refueling internal combustion vehicles.
- c. Describe tank components: service valve, surge valve, relief valve, etc.
- d. Discuss related safety issues.

**7. Battery and charging**

- a. Understand the elements and procedures of safely changing and charging batteries.
- b. Discuss filling procedures and maintenance.
- c. Discuss related safety issues.

**8. Safety concerns**

- a. Review/reinforce potential of serious injury
- b. Review/reinforce safety procedures in your facility.

**9. Specific truck and workplace training/hands-on**

- a. Review features of specific PITs to be operated.
- b. Review operating procedures of specific PITs to be operated.
- c. Review safety concerns of specific PITs to be operated.
- d. Review workplace conditions and safety concerns of areas where PITs will be operated.
- e. Learn/practice actual operation of specific PITs to be operated and specific workplace conditions where PITs will be operated.
- f. Demonstrate proficiency performing the powered industrial truck operator duties specific to the trainee's position and workplace conditions.

**10. Certification of completion of the course**

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Appendix B - Forklift Refresher Training Form

Name:

Date

Instructor:

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Description of Incident:

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Section A - Classroom

Topic	Re-Fresher Training Required	Pass / Fail
Introduction – Forklift Operations		
Safety Rules – Traveling		
<b>General Information</b> Knowing the Lift truck Stability & Center of Gravity Capacity (weight & Load Center)		
<b>Inspection Before Operation</b> Checks with engine stopped Starting Procedures Checks with Engine Running		
<b>Operating Technique</b> Basic Operating Procedures Driving & Directional Changes Inching Steering (turning) Moving Loads Attachments Stopping Parking		
Battery Handling & Charging Procedures		

Appendix C - Performance Test for Forklift Operators

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Employee \_\_\_\_\_ Date \_\_\_\_\_

✓	Class	Type
	Class 1	Electric Motor, Rider, Counter-Balanced Trucks (solid and pneumatic tires)
	Class 2	Electric Motor Narrow Aisle Trucks (solid tires)
	Class 3	Electric Motor Hand Trucks or Hand/Rider Trucks (solid tires)
	Class 4	Internal Combustion Engine Trucks (solid tires)
	Class 5	Internal Combustion Engine Trucks (pneumatic tires)
	Class 6	Electric and Internal Combustion Engine Tractors (solid and pneumatic tires). No forklifts in this class.
	Class 7	Rough Terrain Forklift Trucks (pneumatic tires)

The topics listed in the table below are covered during the forklift operator training. If a specific topic does not apply to the forklift in the employer's workplace, covering it is optional.

✓	Topics related to powered industrial trucks	✓	Topics related to your workplace
	Operating instructions		Surface conditions where the PIT will be operated
	Warnings and precautions for the types of PIT the operator will be authorized to operate		Composition of loads to be carried and load stability
	Differences between the PIT and the automobile		Load manipulation, stacking, and un-stacking
	PIT controls and instrumentation: Where they are located, what they do, and how they work		Pedestrian traffic in areas where the PIT will be operated
	Engine or motor operation		Narrow aisles and other restricted places where the PIT will be operated
	Steering and maneuvering		Use of door opening and closing devices
	Visibility (including restrictions due to loading)		Hazardous (classified) locations where the PIT will be operated
	Fork and attachment adaptation, operation, and use limitations		Ramps and other sloped surfaces that could affect the PITs stability
	PIT capacity		Closed environments and other areas where insufficient ventilation or poor PIT maintenance could cause a buildup of carbon monoxide or diesel exhaust
	PIT stability		Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation
	Any PIT inspection and maintenance that the operator will be required to perform		
	Refueling		
	Charging and recharging of batteries		
	Operating limitations		
	Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of PIT that the employee is being trained to operate		

**Evaluation**

Operation	+ / -	Comments
1. Shows familiarity with truck controls.		
2. Gave proper signals when turning.		
3. Slowed down at intersections.		
4. Sounded horn at intersections.		
5. Obeyed signs.		
6. Kept a clear view of direction of travel.		
7. Turned corners correctly; was aware of rear end swing.		
8. Yielded to pedestrians.		
9. Drove under control & within proper traffic aisles.		
10. Approached load properly.		
11. Lifted load properly.		
12. Maneuvered properly.		
13. Traveled with load at proper height.		
14. Lowered load smoothly/slowly.		
15. Stops smoothly/completely.		
16. Load balanced properly.		
17. Forks under load all the way.		
18. Carried parts/stock in approved containers.		
19. Checked bridgeplates/ramps.		
20. Placed loads within marked area.		
21. Stacked loads evenly and neatly.		
22. Drove backward when required.		
23. Checked load weights.		
24. Placed forks on the floor when parked, controls neutralized, brake on set, power off.		
25. Followed proper instructions for maintenance—checked both at beginning and end.		
<b>Total Rating</b>		

Evaluator \_\_\_\_\_ Date \_\_\_\_\_

**Appendix – D Daily Checklists for Powered Industrial Trucks**

The checklists are intended to assist in providing training on OSHA's revised powered industrial truck operator standards.

P/F	Inspection Item	Initials
	<b>Overhead Guard</b> —Are there broken welds, missing bolts or damaged areas?	
	<b>Hydraulic Cylinders</b> —Is there leakage or damage on the lift, tilt or attachment functions of the cylinders?	
	<b>Mast Assembly</b> —Are there broken welds, cracked or bent areas, or worn or missing stops?	
	<b>Lift Chains and Rollers</b> <ul style="list-style-type: none"> <li>• Is there wear or damage or kinks, signs of rust, or any sign that lubrication is required?</li> <li>• Is there squeaking?</li> <li>• Are they cracked or bent, worn, or mismatched?</li> <li>• Is there excessive oil or water on the forks?</li> </ul>	
	<b>Tires</b> —What do the tires look like? <ul style="list-style-type: none"> <li>• Are there large cuts that go around the circumference of the tire?</li> <li>• Are there large pieces of rubber missing or separated from the rim?</li> <li>• Are there missing lugs?</li> <li>• Is there bond separation that may cause slippage?</li> </ul>	
	<b>Battery Check</b> <ul style="list-style-type: none"> <li>• Are the cell caps and terminal covers in place?</li> <li>• Are the cables missing insulation?</li> </ul>	
	<b>Hydraulic Fluid</b> —Check level.	
	<b>Gauges</b> —Are they all properly working?	
	<b>Steering</b> <ul style="list-style-type: none"> <li>• Is there excessive free play? No more than 2"</li> <li>• If power steering, is the pump working?</li> </ul>	
	<b>Brakes</b> <ul style="list-style-type: none"> <li>• If pedal goes all the way to the floor when you apply the service brake, that is the first indicator that the brakes are bad. Brakes should work in reverse, also.</li> <li>• Does the parking brake work? The truck should not be capable of movement when the parking brake is engaged.</li> </ul>	
	<b>Lights</b> —If equipped with lights, are they working properly?	
	<b>Horn</b> —Does the horn work?	
	<b>Safety Seat</b> —If the truck is equipped with a safety seat, is it working?	
	<b>Propane Tank</b> —Is the tank guard bracket properly positioned and locked down?	
	<b>Propane Hose</b> <ul style="list-style-type: none"> <li>• Is it damaged? It should not be frayed, pinched, kinked or bound in any way.</li> <li>• Is the connector threaded on squarely and tightly?</li> </ul> <b>Propane Odor</b> —If you detect the presence of propane gas odor, turn off the tank valve and report the problem.	
	<b>Engine Oil</b> —Check levels.	

	<p><b>Engine Coolant</b></p> <ul style="list-style-type: none"> <li>• Visually check the level. Note: Never remove the radiator cap to check the coolant level when the engine is running or while the engine is hot. Stand to the side and turn your face away. Always use a glove or rag to protect your hand.</li> </ul>	
	<p><b>Transmission Fluid</b>—Check levels.</p>	
	<p><b>Windshield Wipers</b>—Do they work properly?</p>	
	<p><b>Seat Belts</b>—Do they work?</p>	
	<p><b>Safety Door</b> (found on stand up rider models)—Is it in place?</p>	
	<p><b>Safety Switch</b> (found on stand up riding tow tractors)—Is it working?</p>	
	<p><b>Hand guards</b> (found on stand up riding tow tractors, walking pallet trucks, walking ranstackers)—Are they in place?</p>	
	<p><b>Tow Hook</b></p> <ul style="list-style-type: none"> <li>• Does it engage and release smoothly?</li> <li>• Does the safety catch work properly?</li> </ul>	
	<p><b>Load Handling Attachments</b></p> <ul style="list-style-type: none"> <li>• Is there hesitation when hoisting or lowering the forks, when using the forward or backward tilt, or the lateral travel on the side shift?</li> <li>• Is there excessive oil on the cylinders?</li> </ul>	
	<p><b>Work Platform</b> (found on order pickers)—Does the platform raise and lower smoothly?</p>	
	<p><b>Gripper Jaws</b> (found on order pickers)—Do the jaws open and close quickly and smoothly?</p>	
	<p><b>Control Lever</b>—Does the lever operate properly?</p>	
	<p><b>Safety Interlock</b> (found on order pickers)—If the gate is open, does the vehicle run?</p>	

APPENDIX E

REVISION HISTORY

REVISION NO	ACTIONS	DATE	BY
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002			

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*SECTION DESCRIPTION*

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- 5.0 GENERAL REQUIREMENTS
- 6.0 INSPECTIONS
- 7.0 PERSONNEL TRAINING

- Appendices**  
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**1.0 PURPOSE:**

One of the preventable hazards of construction work is the danger of trench cave-ins. Collapse from failure to protect workers in trenches results in trenching accidents and fatalities. Other hazards associated with trenches include contact with numerous underground utilities, hazardous atmospheres, water accumulation, and collapse of adjacent structures. For these reasons, we have written Trenching & Excavation Procedures for both our occasional excavation workers. It is the policy at SJFC to permit only trained and authorized personnel to create or work in excavations. This document describes the methods SJFC will utilize to ensure that employees, contractors, visitors and others working for or on behalf of the company will be fully protected when working in a trench or excavation.

**2.0 SCOPE:**

This plan has been drafted to meet the requirements for excavation and trenching operations as defined by the Occupational Safety and Health Administration (OSHA) Excavation and Trenching standard, Title 29 of the Code of Federal Regulation (CFR) 1926, Subpart P.

The policy applies to all open excavations made in the earth's surface, including trenches. Strict compliance with all sections of the standard will prevent or greatly reduce the risk of cave-ins as well as other excavation-related accidents.

**3.0 RESPONSIBILITIES:**

The safety coordinator is responsible for developing and maintaining the written Trenching & Excavation Procedures. Our Trenching & Excavation Procedures are administered under the direction of our competent person(s), someone capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. The following employee(s) is considered a competent person(s) for SJFC:

Alphonse Camp

3.1 Each supervisor will be responsible for implementing, training and enforcing this Trenching & Excavation Program.

3.2 Employees are responsible for following safe work practices when working in and around trenches and excavations. Some specific rules to help reduce the risk of on-the-job injuries include:

- 3.2.1 Remove or minimize all surface obstacles at the worksite that may create a hazard,
- 3.2.2 Wear warning vests or other reflective or high-visibility garments that you provide when they are exposed to vehicular traffic.
- 3.2.3 Wear personal protective equipment correctly.
- 3.2.4 Operate equipment only if they have been trained properly in its use and alerted to its potential hazards.

3.3 Any violation of this procedure shall be reported immediately to the Safety Coordinator. Violation of established procedures is a serious offense and failure to comply with this procedure shall result in appropriate disciplinary action.

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**4.0 HAZARD EVALUTION PROCEDURES**

Before anyone at SJFC begins excavating, we follow the steps below:

4.1 Preplanning. Approach each new job with utmost care and thorough preparation. Do not wait until after the work has started to consider specific site conditions. Specific site conditions include but are not limited to:

- Traffic,
- Proximity and physical conditions of nearby structures,
- Soil,
- Surface and ground water,
- Location of the water table,
- Overhead and underground utilities,
- Weather.

Determine these and other conditions through jobsite studies, observations, test borings for soil type or conditions, and consultations with local officials and utility companies. This information will help you determine the amount, kind, and cost of safety equipment you will need to perform the work in the safest manner possible.

4.2 Before starting work determine the approximate location of utility installations which include; sewer, telephone, fuel, electric, and water lines; or any other underground installations.

4.2.1 Contact the utility companies involved to inform them of the proposed work within established or customary local response times.

4.2.2 Ask the utility companies to find the exact location of underground installations. If they cannot respond within 24 hours (unless the period required by state or local law is longer) or cannot find the exact location of the utility installations, you may proceed with caution.

4.2.3 If your excavation work exposes underground installations, protect, properly support, or remove them. Do not remove electrical utilities.

4.3 Protective support systems shall be used in all excavations to protect SJFC employees from cave-ins during the work. The protective system must be designed in accordance with OSHA standards. Protective system options include proper sloping or benching of the sides of the excavation; supporting the sides of the excavation with timber shoring or aluminum hydraulic shoring; or placing a shield between the side of the excavation and the work area. SJFC has the following standard operating procedures regarding protective support systems for excavations, in accordance with safe practices and procedures and OSHA excavation regulations:

4.3.1 If the excavation is made entirely of stable rock, then no protective system is necessary or used.

4.3.2 If the excavation is less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in, then no protective system is necessary or used.

4.3.3 If the excavation is less than or equal to 20 feet in depth, then a protective system must be used

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and inspected at least daily and as conditions warrant inspection by a competent person.

4.3.4 All protective systems for excavations over 20 feet in depth must be designed by a professional engineer.

4.4 Sloping. Slope the sides to an angle not steeper than 1-1/2:1; for example, for every foot of depth, the trench must be excavated back 1-1/2 feet. All simple slope excavations 20 feet (6.11 meters) or less deep should have a maximum allowable slope of 1-1/2:1. These slopes must be excavated to form configurations similar to those for Type C soil, as described in Appendix B of the OSHA standard. A slope of this gradation or less is safe for any type of soil.

4.4.1 Provide support systems such as shoring, bracing, or underpinning to ensure that adjacent structures such as buildings, walls, sidewalks, or pavements remain stable. Excavations under sidewalks and pavements are prohibited unless you provide an appropriately designed support system or another effective means of support.

4.4.2 The competent person chooses the best option for sloping for the job at hand

4.4.3 Benching. When benching is used to protect against cave-ins, bench in 3 foot increments vertically and 4 foot shelves horizontally.

**5.0 GENERAL REQUIREMENTS**

In addition to cave-ins and related hazards, workers involved in excavation work also are exposed to hazards involving falls, falling loads, and mobile equipment. To protect employees from these hazards, we require the following precautions:

5.1 Keep materials or equipment that might fall or roll into an excavation at least 2 feet (.61 meters) from the edge of excavations, or use retaining devices, or both.

5.2 Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs to alert operators to the edge of an excavation. If possible, keep the grade away from the excavation.

5.3 Provide scaling to remove loose rock or soil, or install protective barricades and other equivalent protection to protect employees against falling rock, soil, or materials.

5.4 Prohibit employees from working on faces of sloped or benched excavations at levels above other employees unless you provide the employees at the lower levels adequate protection from the hazard of falling, rolling, or sliding material or equipment.

5.5 Prohibit employees from standing or working under loads being handled by lifting or digging equipment. Require workers to stand away from vehicles being loaded or unloaded to protect them from being struck by any spillage or falling materials. You may permit operators to remain inside cabs of vehicles if they provide adequate protection from falling loads during loading and unloading operations.

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5.6 Employees are prohibited from working without adequate protection in excavations where water has accumulated or is accumulating. If water removal equipment is used to control or prevent water accumulation, a competent person must monitor the equipment and its operation to ensure proper use. OSHA standards also require the use of diversion ditches, dikes, or other suitable means to prevent surface water from entering an excavation and to provide adequate drainage of the adjacent area. A competent person must inspect excavations subject to runoffs from heavy rains.

5.7 A competent person must test any excavation deeper than 4 feet (1.22 meters) or where an oxygen deficiency or a hazardous atmosphere is present or could reasonably be expected, such as a landfill or where hazardous substances are stored nearby, before an employee enters it. If there are any hazardous conditions, you must provide controls to allow for safe entry into the trench such as ventilation or proper respiratory protection.

5.7.1 Regularly test all controls used to reduce atmospheric contaminants to acceptable levels. If unhealthful atmospheric conditions exist or develop in an excavation, provide emergency rescue equipment such as a breathing apparatus, safety harness and line, and basket stretcher and ensure that it is readily available.

5.8 Safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet (1.22 meters) or deeper. These devices must be located in the excavation within 25 feet (7.62 meters) of all workers. Any structural ramps you use in your operation must be designed by a competent person if they are used for employee access or egress, or by a competent person qualified in structural design if they are used for vehicles. Also, structural members used for ramps or runways must be uniform in thickness and joined in a manner to prevent tripping or displacement.

## 6.0 INSPECTIONS

The competent person must inspect an excavation and the areas around it daily for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions.

6.1 Inspections also are required after natural events such as heavy rains or manmade events such as blasting that may increase the potential for hazards.

6.2 If the inspector finds any unsafe conditions during any inspection, you must clear employees from the hazardous area until you take safety precautions to correct the unsafe situation.

6.3 All inspections shall be documented by the competent person.

## 7.0 PERSONNEL TRAINING

7.1 All employees of SJFC who work with or around in support of trenching and excavation work will receive initial training on the hazards and the St. John Fisher College policies standards.

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7.2 All employees shall be given additional, specific training by supervisors when a new material or equipment is brought into their work area or when they are transferred to a different work assignment that involves trenching and excavation work.

7.3 The Safety Coordinator will review the employee training program to ensure its effectiveness.

7.4 The training plan will emphasize the following items:

7.4.1 A summary of the standard and this written program.

7.4.2 Hazards involved with trenching and excavations.

7.4.3 Procedures to protect against hazards (i.e. personal protective equipment required, proper use and maintenance; work practices or methods)

7.5 Attendance sheets for employee Trenching and Excavation Training shall be maintained in the safety binder and Human Resources.

**APPENDIX A**

**REVISION HISTORY**

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000	Initial issue as a controlled document	8/12	mwk
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<b>4.0</b>	<b>GENERAL REQUIREMENTS</b>
<b>5.0</b>	<b>HAZARD EVALUTION PROCEDURES</b>
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**Appendices**

A) Definitions

B) Revision History

Accident Investigation Report (see SP014 Reference Material, Forms and Definitions)

Spill Report Form (see SP014 Reference Material, Forms and Definitions)

**1.0 PURPOSE**

To ensure that asbestos exposures of all SJF College personnel, students, guests, visitors and contract personnel are minimized by assuring that all activities that may impact, disturb or dislodge asbestos containing materials and all building conditions that could allow exposure to asbestos fibers are conducted and abated, respectively, in a manner consistent with regulatory requirements and established safety practices.

**2.0 SCOPE**

This policy and the associated is established to address the health concerns posed by exposure to asbestos in SJF College owned and/or occupied buildings.

**3.0 DUTIES**

*3.1 Supervision:* Supervision will be responsible for protecting the employees from potential exposure to asbestos. This will be accomplished by having full knowledge of the workplace regarding existence or potential existence of asbestos in floor tiles, insulation, coatings, roofing materials, siding shingles, sealants, pipe insulation, etc.. This knowledge will be gained through the building maintenance history, engineering reports, history of specific buildings (through construction methods, age, materials,....), type of work being completed, past or current abatement work, survey's, experience, and training.

3.1.1 Supervision shall take the necessary steps and precautions as outlined within this program to fully protect the employee. These methods will include verification of effective engineering controls, use of personal protective equipment and proper training of the employee.

3.1.2 When working adjacent to a asbestos regulated area on a multi-employer work-site the supervisor shall take steps on a daily basis to ascertain the integrity of any enclosures and/or the effectiveness of the control method relied on by the primary asbestos contractor to assure that asbestos fibers do not migrate to adjacent areas.

*3.2 Employee:* When working near a project site location that has the potential to have airborne asbestos fibers, the employee shall abide by all the regulations as included in this program and as directed by their responsible supervision. The employee shall be properly trained in all aspects of this program.

**4.0 HAZARD EVALUTION PROCEDURES**

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4.1 Prior to the start of any renovation and/or demolition project, excluding small operations and maintenance activities, your supervisor or Director of Facilities Services and the College Fire & Life Safety Officer must be contacted to coordinate a survey for suspect and known asbestos containing materials in the project area.

4.2 The Fire & Life Safety Officer is responsible for checking to determine if the material has had a survey on record from an environmental testing laboratory.

4.3 If a survey has not been done, the Director of Facilities Services in coordination with Fire & Life Safety Officer will notify an external laboratory to have the material tested.

4.4 Once testing results are received and results indicate ACM, the Director of Facilities Services in coordination with Fire & Life Safety Officer will assess the situation, arrange for the appropriate corrective remediation actions with an 'external' environmental abatement company, and notify the regulatory agencies as necessary.

4.5 No work is to be done in the area that contains asbestos, until the material has been tested and or removed and the area has been cleared as a negative exposure assessment by the Director of Facilities Services and the College Fire & Life Safety Office.

**5.0 GENERAL REQUIREMENTS**

5.1 If, in the process of completing the required work on a project, ACM and/or PACM is discovered, the employee shall inform the supervisor of the finding immediately. The supervisor shall verify the finding and convey the information concerning the presence, location and quantity of such newly discovered ACM and/or PACM to the Director of Facilities Services within 24 hours of the discovery. All work in this area shall be discontinued and all employees removed until the area is approved for re-entry through abatement and the designation that the PACM does not contain asbestos.

5.2 Any suspect asbestos containing material identified in the project area that may be impacted or disturbed must be either sampled and tested to determine its asbestos content following established protocols or assumed to contain asbestos and managed as an asbestos containing material. Small operations and maintenance activities do not need to be coordinated through this procedure.

5.3 Any materials that are known and/or identified to be ACM and will be impacted or disturbed as a result of renovation or demolition activity must be properly abated in accordance with SJF College specifications; New York State Regulations Governing the Control of Asbestos Containing Materials; Environmental Protection Agency Regulations; and OSHA Asbestos Standards.

5.4 SJF College employees will not take part in any asbestos abatement projects unless they have been properly trained in compliance with New York State Regulations Governing the Control of Asbestos Containing Materials; Environmental Protection Agency Regulations; and OSHA Asbestos Standards.

5.5 Any SJF College employee or sub-contractor that identifies any damaged, suspect or known asbestos containing materials during the course of normal routine activities shall

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notify the Director of Facilities Services and the College Fire & Life Safety Office immediately upon the discovery.

5.6 Asbestos consultants that may be contracted by the SJF College to prepare asbestos abatement specifications, conduct facility surveys for ACM, monitor asbestos abatement projects and analyze bulk and air asbestos samples shall be pre-approved by the Director of Facilities Services.

**6.0 PERSONNEL TRAINING**

Facilities, Grounds, housekeeping supervisors, and Maintenance SJF College employees shall receive asbestos awareness training in the following:

- a) Identifying asbestos and materials potentially containing asbestos;
- b) procedures to take in case of asbestos discovery;
- c) the health effects associated with asbestos exposure;
- d) methods of engineering and control;
- e) proper personal protection required;
- f) the appropriate work practices;
- g) monitoring methods and acceptable exposure levels;
- h) The requirements of posted signs and affixed labels and the meaning of the required legends for such signs and labels.
- i) information contained in this program and a general knowledge of OSHA 29 CFR Part 1926.1101.

6.1 This training shall be conducted to all affected employees upon initial assignment and at a minimum of every 12 months.

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**APPENDIX A**

**Definitions**

1. Asbestos Containing Materials (ACM) - any material containing more than one percent asbestos. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fire- proofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials.
  
2. Presumed Asbestos Containing Material (PACM)- any thermal or surfacing materials present in buildings constructed prior to 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos as defined by the OSHA Asbestos Standard.
  
3. Small Operations and Maintenance Activity - any activity conducted by the SJF College's in-house asbestos team that requires the abatement of less than 25 linear feet or 10 square feet of known or assumed asbestos containing materials.
  
4. Suspect Asbestos Containing Materials - any material that may contain more than one percent asbestos but has not been sampled and tested to determine its asbestos content.
  
5. Asbestos: Includes chrysolite, amosite, crocidolite, tremolite, asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.
  
6. Authorized person - Any person authorized by the employer and required by work duties to be present in regulated areas.
  
7. Class I asbestos work - Activities involving the removal of TSI and surfacing ACM and PACM.
  
8. Class II asbestos work - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

9. Class III asbestos work - Repair and maintenance operations, where “ACM” including thermal system insulation and surfacing material, is likely to be disturbed.
10. Class IV asbestos work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.
11. Critical barrier-One or more layers of plastic sealed over all openings into a work area or other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.
12. Fiber-A particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.
13. High-efficiency particulate air (HEPA) filter-A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.
14. Negative Initial Exposure Assessment -A demonstration by the employer, that employee exposure during an operation is expected to be consistently below the PELs.
15. Regulated area- An area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.
16. Surfacing material- Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).
17. Thermal system insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain. Thermal system insulation ACM is thermal system insulation which contains more than 1% asbestos.

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18. Permissible Exposure Limits (PELS) SJF College shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of: 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA); or, 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

**APPENDIX B**  
**REVISION HISTORY**

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**GENERAL**

All crane lifts that require material or equipment that break a roof line require prior notice to staff and employees who may be affected. This will be accomplished by providing all needed information about the proposed lift to the designated SJFC Safety Officer to initiate notification to all affected employees.

**SCHEDULED LIFT WORK**

Notification requirements will be accomplished by using the SJFC building contacts list not less than three days prior to a lift.

**EMERGENCY LIFT WORK**

In the case of an emergency need for crane lifts the SJFC Facility representatives can contact each affected employee in person not less than 8 hours before a lift.

**CONTRACTOR REQUIREMENTS**

All lifts which require breaking a roof line require a crane placement and swing diagram to be developed by the contractor conducting the lift no later than three days prior to the lift.

Crane placement and swing diagram shall be used to produce a comprehensive shutdown notice no less than three days before the lift to the Facilities Director, SJFC Safety and Security and the SJFC designated safety officer.

SJFC Facilities Director or his representative shall provide the crane company all available information about underground vaults, tunnels or utilities in the area and the weight of each load to be lifted. If a material or equipment lift does not require a formal lift plan according to the above criteria, a Job Hazard Analysis of the lift must be performed by the crane company prior to the lift.

Evidence of such an analysis may be demanded at any time by the SJFC safety representative.

**LIFTS OVER OCCUPIED SPACES**

At no time will any lift be made over occupied space. To avoid lifts over occupied space lifts shall be conducted before or after normal site occupancy hours and weekends. A lift will be made during normal working hours only under certain circumstances and only with approval of the designated SJFC Safety officer and the management of the space to be lifted over. At no time will lifts be made over personnel, active roadways, moving or parked vehicles.

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For all lifts, a pre-lift meeting shall be conducted for all personnel involved with, or in the area of, the lift so that all are aware of the planned activity and the potential hazards associated with the lift.

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