

HSE Manual Approval

This manual is the property of Applied Consultants and is provided for use exclusively for its employees. The information contained in this manual is expressed written consent of Applied Consultants. Unless otherwise indicated, Applied Consultants maintains a controlled copy.

It is the policy of Applied Consultants to provide services that exceed the expectations and needs of our customers, including others in a similar line-of-business, in a safe and environmentally friendly manner. Each Applied Consultants employee is committed to achieving this policy through the implementation and execution of our safety policies and procedures.

This HSE Manual addresses the requirements in the United States Department of Labor and Occupational Safety & Health Administration.

I acknowledge that I have read and reviewed this manual and approve its contents.

Matt Cheney
President



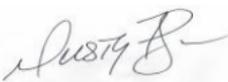
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Employee Safety & Environmental Handbook

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Introduction

This Health, Safety, & Environmental Handbook is a condensed version of Applied Consultants complete Health, Safety, & Environmental Manual. This handbook is being furnished to all Applied Consultants employees in an effort to develop safety and environmental awareness and thereby prevent personal injury, damage to property, and the environment both on and off the job. It covers many situations you may encounter and provides safety principles for you to follow, but it cannot cover every situation that arises, nor can every safe work practice be listed. By following the guidelines set forth in this manual, using good judgment, and always being mindful of safety and environmental issues, all operations can be accomplished in a safe manner. Federal, State, regulations, from which much of this material was derived, are by extension, to be considered a part of this handbook and must be followed. It is the responsibility of each employee to protect themselves, their fellow workers, the public, and the environment. You are urged to become familiar with this handbook, refer to it frequently, and comply with all the principles contained herein.

If you have any questions regarding this handbook or the means necessary to perform your job in a safe and environmentally sound manner, please discuss them with your Supervisor.

Employee Code of Conduct

The name and reputation of Applied Consultants are a result of the dedication and hard work of our employees. Together, we are responsible for preserving and enhancing this reputation, a task that is fundamental to our continued success. Our goal is not just to comply with laws and regulations that apply to our business; we also strive to abide by the highest standards of business conduct.

All employees, managers, directors and officers are expected to comply with the policies set forth in this Code of Conduct. The Code cannot and is not intended to cover every applicable law or provide answers that may arise; for that we must ultimately rely on each person's good sense of what is right, including a sense of when it is proper to seek guidance from others on the appropriate course of conduct.

We at Applied Consultants are committed to providing the best and most competitive service to our Clients. Adherence to the policies set forth in the Code will help us achieve that goal.

In short, our Code of Conduct is simple and can be summarized by the following key points:

- Obey the law: At work, or whenever on company business, all employees are expected to comply with applicable state, local and federal laws, rules and regulations.
- Respect for others: Do not use language or behavior that offends, harasses, bullies, or unfairly decimates against Clients, Pipeline

Contractor Employees, Co-Workers or others that would damage the Client or Company's reputation.

- Be honest and ethical: In all work and professional relationships, we expect you to treat Clients and the Company with fairness and honesty. Conflicts of interest or the appearance of a conflict of interest should be avoided at all times.
- Treat each other fairly and respectfully: We should always treat others as we would expect to be treated.
- Treat our Clients fairly: Clients are why our jobs exist. They deserve nothing but the best quality and service that we can provide. Please remember that our collective futures depend upon keeping the client satisfied.
- Use common sense and good judgment: Avoid actions and circumstances that may appear to compromise good business judgement or create conflict between personal and company/client interests. If you are unsure about an action or an issue, please contact the corporate office and ask for a Human Resources representative.

Health and Safety Policy Statement

General Safety Policy

- Applied Consultants believes that all work can be performed without people being injured or the environment being damaged. To help make this philosophy a reality and to allow Applied Consultants employees to apply it to their daily activities, a health and safety and environmental management system was created.
- Applied Consultants is committed to providing a safe and healthful work environment and has developed a Safe Work Manual to provide a framework for leadership at all levels in the company. This emphasis on health and safety culture is part of what makes Applied Consultants a great place to work. The management team is committed to providing the leadership and resources to achieve a *world-class* safety system with *world class* results. Indeed, this is what our customers expect. It is our belief that Applied Consultants employees will share in the successful implementation of the Safety Management System.

Management is continually taking initiative to strategically improve the safety culture by:

- Improving safety awareness by providing orientation, training and education.
- Employing best industry work practices.
- Ensuring proper assessment and mitigation of hazards in the workplace.
- Conducting regular audits and inspections.

- Ensuring proper reporting and investigation of incidents.
- Establishing rules for situations where employees refuse to work due to imminent danger.
- Controlling documents and records.

Applied Consultants Safety Values

The safety values of Applied Consultants are an integral part of the overall corporate philosophy towards safety.

WE BELIEVE:

- All incidents and injuries are preventable.
- Leadership is required for success in safety.
- Each of us have a personal responsibility for our safety and the safety of others, both on and off the job.
- No job is so important that it will be pursued at the sacrifice of safety.
- Working safely is a condition of employment.

Health & Safety Training

- Training employees is a means for taking a proactive approach to safety in the workplace. The goal is to train employees on issues that may prevent or eliminate incidents from occurring. When employees take this knowledge and couple it with safety behaviors, the result is a safe work environment.
- Applied adopts the company safety program of whom we are working for. We do safety training based on clients' needs and request.

General Safety Rules

Note: Many of the topics addressed briefly in this section are discussed in more depth within the manual. These rules apply to all Applied Consultants employees.

- **STOP WORK:** authority and obligation to suspend work when health, safety, and environmental (HSE) risk are not understood or have not been clearly established. It is a process to resolve unsafe conditions, acts, errors, omissions, or lack of understanding whether these things are real or perceived.
- All work-related injuries or illnesses must be reported ***immediately***. This includes first aid (minor injury) incidents. "Immediately" is defined as within 1 hour of the incident.
- Any vehicle and/or equipment-related incident must be reported ***immediately***.

- Any injury that occurred off the job and could result in lost work time must be reported to his/her direct supervisor and Applied's corporate office as soon as possible. A Return-To-Work notice shall be provided for medical procedures and disclosure of any prescriptions assigned to the employee.
- All near-misses must be reported to the Client before the end of the shift in which they occurred; near-misses will be documented on a Near Miss report, if applicable on clients Near Miss Report. Near-misses will be discussed with all employees during the incident safety stand-down or the next safety meeting.
- Attempts shall always be made to eliminate possibilities of environmental damage. Releases and spills shall be reported immediately to client and remediate according to the SDS and client recommendations. All wastes shall be disposed of properly in approved waste disposal sites/reclamation centers.

Applied Consultants employees will follow all client rules and policy recommendations. When there is an absence of these rules, Applied Consultants will set the high safety standard and inform management of this lack of safety initiatives.

- Horseplay or fighting is not permitted at any location.
- All persons operating vehicles for Applied Consultants in any capacity will wear seat belts or other required PPE.
- Never run on the job unless there is an emergency.

- Equipment, materials, and work areas shall be maintained in such a fashion as to minimize hazards.
- Avoid skin contact with all chemicals, beware of other means of bodily entry, and take the proper precautions. Refer to the products SDS.
- The proper personal protective equipment shall be worn at all times. Applied Consultants requires the use of PPE.
- The illegal use, possession, transportation, or sale of drugs, alcoholic beverages, firearms, deadly weapons, or explosives while on Applied Consultants or client property is prohibited. The use of prescribed drugs or any over-the-counter drug that might impair your ability to work safely must be reported to your supervisor before work. A Fit-For-Duty letter from the prescribing doctor may be required before allowed to work.
- Riding in the bed of trucks or in other non-approved areas is prohibited. “Non-approved areas” include areas that are not protected by a seatbelt.
- Use the three-point contact procedure when getting on or off any equipment. Do not jump off equipment unless following emergency evacuation procedures involved with power line strikes.
- Do not walk on pipe or any other non-approved walking/working surface.
- Smoking is allowed only in designated areas. Smokers are not allowed to take smoking materials into non-designated areas.
- Whenever a safety device is removed from service and/or defected, the appropriate

Supervisor shall be notified, the device tagged, and the action properly documented. If equipment is still operating, restrict entry and monitor continuously. Document all actions.

- No work may be started in any area or on any equipment without the knowledge and consent of the appropriate Supervisor /client representative. ***Never operate equipment that you are not trained, certified and authorized to operate.***
- Job Safety Analyses are to be conducted if applicable by client before each day's tasks begin or as major work scope changes. All persons affected by the work will attend the JSA meetings. If workers show up after the meeting has been conducted, then he must be briefed as to the JSA findings and the Supervisor is responsible for this safety briefing.
- Operation of equipment having a, "DANGER! DO NOT OPERATE." tag is prohibited.
- All energy sources will be controlled through appropriate Lockout/Tag-out procedures.
- Do not attempt to do a job alone that takes at least two people to do correctly. The Supervisor will periodically check on persons working alone. All persons working in remote areas must have a form of communication to summon emergency services if needed.
- Finger rings, loose clothing, unsecured long hair, wristwatches, and other loose accessories should not be worn when within arm's reach of any unguarded operating machinery or electrical equipment

- Use only proper tools and equipment maintained in good working condition.
- Gasoline must not be used for any purpose other than motor fuel. No employee will siphon gas by mouth, pour into the fuel tank of an engine that is running, or use as a cleaning solvent. Gasoline will be transported in approved, metal containers.
- Use proper lifting techniques when lifting or carrying objects. Use legs to lift, keep load close to body, keep feet shoulder-width apart, and ask for assistance to lift heavy objects are a few reminders in proper lifting.
- Erect barricades around hazardous work areas such as holes in decking, trenches, overhead hazardous work, open unattended vessels, or hazardous storage.
- Fall protection shall be worn when working at heights greater than 6 feet.
- Pay close attention to slip, trip and fall hazards and eliminate those hazards immediately.
- If a normal procedure must be changed to accommodate the work situation, contact client management before this change is made.
- Visitors must follow all applicable safety rules as well as be authorized to be in any area.
- Do not introduce any flame, spark, or sufficient heat (to include non-intrinsically safe equipment) into areas that have a potential for flammable materials/atmospheres. Follow Hot Work Procedures.
- Follow Defensive Driving techniques when operating motor vehicles. Follow all applicable local, state and federal transportation laws.

- Do not enter confined spaces unless proper procedures have been followed.
- Communication in all aspects is highly important. If you do not understand any directive or procedure, say so. Relay all occurrences that influence safety to Supervisors whether you think the occurrence is important or not. Always adhere to the highest safety standards.

Incident Procedures & Emergency Response

Applied Consultants has established this program to outline the procedures to follow in the event of an accident, incident, or emergency and is available to all employees. Accidents, incidents and emergencies are defined as injuries, releases or spills of company or client product, fires, vehicle incidents, property damage, weather related emergencies, or natural catastrophes. Accidents, incidents and emergencies are differentiated by the cause and magnitude of the event. Emergency response plan is put into place at the start of a job. If there are any changes made to the plan employees must be notified immediately of the changes.

The following is a prioritized list of the objectives of a responder to an incident:

- Reduce human loss and suffering.
- Minimize the loss of public or client property.

Employee/Client/Visitor Injury Procedures

- Go to the scene of the incident immediately, if safe to do so.

- Secure the area and administer first aid to the best of your ability.
- Using the JSA roster be sure that all employees are accounted for, if any employees are missing notify emergency personnel.
- Summon outside emergency services if necessary. As soon as the scene is secure notify the client and Applied Consultants Safety.
- Gather evidence in an attempt to remedy the problem. Look for the underlying causes, such as unsafe conditions or unsafe practices.
- Collect a written and recorded statement (if possible) from the injured person and any witnesses to the accident. Stress the importance of gathering the facts and discourage employees and/or witnesses from trying to place blame or responsibility.
- Take photographs of the scene whenever possible. Take photographs up-close, far away and take several to capture the incident. Reminder: No images are to be taken by outside parties and or uploaded or shared with social media sites or those not involved or authorized.
- Write the accident report giving complete, accurate accounts of the accident.
- Follow-up with recommendations to ensure conditions are corrected.

Directions: To access the Accident/ Incident Report and Investigation Form go to the company website www.appliedconsultants.com and click the safety tab. Accidents or incidents that require medical attention, loss or restricted work require the signature of the Divisional Vice President. Attach additional sheets as necessary.

Send completed forms to the Director of Safety & OQ.

Please contact Jeff Craig at 281-799-7005 (jcraig@appliedconsultants.com) for more information if needed to assist with the reporting or incident.

Response to Product Spills

While working with or around any chemical, an employee must know what engineering controls, and safe work practices have been implemented for his/her safety, and what personal protective equipment is required while performing the job.

Safety Data Sheets will serve as the primary source of information regarding handling, spill, contact, and clean-up procedures.

Applied Consultants employees, work around various chemicals while performing their job. A product release or spill is always a possibility, so attention to safety and prevention is critical. Chemical spills pose physical hazards (combustible liquid and/or gases), and health hazards (carcinogens, corrosives). Some spills require professionally trained responders (i.e. Hazwoper), so be certain to reference the appropriate SDS whenever there is a release of product.

Response to spills and releases should adhere to the following procedures (each situation will dictate different responses based on spill types/amounts, and these are general procedures):

- Report all spills to clients immediately (degree of spill amount, reporting and related hazards are left up to the decision of client and management)
- Summon emergency services per client and management directives.
- Do not enter the contaminated area without respiratory and skin contact protection. Enter only if you have the appropriate training.
- Do not try to rescue the person by holding your breath and entering the contaminated area.
- Even with proper respiratory protection, do not enter a contaminated area without standby help.
- As soon as the victim is in a safe area, personnel that are trained in CPR and First Aid should conduct an assessment to determine if the victim is breathing and perform cardiopulmonary resuscitation (CPR) if needed.
- Any employee who experiences a significant exposure to any hazardous substance, either liquid or vapor, must report the incident to the Supervisor immediately. The Supervisor ensures that the safety department has been contacted, and Safety will initiate the applicable protocol for testing and medical response.
- If toxic materials contact the skin or clothing, remove the contaminated clothing and refer to SDS for first aid procedures.
- Clean up of spilled material is based on Safety Data Sheets and those persons conducting clean up will be trained and equipped to do so.
- Personnel should avoid ditches, bell holes, ravines, and other low-lying areas where vapors, fumes, or mists may collect.

- If necessary, evacuation should be crosswind and upwind.

Response to Fires

Applied Consultants work in environments where there is a potential for fire. Due to this fact, response to fire situations and the reporting of these fires is necessary.

Note: Applied Consultants does not employ or train fire-fighter level individuals; therefore, fighting fires beyond the incipient stage is not allowed.

- Notify everyone in area to evacuate and go cross and upwind to a higher elevation.
- Call emergency response as necessary or send someone to call for emergency response.
- Render first aid or summon for first aid assistance.
- Gather fire suppression equipment.
- **Fight fires at the incipient (beginning) stage only. Do not attempt to extinguish a fuel source if the fuel source cannot be eliminated.**

Response to Vehicle Incidents

If you are involved in a vehicle incident:

- Stop at once. Check for personal injuries and send or call for an ambulance if necessary. Do not leave the scene but ask for assistance.
- Ensure you and other injured parties are not in an unsafe environment. Move to as safe area.

- Protect the scene. Set emergency signals to prevent further injury or damage.
- Secure assistance of a law enforcement officer whenever possible. Record officers' name.
- Record names and addresses of all witnesses and occupants of involved vehicles. Record vehicle license numbers. Take pictures of all vehicles, road conditions, signage or other items.
- Do not argue! Make no statement except to proper authorities. Sign only official police reports. Do not plead guilty or admit fault.
- Complete an Applied Consultants accident report to the best of your ability.
- Contact your employer.
- Do not attempt to operate the vehicle. It may have damage that you are not aware of.
- Assist the Safety Department in their report/investigation process as well as be available for all required drug/alcohol testing.

Response to Property Damage

If any company, public, private or client property is damaged, follow these procedures:

- Report the incident to a Supervisor /Management immediately. Even if you think the situation is not serious, the incident must still be reported.
- Determine if damage is causing or will cause harm to persons and respond appropriately.
- Document all occurrences.
- Take plenty of pictures.

Response to Weather-Related Emergencies or Natural Catastrophes

Lightning

NOTE: This plan contains options that should be tailored to local circumstances, available equipment, and predetermined evacuation options. It may be prudent to initiate actions earlier than suggested with fast moving storms.

- Designate a person (Weather Watcher) or persons to monitor lightning and severe weather each day.
 - Weather watcher reviews available forecasts. Thunderstorm and severe weather forecasts are also online at <http://www.spc.noaa.gov>.
 - A “Watch” indicates that conditions are favorable for severe weather to develop.
 - A “Warning” means that severe weather has been detected and may be imminent to the locale.
 - Download a weather app to your smartphone with proximity alerts.
- Threat Level 1: Lightning detected within 20 miles
- Threat Level 2: Lightning detected within 15 miles
- Threat Level 3: Lightning detected within 10 miles
- Lightning Injury Response

- Ensure scene safety (victims do not carry an electrical charge and can be touched).
 - Follow local protocols for trauma injury and triage. If necessary, safe, and appropriate, move the victim to a safe place away from the threat of another lightning strike.
 - Summon an ambulance as needed according to local protocols.
 - CPR and/or AED may be necessary.
 - Heart irregularities, shock, or sudden loss of consciousness are possible. Keep the conscious victim calm and monitor closely.
- All Clear: The weather watcher will continue to monitor the proximity of thunderstorms and utilize local observations to make an informed decision, determining the appropriate time to resume outdoor activities. Management may then allow for normal activities to resume after 30 minutes of no detected lightning strikes within a 10- mile radius of the site. Notify all (Inspectors, contractors, etc..) that outdoor activities can resume.

Tornadoes

- If a tornado is sighted, and it appears that it will come close or pass over your location, seek shelter if possible. If a shelter is not available, move away from the tornado's path at a right angle. If there is not time to escape, lie flat in the nearest depression, such as a ditch or ravine.

- In buildings without basements, take cover in the smallest room with sturdy walls, or under heavy furniture, or a tipped-over couch or chair in the center part of the building. The first floor is safer than higher floors.
- Mobile buildings or buildings on blocks should be abandoned in favor of a pre-selected shelter, or even a ditch in the open.
- Parked cars are dangerous during a tornado or severe windstorm; however, as a last resort, if no ravine or ditch is nearby, they may provide some shelter from flying debris to those who lay on the floorboard inside the car.

Floods

Carefully determine the area affected by the high water. If possible, do the following:

- Move equipment and materials to higher ground.
- Sandbag areas where water can be diverted.
- Monitor exits to be certain they are not blocked by floodwater.

When driving a vehicle, do the following:

- Be cautious of obstacles and low spots hidden by the water.
- Beware of low spots where water currents may be high enough to sweep a person or even a vehicle off the road.
- Be cautious of driving through water high enough to kill an engine and/or damage a vehicle.
- Be cautious of snakes, animals, and insects driven from their natural habitat by high water.

Freezing Rain/Ice Storms

When driving in freezing rain or ice, do the following:

- Minimize traveling until road conditions improve.
- Be cautious of bridges and overpasses during icy conditions.
- Watch for fallen power lines, tree branches, etc.
- If it is necessary to cross a frozen bridge or overpass, reduce speed, approach straight on and drive straight across. Do not touch the brakes, turn the wheels, or accelerate while crossing.

When working in potentially icy conditions do the following:

- Use salt or sand on slippery surfaces.
- Be aware of the increase potential for icy conditions on elevated walkways, steps, and ramps, etc. Use salt or sand on these surfaces to minimize the potential.
- Take care to maintain footing and move slowly.

Accident/Incident Reporting & Investigation

All incidents, no matter how minor, must be reported to a Supervisor immediately. **“Immediately” is defined as within one (1) hour of the incident, or sooner if the situation dictates.**

In order for the Accident/Incident Investigation Report to be effective, it must contain a detailed answer to the following questions:

- Who, What, When, Where, Why
- What was the employee(s) doing?
- Where was the employee when he/she was injured?
- What happened? – Describe in detail, avoid vague responses or statements.
- What caused the accident?
- What can be done to prevent a similar accident?
- Employees’ name
- Employees’ Supervisor
- List of witnesses, and their written statements. These witnesses should sign and date these statements.
- **Take Pictures!**

Directions: To access the Accident/ Incident Report and Investigation Form go to the company website www.appliedconsultants.com and click the safety tab.

Accidents or incidents that require medical attention or lost or restricted work require the signature of the Divisional Vice President. Attach additional sheets as necessary. Send completed forms to the Director of Safety.

Job Safety Analysis (JSA)

Many clients of Applied Consultants require a daily Job Safety Analysis (JSA).

The purpose of the Job Safety Analysis (JSA) is to prevent accidents by identifying existing and potential hazards, and taking actions to eliminate, or reduce them to an acceptable level before a job begins. The JSA is to be completed by all on-site personnel and reviewed by anyone visiting the jobsite. All visitors shall be briefed on site hazards before approaching the work zone.

The goal is to:

- Identify the potential hazards based on their classification.
- Identify appropriate methods to reduce or eliminate the hazards.
- Prioritize these methods based on the classification of the hazard.
- Fulfill requirements of the client.
- PPE Hazard Assessment.

JSAs must be completed before each job (routine or beyond routine) has begun. Furthermore, if the work scope changes, the JSA will be updated or another JSA will be completed.

Employees will be trained in the hazard identification process including the use and care of proper PPE.

Environmental Responsibilities and Training

Applied Consultants is dedicated to the protection of the environment.

- Pollution control equipment must be maintained in proper working order.
- Seals on packing glands, flanges and other connections must be maintained in good condition to decrease the amount of gases that escape from worn seals.
- Consider nuisance impacts such as odors, smoke and dust and improve as appropriate.
- Applied Consultants will comply with all client air emission requirements.
- All chemicals will be stored and disposed of properly.
- All chemical containers will be properly labeled.
- Plants, animals and artifacts, including but not limited to arrowheads, rocks and fossils, must not be removed from the lease property.
- Do not allow fuel/oils to leak from vehicles. If this does occur, clean up and report to the client immediately.
- All trash and liter will be collected and disposed of properly. Secure all trash in vehicles.
- Applied Consultants will follow all client SPCC (Spill Prevention and Countermeasure) Plans.
- Applied Consultants will assist in client spill investigations and reporting to the best of their ability.
- The first person to become aware of a spill will try to stop the spill if it can be done so safely.
- Applied Consultants employees must be aware of NORM-contaminated wastes (Naturally Occurring

Radioactive Materials). Because Applied Consultants does not own any process that produces this type of waste, Applied Consultants must rely on client information about possible exposures.

- Applied Consultants employees will never remove contaminated or potentially contaminated products or waste from any clients' property. Applied Consultants will assist the client in contacting those companies who are licensed and trained for contaminated waste removal.

Applied Consultants will follow all Wetlands requirements as found within the Clean Water Act. Applied Consultants clients must inform Applied Consultants management and employees of these types of environmental considerations.

All-Terrain & Utility Terrain Vehicle ATV / UTV

All employees who will be using an UTV/ATV for work related duties will be required to read and sign the UTV/ATV policy and carry insurance for all UTV/ATV's. Applied strongly discourages the use of an ATV and suggests the use of an UTV in its place.

Before an inspector utilizes an ATV/UTV on any job location, such usage must be a requirement set forth by our client.

If at any time, the inspector is observed engaging in an unsafe operation or condition of his/her ATV/UTV, the inspector will be disciplined up to including termination.

The following list outlines terms and conditions for utilizing your ATV/UTV while on the right of way or facility compound.

1. The Employee is required to maintain personal insurance which covers the ATV/UTV for usage on the project. This personal insurance must include a description of the vehicle, specific liability, medical and collision coverage limits. Evidence of all coverage must be submitted to **APPLIED CONSULTANTS, INC.** prior to **ATV/UTV** usage in the form of the Declaration page for each policy. Partial Coverage is not acceptable. The policy must be in the inspector's name or inspectors listed as authorized user. You must follow the insurance minimum allowed in the state you are working in or Applied's minimum required coverage, whichever is greater.

Applied's Minimum required coverage:

Liability/Property Damage	\$25,000
Medical /Bodily Injury	\$25,000

2. UTV's must be equipped with seatbelts and seatbelts must be utilized at all times. Prior to each use, the employee must perform a JHA/JRA and the ATV/UTV pre-ride inspection as listed in APPLIED CONSULTANTS, INC.'s ATV/UTV Safety Awareness Program.

3. The Employee cannot allow another individual to operate the ATV/UTV on the job site.
4. ATV/UTV's must never be used to transport loads as such transportation is considered outside the scope of inspection duties.
5. Employees must operate their ATV/UTV only in authorized areas. Operation off the right of way or facility compound is prohibited. If it is necessary to ride on a public road, keep your lights on, and stay out of the way of traffic. By letter of the law, most ATV/UTV's are not legal for use on the public roads. Although some officers may make exceptions for people that are performing a job this is not always the case and you may be cited or fined. All fines and citations are the responsibility of the employee.
6. ATV/UTV's must be used in a safe and responsible manner at all times and observe all safety rules and legal requirements for the operation of the vehicle. Employees must read the manufacturer guidelines and specifications as well as APPLIED CONSULTANTS, INC.'s ATV/UTV Safety Awareness Program for safe operation of his/her vehicle. Employees must then follow such guidelines and specifications while the vehicle is operational.
7. Personal protective equipment must be worn while ATV/UTV is in operation; including while loading or offloading. All equipment is defined in the APPLIED CONSULTANTS, INC. ATV/UTV Safety Awareness Program.

8. Always keep your weight uphill. Safe ATV operation requires you to constantly shift your weight while riding on hills or over obstacles. Avoid paved surfaces and public roads whenever possible. If it is necessary to ride on a paved road, even if you are only crossing it, slow down and use caution. ATV's are not designed to operate on paved or other hard, firm surfaces: you should expect control, handling, and stability to be greatly reduced.
9. Loading and unloading ATV/UTV's is when most accidents can occur. Refer to APPLIED CONSULTANTS, INC.'s ATV/UTV Safety Awareness Program for proper loading and unloading procedures.

At the time of employment with APPLIED CONSULTANTS, INC., all employees are required to sign and acknowledge the following requirements and guidelines prior to ATV/UTV usage. Furthermore, before an inspector utilizes an ATV/UTV on any job location, such usage must be a requirement set forth by our Client.

Drugs/Alcohol/Weapons Policy

Purpose of the Policy

Applied Consultants has established a drug, alcohol, and contraband policy for the following reasons:

- To assist in providing a safe and healthy working environment for our personnel.
- To protect our property and the property of our clients,
- To cooperate with our clients in their efforts to provide safe and efficient operations, and
- To project a positive image within our community.

Policy Statement

The use, possession, concealment, transportation, promotion, distribution, or sale of the following items or substances by any Applied Consultants personnel or by any personnel of an Applied Consultants subcontractor is prohibited on all company premises:

- Illegal drugs, controlled substances (including trace amounts), look-alike drugs, designer drugs or any other substance which may affect the human body like a narcotic, depressant, stimulant, hallucinogen or cannabinoid.
- Unauthorized intoxicating beverages.
- Firearms, weapons, explosives, and ammunition.
- Unauthorized items: Stolen property, drug paraphernalia, and contraband.
- Unauthorized prescription drugs.

Working under the influence of any drug is strictly prohibited. Even trace amounts of a drug in an employee's circulatory system are grounds for immediate termination. Remember, what you do at home can and will affect what you do at work.

"Company premises" is defined as any location at which work is performed by Applied Consultants, or one which is assigned to Applied Consultants for its use by a client or another contractor, including parking lots and storage areas. Automobiles, trucks and any other vehicle or piece of equipment, whether company-owned or leased, that will be operated in any capacity at an Applied Consultants location (as defined in this paragraph) is included in this definition.

No prescription drugs shall be brought on company premises by any person other than the person for whom the drug is prescribed by a licensed medical practitioner, and shall be used only in the manner, combination and quantity prescribed.

Safety of Workforce--Searches, Inspections, and Drug Testing

To ensure the safety of the workplace and the workforce, each employee, as a condition of continued employment may be required upon request of company Supervisory personnel to:

- Submit to a search of any vehicle brought onto or parked on company premises or on any premises

on which the company employees are performing work.

- Submit to a search of any pocket, package, purse, briefcase, tool box, lunch box, clothing, container or materials brought onto company premises or on premises where the company employees are performing work.
- Submit to searches and inspections of desks, file cabinets, or work areas.

Each employee, as a condition of employment, may be required to submit to blood, urine or other medically approved drug testing procedures to ensure a drug and alcohol-free work environment. The drug and alcohol testing may be utilized in, but is not limited to, the following circumstances:

- Pre-Employment
- Post-Accident
- Random testing
- Reasonable Suspicion
- Return-to-Duty
- Follow-up

The results of physical examinations and medical testing are confidential and will only be shared with the employee, and those managers who will determine what subsequent action must be taken, if any.

Effective Date

The provisions set forth in this policy will be implemented and effective immediately. Each person will be given an opportunity to read the related policies and will sign an acknowledgment that he/she understands the established requirements. Copies will be made available to all employees.

Disciplinary Action

An employee who refuses to submit to a search or inspection, a drug screen, or other approved medical testing procedure will be subject to disciplinary action up to and including discharge. Furthermore, if a detectable quantity of any illegal drug, controlled substance, non-prescription medication, or other substance that has a similar effect on the human body is discovered, disciplinary action, up to and including discharge, will be taken. Compliance with these policies and programs is a condition of employment. The proper law enforcement authorities will be notified whenever necessary or applicable.

Employee Assistance Program available by calling (903) 753-9593 or visit www.findtreatment.samhsa.gov

Applied Consultants, Inc. DER: Jeff Craig

Contact Information:

Phone: (903) 643-0956

Email: jcraig@appliedconsultants.com

Abrasive Blasting

The following guidelines are used where applicable in conjunction with other established safe work procedures such as:

- Hot Work
- Confined Space Permits
- Lockout/Tagout
- Respiratory protection
- Personal protective equipment
- Lead handling and asbestos

Guidelines

- Contractor employees operating abrasive blasting equipment must be trained in the safe operation of that equipment.
- Designated blasting areas must be established based on the size of the project and composition of materials being used and removed.
- Shielding may be required for coatings containing lead or asbestos
- Marking the area with warning signs
- Appropriate work permits in accordance with safe work procedures must be completed.

Waste Disposal

- Applied Consultants, and its employees are not responsible for the disposal of any waste on any jobsite,
- Employees must be aware that some surfaces containing lead, asbestos, arsenic, barium, cadmium, chromium, zinc, or nickel may require special disposal.

- Applied Consultants will contact client representative for waste disposal instructions.
- Applied Consultants employees will use engineering means and then personal protective equipment to protect themselves from these byproducts.
- Refer to the ERG (Emergency Response Guide) for specific chemical properties and handling precautions.

Workplace Monitoring

- At all times, engineering practices, such as: exhaust ventilation, enclosure/encapsulation, isolation, etc., will be utilized initially to remove hazardous substances. If ventilation is used, analysis must still be conducted to determine that levels are within acceptable ranges.

Respirators

- Applied Consultants inspectors **are not authorized** to wear a respirator and/or enter the restricted area established around abrasive blasting operations.

Abrasive Blasting Inspection

The items below should be inspected before each work shift during which abrasive blasting will be conducted. The inspection should ensure that all employees:

- Wear proper PPE in or adjacent to the blasting area.
- Ensure that proper work permits have been completed.

- Completed a thorough inspection of the area for hazards.
- Remain a safe distance from activity.

Vehicle Mounted Elevating and Rotating Work Platforms

Operation Note: Applied inspectors are not permitted to operate or ride in an aerial lift unless they have been trained, and certified. Inspectors are only authorized once they have successfully completed the training course AND receive a current operator's card.

Asbestos Program

Applied Consultants employees will occasionally be assigned to a job that involves asbestos. In most cases, this asbestos will be found in pipe coating. However, Applied Consultants employees **are not permitted** within an asbestos regulated area until they have been trained and certified to do so. Certified employees must have a valid certification card on their person at the time of entry. The training must cover 29 CFR 1910.12(b).

Affected work activities include, but are not limited to, the following:

- Demolition or salvage of structures
- Removal or encapsulation of materials
- Construction, alteration, repair, maintenance, or renovation

- Installation of products containing asbestos
- Spill/emergency clean up
- Transportation, disposal, storage, containment and housekeeping activities are performed

Benzene Exposure (Awareness)

Applied Consultants employees may be exposed to various chemicals or products in the workplace. All Applied Consultants employees shall be aware of the hazards posed by chemicals and shall be protected from any harm potentially caused by these hazards. Safety Data Sheets will be referenced for hazards and guidelines adhered to.

- Benzene is a clear, colorless, flammable liquid.
- Benzene is considered a carcinogen which is cancer-causing.
- It has a strong, sweet odor.
- Benzene is extremely flammable.
- Fire Extinguishers must be readily available to all employees within the Regulated Area.

Note: Employees need to be aware that there may be no safe level of exposure to a carcinogen, so all contact should be reduced to the lowest possible level. When skin contact also occurs, you may be overexposed. All chemical contact will be kept to a minimum, PPE shall be utilized and the SDS will be referenced for all hazards.

Potential locations of Benzene exposure:

- Petroleum refining sites
- Tank Gauging (tanks at producing, pipeline & refining operations)
- Field maintenance

Applied Consultants does not produce any product that contains benzene but may work around the following products or operations:

- Gasoline
- Paints
- Thinners
- Tank Bottoms
- Sumps
- Pig Traps
- Crude Oils
- Degreasers
- Cleaners
- Barrels
- Strainers & Filters
- Pipeline Repairs

Benzene Exposure Symptoms

- Dizziness
- Giddy, anxious feeling
- Nausea
- Shortness of breath
- Respiratory, skin, and eye irritation
- Severe headaches
- Unsteadiness

Bloodborne Pathogens

Purpose

The purpose of this program is to prevent Applied Consultants employees from being exposed to bloodborne pathogens, to minimize the risk of exposure, where there may be a potential for exposure to a bloodborne pathogen through an Exposure Control Program (ECP), and to assure compliance with 29 CFR 1910.1030.

Covered Employees

If an employee is trained in first aid for rendering medical assistance as part of his/her job duties, that employee may have occupational exposure to bloodborne pathogens and is therefore covered by the Bloodborne Pathogen Standard, 29 CFR 1910.1030.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or other contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

First Aid Training

First aid trainers are responsible to make sure that employees are trained in bloodborne pathogen hazards and controls at the time the first aid training is provided.

Training should include:

- Symptoms of blood borne diseases
- Modes of transmission of blood borne pathogens
- Recognition of tasks that may involve exposure
- Use and limitations of methods to reduce exposure, for example, use of plastic gloves, and other personal protective equipment (PPE)
- Types, use, location, removal, handling,

- decontamination, and disposal of PPE
- The basis of selection of PPE
- Hepatitis B vaccination efficacy, safety, method of administration, and benefits

Exposure Control Plan (ECP)

- Universal Precautions procedures will be observed at all times: All body fluids will be considered potentially infectious.
- Eliminating or minimizing occupational exposure of employees to blood or certain other body fluids
- Complying with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030
- Assuring adequate protection for those employees who are designated first aid responders

Confined Space

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

No Employees Are Allowed To Enter Confined Spaces Unless They Have Been Specially Trained In Confined Space Entry.

A Permit-Required Confined Space is any tank, vessel, or similar enclosed area that:

- Contains an atmospheric or physical hazard, or has the potential to contain such a hazard,
- Has a restricted means of entry and egress, and is not designed for continuous human occupancy.
- A Permit-Confined space is further defined as any tank, vessel, pit or open-topped space more than 4 feet deep, except open-topped spaces whose width is greater than the depth.
- Although OSHA allows confined spaces with no potential for a recognized hazard to be considered Non-Permit Required Confined Spaces, Applied Consultants shall consider all confined spaces as Permit-Required Confined Spaces.
- Warning signs must be posted at all point(s) of entry to identify confined spaces. Signs shall state:

CONFINED SPACE – DANGER – DO NOT ENTER.

In order to perform work that involves entry into a Permit-Required Confined Space, the following requirements must be met:

- The entry must be authorized by the client.
- All hazards and potential hazards must be identified, and appropriate precautions taken.
- A Confined Space Entry Permit must be completely filled out and the appropriate signatures obtained.
- **All personnel must have completed competent person training for confined space entry. All personnel must have completed training appropriate to their duties.**
- An effective Rescue Plan must be developed.

Entry is defined as any part of the body breaking the plane of an opening into the Permit-Required Confined Space.

Preparation of Confined Space

- Before entering the interior of any vessel or tank, it shall be drained, washed, purged, and flushed to the extent practical. All available engineering controls (i.e. blinding, lockout/tagout, and mechanical ventilation, etc.) must be implemented to minimize the hazards present within the space.

Testing Confined Space Atmospheres

- Confined space atmospheres must be tested before entry is allowed. The atmosphere must be tested for oxygen content, flammability (LEL), any other suspected toxic contaminants. The tests must be conducted in the order listed.

- All equipment used for atmospheric testing shall be calibrated and operationally checked prior to use according to manufacturer's specifications.
- The percentage of oxygen for unprotected entry into a confined space shall be no less than 19.5 percent and no greater than 22 percent. The oxygen level must be checked before the flammability test is conducted.
- Entry will not be allowed if LEL is greater than 10 percent unless the confined space has been rendered inert.
- Those confined spaces that **do not** require respiratory protection based on the test results shall be continuously monitored for proper oxygen levels, toxic gases, and combustible gases.
- Continuous monitoring for toxic and combustible gasses is **mandatory** on all confined space work regardless of respiratory protection provided.

Confined Space Entry Permits

- The Client's Entry Supervisor is responsible for completing the entry permit, the document that controls entry into a confined space, and enforcing any requirements identified on the permit.
- Work in a confined space will not be allowed until a confined space entry permit is completed and a JSA has been held to review the entry permit.
- The entry permit shall be immediately voided if any condition or circumstance arises that was not anticipated when the permit was completed.

Any Applied Consultants employee has the right and responsibility to ask to review calibrated air monitoring

data before and during entry, especially if he/she believes the conditions have changed.

Confined Space Personal Protective Equipment

- Authorized Entrants shall be provided with the proper respiratory equipment and operating instructions.
- This equipment shall be checked prior to use to ensure operability.
- Contract personnel entering a hazardous atmosphere shall provide their own respiratory protection equipment and it shall be used in accordance with a satisfactory respiratory protection program.
- Proper personal protective equipment (gloves, goggles, hearing protection, etc.) shall be worn where applicable.
- All Authorized Entrants shall wear a full body fall protection harness. This shall be done even when no vertical hoisting equipment is provided, such as entries made horizontally, at ground level. Full body harnesses can greatly facilitate quick rescue in many situations, even if they only serve as a “handle”.

Rescue

A written rescue plan shall be developed prior to entering a Permit-Required Confined Space. The plan shall include, at a minimum:

- Means of notification;
- An assessment of the hazard;
- Appropriate recovery techniques;
- Personnel required to perform the rescue;

- Precautions to be taken while in the confined space;
- Personal protective equipment to be used;
- Rescue equipment needed;
- Tools or other special equipment needed; and
- Identification of emergency medical resources.
- If the Permit-Required Confined Space contains an atmosphere that is Immediately Dangerous to Life or Health (IDLH), the rescue service must be in the immediate vicinity of the jobsite, and they must be prepared to perform a rescue at a moment's notice.

Electrical Safety: Qualified/Non-Qualified

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

This section addresses the safe working practices and the hazards faced by Applied Consultants employees who monitor work on exposed energized and de-energized parts or employees who come near enough to be exposed to the electrical hazards they present.

- Only a qualified electrician will perform electrical work or repairs.
- Electrical components will be locked and tagged out before they are worked on except when necessary to locate a definite problem and then only qualified electricians perform this work.
- Live electrical equipment and components will not be worked on without proper non-conductive tools.
- AC light plants will be grounded immediately when set on location. All other skids with electrical power will have properly sized grounding conductors connected to the generator skid.
- Switches will never be thrown “in” or “out” under loaded circuit. All lighting fixtures shall be kept in good repair. Broken or burned out bulbs will be

- replaced as soon as possible, and vapor proof globes and guards will be kept in place over lights.
- Drop cords and lights will have metal guards surrounding them unless this metal guard can become conductive.
 - All electrical cables will be protected from physical damage. Damaged or cut cables will be repaired, spliced, or replaced as soon as possible, broken or defective portable cables, such as a bug blower or extension cords will be cut to shorter length or replaced.
 - Electrically powered hand tools will not be equipped with a trigger locking device for continuous running and all should be properly grounded, or of the double insulated U.L. approved case design.
 - All 120-volt single-phase 15 and 20 ampere receptacle outlets on all jobsites, which are not part of the permanent wiring of the building or structure, shall be protected by an approved ground-fault circuit interrupter (GFCI).
 - Portable GFCI's shall be tested and inspected before each use.
 - Fuse pullers will be available at all times for changing electrical fuses. Periodic checks for proper circuit grounds of all electric outlets will be performed
 - All high voltage panels (above 440 volts) will be clearly marked "**DANGER- HIGH VOLTAGE.**"

- Electrical apparatus and areas near electrical equipment will not be washed down with water.
- Electrical hand tools will not be used while standing in water or outside during foul weather conditions.
- Personnel rescuing a victim of electrical shock will first switch off the power causing the shock. If this is not possible, attempt to pull the victim away from contact with the live conductor using a dry stick, a dry rope, or other non-conductive material.
- Jewelry and clothing that are conductive shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means.
- Any vehicular or mechanical equipment that is capable of having its moving parts or its structure elevated near overhead lines, will keep a clearance of at least 10 ft. for lines containing 50kv.

Voltage (nominal, kV, alternating current)	Minimum clearance distance (Feet)
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45
Over 1,000	(As established by the utility owner/ operator or registered professional engineer who is a qualified person with the respect to electrical power transmission and distribution.)

- When an unqualified person is working on a line, he or she may not come close to any unguarded, energized overhead line than:
 - For voltage to ground 50kv or below- 10 feet
 - For voltage to ground over 50kv- 10 feet, plus an additional 4 inches added to the original 10 feet for every 10kv over 50 kV.
 - If work is going to be performed near overhead lines, the lines will be de-energized and grounded or other protective measures will be provided before work is started
 - Only qualified persons (i.e. those permitted to work on or near exposed energized parts) may work on energized parts or equipment. These qualified people will be made familiar with the

use of special pre-cautionary techniques, PPE, insulating & shielding materials and insulated tools.

- When portable ladders are used near exposed electrical parts, they will have non-conductive side rails.
- When working in confined spaces where electrical hazards may exist, the employer is responsible for providing the proper protective equipment. The employee will use protective shields, protective barriers or insulating materials as necessary to avoid contact with these parts.
- Unless properly illuminated where Applied Consultants employees can perform the job safely, employees may not enter a confined space containing energized parts.
- In the event that an employee must handle long dimensional conductive objects in areas with exposed live parts, the employer shall institute safe work practices to minimize the hazard. Examples of safe work practices include insulation, guarding and material handling techniques.

Fall Protection

General

Fall protection is required whenever contractors are exposed to a potential fall from a height of **four foot or greater** (General Industry Standard) or **six feet or greater** (Construction Standard).

This includes work near and around excavations. Use of guard rails, safety nets, or personal fall arrest systems shall be used when the standard methods of protection are not feasible, or when the standard measures would create a greater hazard. The exposure determination shall be made without regard to the use of PPE. The client shall determine the extent to which scaffolds, ladders or vehicle mounted work platforms can be used.

Connectors, D-Rings and Snap Hooks

Dee-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds and shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snap-hook.

Lifelines and Lanyards

- Horizontal lifelines shall be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system, maintaining a safety factor of two.
- Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.
- Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pound

- Ropes and straps (webbing) used in lanyards, lifelines, the strength components of, and body harnesses shall be made from synthetic fibers.

Components

- Waist belts shall not be used. **Full body harnesses shall be used in all cases.** The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head. Harnesses and components shall not be used to hoist materials.
- Personal fall protection systems shall be inspected prior to each use for wear, damage and other deterioration; defective components shall be removed from service.
- Provisions shall be made for prompt rescue of employees in the event of a fall or employees must be able to rescue themselves promptly. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service. The affected equipment shall not be used again until it is inspected by a competent person and determined to be undamaged and suitable for reuse.

Training Requirements

Each employee shall be trained, as necessary, by a competent person qualified in the following areas:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
- 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;

- The role of each employee in the safety monitoring system when this system is used;
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
- The role of employees in fall protection plans;
- The standards contained in this subpart.

Equipment and Raw Materials

All equipment and raw materials purchased for use in fall protection systems must meet or exceed the applicable ANSI and ASTM requirements.

Fire Protection

Almost all fires are preventable, and control measures can limit the losses if a fire does occur. A prevention program will involve employee training on material storage, inspections, and emergency action procedures.

Employees of Applied Consultants will perform fire-fighting techniques on incipient stage fires ONLY. No Applied Consultants employee is authorized to conduct firefighting beyond incipient stages. Fire prevention and control principles include the following:

- Dispose of all waste in proper containers and keep work area clean and orderly. Do not allow accumulation.
- The use of flammable solvents as cleaning agents is prohibited.
- The engine of all equipment being fueled shall be shut off and allowed to cool before fueling operations begin.
- Open flames shall not be used to locate leaks.
- Smoking within 50 feet of operations, which constitutes a fire hazard, is strictly prohibited.
- "NO SMOKING" signs will be posted and clearly visible around any area that constitutes a fire hazard.
- All employees are responsible to know the location and operations of all fire extinguishers, hoses, and alarms.
- All fire extinguishers will be properly mounted and marked according to the type of fire that may occur at a height no greater than 4 ft. 11 in. from the ground level to the top.

- All fire extinguishers must be inspected monthly and documented.
- All hoses and equipment must be properly grounded and bonded while being used around flammable materials.
- Flammable materials must be stored in well-ventilated areas or in approved storage cabinets.
- Perform welding/cutting operations and all other hot work in a safe location which is away from any fire hazard.
- Keep all exits unobstructed.
- Dispose of all cigarette butts, matches, and other hot items in proper containers.
- Inspect all heaters and electrical cords/appliances before each use.
- Do not overload electrical circuits or use frayed or defective electrical cords.
- Drum dispensers should be of the self-closing type.
- Routine inspections shall be performed for hazards and equipment maintenance.
- Operations that generate dust or vapors must be performed in well-ventilated areas.
- Heaters should be operated in areas free of combustibles or rubbish.
- Remember to use the **PASS** method.
 - **P**ULL
 - **A**IM
 - **S**QUEEZE
 - **S**WEEP
- Whenever there is hot work being done, a sufficient number of portable fire extinguishers will be present to help in the event they are needed.

- It is workers obligation not to block, damage, misuse or inappropriate use the personal protective equipment for emergency response, sketches, drawings, maps, and evacuation signs, among others. Provided for the prevention and fighting of fires.
- Evacuation routes must be free of obstacles that prevent the movement of workers and other occupants at all times.

An annual training program in theoretical and practical fire prevention and emergency response for all employees will be provided.

FIRST AID/CPR PROCEDURES

Definition of First Aid:

Immediate care given to a victim of an accident or sudden illness until a higher level of medical skill and care can be provided.

Special Note: If you are in a situation that requires medical services of any kind, you are required to notify the Emergency Medical System (EMS) by calling 911.

- Always remember to ensure the scene is safe for you to enter before you attempt to administer any type of rescue.
- Always use Body Substance Isolation (BSI): assume every other person's blood or body fluids are contaminated and protect yourself accordingly.

Victim has Stopped Breathing—Situation: *Critical*

- Not breathing with a pulse: Requires rescue breathing
- Not breathing without a pulse: Requires Cardiopulmonary Resuscitation (CPR)

Cardiopulmonary Resuscitation (CPR)

CPR is to be administered by First Aid/CPR certified individuals. If you are not trained and certified in First Aid/CPR and are confronted with this situation, always assist to the best of your ability: summon help and respond to the level of your training.

When to stop CPR:

- When another person trained in CPR relieves you,

- When paramedics or EMT personnel arrive,
- When the situation endangers your safety and health, or
- When you become too exhausted to proceed.

Heart Attack

- Immediate notification of the EMS system is essential. Call 911.
- Treat for shock (see below)
- Try to keep the victim calm and make them as comfortable as possible.
- Monitor the ABC's— **A**irway **B**reathing **C**irculation: If the victim is talking to you, you know that he/she is breathing. If they become unconscious, do a head tilt/chin lift to maintain an open airway. Check for breathing and monitor the pulse. If the victim needs CPR you will be prepared.

Severe Bleeding

- Apply direct pressure to the wound with a dry, clean, sterile pad or gauze.
- If possible, have the victim apply the bandage. This helps control shock by giving the victim something to focus on, and it helps to keep the rescuer away from the victim's blood
- Keep the wound elevated above the heart if possible
- If bleeding will not stop, then apply pressure at the applicable pressure points. For injuries of the arm, find the brachial artery located along the upper arm bone on the inside of the bicep. For injuries of the leg, find the femoral artery located

next to the pubic region where the leg and pelvis come together.

- Use of a tourniquet may be used to stop bleeding.

Fractures or Breaks

Common signs and symptoms include severe pain, muscle spasms, weakness or numbness below the suspected area, and the victim guarding the suspected area.

- If you cannot get victim out safely, call 911
- Splint the injured limb above and below the nearest joint. This prevents the parts from moving
- Never move a suspected broken limb. Splint in place.
- Monitor the ABC's and treat for shock if the victim begins to show signs

Chemical Exposure

- Treatment for chemical exposure will be based on SDS recommendations.
- Contractors shall provide SDS sheets specific to the chemicals to be used and will be readily available at each jobsite for reference.
- Client supplied eye wash equipment should be capable of providing a 15-minute supply of cleansing solution, to be used for flushing chemicals from the eyes or off of the body.

Shock

Shock happens when a victim's entire system begins to shut down. Many things can cause shock *such* as a severe injury, witnessing a trauma, infection, pain, heart attack, stroke and or heat exhaustion.

Symptoms of shock include:

- Cold and Clammy Skin
- Pale Complexion
- Shallow Breathing
- Rapid Pulse

Action

- Notify EMS (Call 911)
- Have victim lie down
- Elevate feet 8 – 12 inches if no spinal trauma suspected
- If possible have the victim's head slightly lower than the his/her heart
- Keep the victim comfortable
- Monitor ABC's until help arrives (**A**irway **B**reathing **C**irculation)

Heat Exhaustion

Signs and Symptoms of Heat Exhaustion Include:

- Pale Complexion
- Headache
- Weakness
- Excessive Sweating
- Clammy Skin
- Nausea
- High Body Temp
- Cramps

Action:

- Treat for shock.
- Get victim out of heat and into a shaded cool place.
- Have victim lie down with head below heart level.
- If conscious, give victim something to drink.
- Monitor the ABC's and seek medical attention.

Heat Stroke

Heat stroke is a medical emergency that is life threatening. If medical attention is not administered, the victim can face coma and/or death. Signs of heat stroke include but are not limited to:

- Flushed And /Or Hot Skin
- Sweating Stops or Slows Noticeably
- Strong Rapid Heart Rate (Pulse)
- Body Temperature Significantly Above Normal
- Headache
- Nausea
- Dizziness
- Unconsciousness.

Action:

- Call EMS (911)
- Get victim out of heat, into shade, a building, or whatever provides a cover from the heat
- Rapidly cool the victim by applying cool water, **(Not Ice or Ice Water)** to the victim's entire body.
- Monitor the ABC's and assist the victim with whatever he/she needs until help arrives.

Insect/Animal Bites

Any sting or bite from an insect with venom, i.e., wasps, bees, spiders, fire ant, etc., should be reported to your Supervisor immediately.

Some people can react quite severely to insect stings and bites. This is called **anaphylaxis**. Insects, medications, certain foods, or even pollen can cause this type of reaction.

Each employee is required to notify their supervisor and Applied Consultants Safety department about such possible reactions. The employee is to have a currently prescribed Epi-Pen available at the work site for potential use.

HYDROGEN SULFIDE (H₂S)

Applied Consultants employees may be exposed to Hydrogen Sulfide Gas on some client's jobsites. It is the Clients Responsibility to notify all parties involved of the potential hazards and furnish calibrated monitoring equipment for Inspectors.

Characteristics of Hydrogen Sulfide

- Hydrogen Sulfide is a colorless gas at atmospheric temperature and pressure
- It has a foul odor, comparable to rotten eggs, in small concentrations but causes paralysis of the olfactory nerve within 60 seconds in higher concentrations.
- The paralytic effect of Hydrogen Sulfide on the sense of smell is a significant hazard.
- The odor threshold for H₂S is 0.13 parts per million (PPM).
- NOTE: The Permissible Exposure Limit (PEL) for H₂S in any 8-hr work shift of a 40-hr work week shall not exceed 10 PPM, and the Short-Term Exposure Level (STEL) for H₂S is 10 PPM for 15 minutes, a maximum of 4 times in an 8-hr work day with at least one hour between each exposure. This STEL can be used for the TLV/TWA.

Additional Characteristics:

- Hydrogen Sulfide is approximately 20% heavier than air.
- H₂S forms an explosive mixture with air between 4.3% and 46% by volume concentration.
- The IDLH (Immediately Dangerous to Life and Health) for H₂S is 100 PPM.
- Sulfur Dioxide (SO₂) is a toxic byproduct of H₂S; SO₂ is created during the burning/flaring of H₂S. Sulfur Dioxide has a pungent odor and provides ample warning of its presence—the odor threshold is 3 PPM. In high enough concentrations, SO₂ is deadly.

10 PPM	Obvious and unpleasant odor; beginning eye irritation. Permissible Exposure Limit (PEL) of 8 hrs.
50-100 PPM	Slight conjunctivitis and respiratory tract irritation after 1 hour of exposure
100 PPM IDLH	Loss of sense of smell in 3 to 15 mins.; altered respiration, coughing, and drowsiness after 15-30 mins. followed by throat irritation after 1 hr.; symptoms will gradually increase with continued exposure, and death can result within 48 hrs.
200-300 PPM	Quick loss of sense of smell; sting in eyes and throat; Respiratory irritation; DEATH within 2 hrs.
500 PPM	Dizziness; breathing ceases within a few minutes; prompt rescue breathing mandatory; SELF-RESCUE IMPOSSIBLE due to loss of muscle control
700 PPM	Quick loss of consciousness
1000 PPM	Immediate loss of consciousness followed by death within minutes

Toxicity (Physiological Response):

There is no evidence that repeated exposures to Hydrogen Sulfide result in accumulative poisoning, but repeated exposures to H₂S do appear to cause some increases in susceptibility to the gas.

Potential for Exposure

In most industrial operations, sulfur compounds are undesirable components that must be removed from the product. There are several possible means by which H₂S can permeate a job site:

Drilling Rigs

Some geographical areas are richer in sulfur deposits than others, but there is always a danger of drilling into pockets of gas that will enter the atmosphere. There is always a risk of H₂S escaping through a drilling hole, but other means of escape to consider are:

- Recycled Drilling Mud because of the weak soluble properties of H₂S that are addressed above.
- Water from Sour Crude Wells (for the same reason)
- Blowouts

Tank Gauging and Field Maintenance

Work around tanks, pipeline and refining operations carries an inherent risk of exposure to H₂S. Hydrogen Sulfide will utilize the oxygen in CO₂ or water to create carbonic acid and eat through untreated, pitted or otherwise corroded steel. Although the necessary precautions should have already been taken, tank batteries, wells, pipelines and

other such premises must be approached and worked in with an attentive regard for corrosion.

Casing, tubing, drill pipe, couplings and the like that are used around hydrogen sulfide should meet the standards as described in NACE STD MR-01-75: Standard material requirements sulfide stress cracking resistant metallic materials for oilfield equipment.

Exposure Prevention—Personal and Area Monitors/Alarms

All areas where there is a potential for exposure to Hydrogen Sulfide must be monitored. Although there are numerous types of monitors available (i.e. electronic, direct reading colorimetric tubes, wet chemistry and lead acetate methods), all monitors used for employee exposure prevention must adhere to the following:

- All monitors should be portable, weighing no more than 10 lbs.
- Monitors should provide a direct readout of hydrogen sulfide concentration in parts per million (PPM) by volume.
- Monitoring equipment should be readily operable by all jobsite personnel.
- All users should refer to or be trained on the material within the manufacturer's book before use.
- All portable monitors should contain integrated audible, visual or physical presentation alarms.
- All monitors should be rugged but should be protected from extreme conditions (i.e. Water, chemical sprays and abuse).
- **Only electronic monitors are suitable for standard jobsite safety; the personal and area**

electronic monitors issued on a job site must alarm when the PEL exceeds 10 PPM.

Safety Precautions and Contingency Plan

All employees need to be aware of the three conditions of H₂S concentration. Employees should refer to this section for the three conditions of H₂S concentration:

- Green (< 10 PPM)
- Yellow (10 – 50 PPM) When the Hydrogen Sulfide concentration exceeds 10 PPM (ACGIH) at some area on site, and the well or production stream is still under control, all personnel are notified by the area monitor with an intermittent audible alarm and a yellow flashing light. Upon hearing or seeing the alarm, all non-essential personnel must proceed to the upwind safe-briefing area (to be determined before work commences and modified if necessary to accommodate weather conditions). Remaining essential personnel must wear breathing apparatuses.
- Red (> 50 PPM). In the event that the H₂S concentration exceeds 50 PPM on the location, or a loss of well control occurs, personnel are notified by a continuous alarm and a red flashing light. All personnel that are not involved in the recovery effort must evacuate the location. All persons remaining on the site must wear breathing apparatuses.

NOTE: Before work commences on any job site, a site specific contingency plan will be established by the client

and ALL employees working on-site must be trained by client on client representation.

NOTE: The only breathing apparatuses authorized for use around Hydrogen Sulfide are NIOSH-certified self-contained breathing apparatuses or an airline respirator with an escape SCBA.

PROPER TOOL USAGE

- All tools, whether owned by contractor or contractor employees, must be maintained in a safe condition and inspected regularly. Replace defective tools and tag-out damaged equipment.
- Do not modify tools. Safety guards must NOT be removed, restrained, or bypassed.
- Use tools for designed purposes only. Get the right tool for the job.
- Do not remove guards and/or handles from grinders. Do not operate a grinder without proper training.
- Be sure power tools are turned off before connecting to an energy source. De-energize equipment before servicing or changing components.
- If there is any potential for fire or explosion, intrinsically safe tools must be used. Air operated tools should be chosen, and compressed gas is never used to operate these tools.

- With the exception of UL double-insulated tools, the frames of portable electric tools must be grounded, either through a 3-way plug or separate wire. Tools used in or near wet locations must be plugged into a ground-fault protection circuit.
- Never use one wrench as a cheater for a second wrench. Cheaters shall not be used.
- Never step or jump on wrenches when additional force is required. Get a larger tool.
- An air hose is not to be used to blow particles off clothing, hair or skin.
- Do not use tools, unless a pry bar, as a pry bar.
- Do not throw tools.
- Guards or shields must be in place and operable at all times while tool is being operated.
- Electric cords to power tools must be in good condition and should not be run through door openings or across driveways.
- Air hoses used for tools should be secured with devices to prevent accidental separation. Hoses under pressure will be secured at end connections to prevent separation or whipping.
- Do not operate power tools unless you are properly trained.
- Be aware of twisting/kick-out forces with certain tools. Maintain solid footing and remain alert.
- Employees are required to wear any PPE that is considered necessary to protect them from the potential hazards of the tool or environment (i.e. falling, flying, abrasive, or splashing objects, or harmful dust, fumes, mists, vapors or gases). Compliance is mandatory.

- Carry tools in appropriate pouches and/or sheaths.
- Use proper securing devices to hold material in place.
- Do not place sharp or pointed tools in pockets.
- Hold and carry tools by designated handles.
- De-energize all power tools when moving or repairing.
- Keep cutting tools sharp and lubricated.
- Do not wear loose jewelry or clothing around rotating equipment. Tie long hair back.
- During work operations, idle tools will be placed in secure spots where they do not become a tripping or falling hazard.
- Tools will be secured in the rear of vehicle where they do not become a projectile during vehicle collisions
- Tools will not be stored in the rear of vehicles where they obstruct the drivers' vision.
- Report damaged tools for appropriate repair. Do not use broken tools.
- Handles will not be taped or painted.
- Any tool which is not in compliance with any applicable requirement of this program is prohibited and must be identified as unsafe by tagging and/or locking the controls to render it inoperable. If this is not practical or feasible, the tool must be physically removed from its place of operation.

HAZARDOUS COMMUNICATION "RIGHT TO KNOW AND UNDERSTAND" CHEMICAL HANDLING

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

Policy

All Applied Consultants' work locations shall fully comply with the Federal Occupational Safety and Health Administration (OSHA) Hazardous Communication Standard, 29 CFR 1910.1200 "RIGHT-TO-KNOW-AND-UNDERSTAND".

General Requirements

The Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012, requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely the same as the MSDS, except now the SDS's are required to be presented in a consistent user-friendly, 16-section format.

The Department of Transportation (DOT), Environmental Protection Agency, and the Consumer Product Safety Commission actively participated in developing the GHS. DOT has already modified its requirements for classification and labeling to make them consistent with United Nations transport requirements and the new globally harmonized system.

NOTE: No one is authorized to remove or deface the labels on containers.

Safety Data Sheets (SDS): SDS's should be available and provided by client or contractor to all employees at the job site, their representatives, and the authorities.

The SDS documents shall be made available prior to commencement of work.

HAZWOPER/EMERGENCY RESPONSE

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

Objective

The objective of this program is to ensure that any Applied Consultants employee that is assigned to a job site that has the potential of a hazardous materials release or spill knows how to respond in the event of a release, or substantial release threat of a hazardous substance.

In the event of a Chemical Spill or Release:

- Evacuate the area
- Contact a company representative to report
- Contact emergency services if the situation warrants

Applied Consultants does not have the equipment or facilities to remove and properly dispose of hazardous substances. If the incident commander determines it is necessary to remove hazardous substances, health hazards and materials contaminated with them (such as

contaminated soil or other elements of the natural environment) from the job site, a qualified environmental contractor must be contracted to remove the affected material.

Refer to the ERG (Emergency Response Guide) for safe work distance, substance identification and contact information to CHEMTREC.

LADDER SAFETY

- Safety climbs that are installed on ladders attached to equipment must be used. Safety climbs have safety belt attachments that allow personnel to climb without detaching their safety belts after each step.
- Ladders must be maintained in good condition. When portable ladders are used on hard surfaces, they must be equipped with nonskid footing or securely fastened to prevent slipping. The top of the ladder should be secured, or another person should hold the ladder. The base of the ladder should be placed away from the wall by a distance of about one foot for every four feet in height. Ladders will extend three feet past point of contact; if this is not feasible, the ladder must be secured at the top to a rigid support that will not deflect.
- Ladders should be stored in places not exposed to weather or elements that may harm them, such as sun and rain.

- All permanent ladders must be securely fastened at both top and bottom. Long ladders should also be secured at intermediate points.
- Ladders should be closely inspected when purchased or installed and re-inspected at least twice a year. Check the condition of the ladder before it is used and correct any defects. The combined weight of the employee and load should not exceed the load limit of the ladder. Remove any oil, grease, or slippery material from the ladder and from the shoes.
- Wooden and fiberglass ladders must not be painted. Wooden ladders should be coated with clear varnish or shellac or treated with boiled linseed oil.
- Ladders must not be placed in front of doors that open toward the ladder unless the door is locked or guarded.
- When climbing or descending a ladder, a person should face the ladder and hold the side rails, not the rungs. Climbers should not carry tools or other encumbrances in their hands. A tool belt or pouch should be used for holding small tools, and a hand line should be used to raise or lower heavy or bulky objects. When a climbing belt is supplied, the person ascending or descending the ladder must use it.
- When working from a ladder, never extend farther than the arm's length to reach work. When working on a portable ladder, move the ladder to avoid the possibility of an accident.
- No more than one person should be on a ladder at the same time where possible. If a job requires

more than one person, a second ladder or a scaffold should be considered.

- Never work on an unsecured ladder in windy conditions.
- A person should not stand on the top two steps or the spreader of a stepladder.
- A stepladder should not be used as a straight ladder (i.e. used while still folded).
- It is a good safety practice for someone to hold or steady a stepladder for a person working near its top.
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
- Ladders must be placed on a stable and level surface.
- Any ladder that is deemed defective by the competent person is to be tagged and removed from the premises.
- Defective portable ladders must be destroyed. Damaged ladders should be removed from service immediately and labeled with the word – DANGER. The ladder cannot be given to employees or other personnel. Damaged ladders placed in the trash must be rendered useless.
- When performing electrical work that requires the use of a ladder, use a wooden or approved fiberglass ladder. Metal (aluminum) ladders cannot be used.
- When raising a ladder, make sure it will not contact an electrical line.
- Extension ladders should properly overlap between sections.

- Ladders must not be used as scaffold members or for any purpose for which they are not intended.
- Unsecured portable ladders should not be left standing unattended.
- Always use an approved ladder or stool to reach articles high above the floor. Never use a swivel chair or other makeshift device to reach high places.

LIFTING EQUIPMENT & RIGGING

Introduction

Different types of hoisting and rigging devices may be used for lifting, pulling, and moving equipment. If such equipment is ever utilized the lifting contractor shall use certified operators while operating these devices. The safety rules and guidance in this program apply to all operations that involve the use of wire rope, slings, chains, and lifting equipment.

General Safety Rules

At the start of each work shift, operators shall do the following steps before using equipment having wire rope slings and/or cables attached to them:

- Visually inspect the wire rope, eyes and sockets as much as possible; in most instances, this will be done at the work site before starting the job.
- Never overload the lifting equipment or rigging—load capacities must be posted.
- Make certain there are no obstructions between the equipment and where the rope is attached.

- Make certain the pickup line is operating smoothly by lifting the equipment up and downward to verify that the line is in the shieve groove.
- Plan and check the travel path to avoid personnel and obstructions.
- Defective cables and slings shall be tagged out of service until properly repaired or disposed of. Disposal will consist of destruction of defective equipment. The inspector shall initiate corrective action by notifying the company Safety Officer.

General Rigging Safety Requirements

Personnel Precautions

- Must be in the clear at all times
- Must not walk, stand, or work under suspended loads.
- Each person participating in the operation must **BE ALERT!!**
- Watch the crane block, sling and load, and
- Be able to move freely, if necessary.
- **Never ride on a load that is being hoisted.**

General Rigging and Lifting Safety Requirements

Rigging and Lifting is the responsibility of a third-party crane company which are an independent contractor hired by the Client.

- All rigging and lifting equipment shall be stored and handled in a manner that protects the rigging structural integrity.
- All rigging equipment will be inspected immediately prior to use per the manufacturer's recommendation. Furthermore, all rigging will be inspected monthly and these inspections will be documented.
- Do not damage the load being lifted with the lifting apparatus. Utilize padding for soft edges and establish any potential damage to equipment by previewing stress points created by lifting.
- Protect slings from sharp edges. Never set loads down on slings but rather blocking.
- Do not side load: this creates uneven stress points.
- When picking a load, determine sling angle. Lifting equipment rated capacities are different when stressed at different angles.
- Never stand or walk under a suspended load.
- Never leave suspended loads unattended.
- Flagmen and those persons lifting loads will use hand signals that are understood by parties. Radio communication is preferred over hand signals.
- No person may rig a load to be lifted unless they have been properly trained.
- Taglines will be utilized on lifted loads at all times.

- Damaged rigging will not be used. “Damaged” is established by following manufacturer’s guidelines.
- If chains are used for lifting, they must be certified lifting chains and be tagged as to the capacity.
- No one is permitted to make modifications or additions of any sort to lifting equipment.
- The load’s weight will be known before lifting is conducted.
- Attach cable clips properly. “Never saddle a dead horse.” (The clip saddle should be on the load line)
- Lifting eyes and points of attachment will match the structural integrity of the lifting equipment. Never wrap lines around a load to be lifted.
- Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.
- An accessible fire extinguisher of 5BC rating, or higher, shall be available at all Supervisor stations or cabs of equipment.
- Operators must meet the physical qualifications, pass a physical, a written examination, understand and be able to use a load chart as well as calculate loads for the crane type.

CABLE/HOIST SLING SAFETY

Measures are to be taken to ensure the integrity of cables, books, slings, hoists and various devices used in conjunction with these components for lifting. Documented training is required of all authorized users.

Inspection Process

All inspection and operation of lifting machinery and equipment is the responsibility of a third-party crane company hired by the Client Company.

- All metal cables, non-metal slings, and various lifting components must be visually inspected before each use. A documented inspection not to exceed twelve months must also be performed. More frequent documented inspections may be considered based on the frequency of use, severity of service conditions, nature of lifts being made, or experience gained on the service life of slings and cables used in similar circumstance.
- Frayed or damaged nylon slings or wire ropes shall be cut and discarded.
- Lifting cables and their components will be included on the annual hoist inspection report.
- Qualified personnel shall make inspections. Test results and supporting documentation shall be maintained on file.
- Cables, hooks and other devices that do not meet the inspection criteria shall immediately be removed from service.

Rigging Practices

- Critical loads (i.e. approaching 75% capacity of lifting device) should consider implementing a lifting plan.
- Do not damage machines and any soft surfaces of the load with the lifting apparatus.
- Avoid sharp bends in slings and protect slings from sharp edges and abrasions.
- Set loads down on proper blocking –never directly on a sling.
- Do not side load.
- Maintain an angle between the sling and the horizontal greater than forty-five (45) degrees to reduce stress on the sling.
- Attach cable slips properly by making sure the nuts are torqued to manufacturing specifications. The saddle should be on the load cable, the U-bolt on the dead end. Remember: “you can’t put a saddle on a dead horse.”
- Do not stand, walk. Work or reach under suspended loads.
- Do not leave loads unattended at any time. Use tag lines of sufficient length to control the lift.

Rigging Equipment

- Know the safe carrying capacity of sling chains, wire rope, hoists, and other lifting apparatus and do not overload them.
- Immediately discard defective lifting equipment.
- Inspect all rigging equipment before each use.
- Do not tie knots in sling chains, rope slings, or wire cables to shorten them.
- Do not place bolts or other material between links or chain to shorten them.

- Do not place bolts or other material between links of chain to shorten or splice it.
- Do not use rope for rigging or lifting loads except where it is impractical to use other methods.
- Modify lifting equipment only after engineering approval.
- Do not lift or hoist any object of unknown weight.

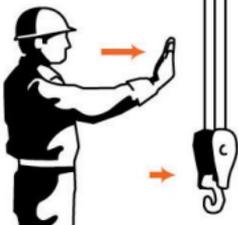
Hand Signals

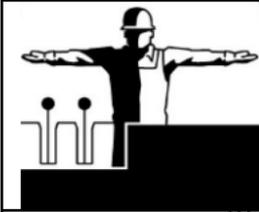
Recommended hand Signals for Controlling Crane Operations.

	<p>Use Main Hoist Tap fist on head, then use regular signals.</p>
	<p>Use Whipline (Auxiliary Hoist) Tap elbow with one hand, then use regular signals.</p>
	<p>Hoist With forearm vertical and forefinger pointing up, move hand in small horizontal circle.</p>
	<p>Lower With arm extended downward and forefinger pointing down, move hand in small horizontal circle.</p>

	<p>Raise Boom Arm extended, and fingers closed with thumb pointing up.</p>
	<p>Lower Boom Arm extended, and fingers closed with thumb pointing down.</p>
	<p>Raise Boom & Lower Load Arm extended and thumb pointing up, flex fingers in and out as long as load moment is required.</p>
	<p>Lower Boom & Raise Load Arm extended and thumb pointing down, flex fingers in and out as long as load moment is required.</p>
	<p>Swing Arm extended, with fingers in direction of swing of boom.</p>
	<p>Extend Boom (telescoping booms) With both fists in front of body with thumbs pointing outward.</p>

	<p>Retract Boom (telescoping booms) With both fists in front of body with thumbs pointing towards each other.</p>
	<p>Move Slowly (Example: "Hoist Slowly") Use one hand to give any motion signal and place the other hand motionless in front of the other hand giving the motion signal.</p>
	<p>Extend Boom (Telescoping Booms) ONE HAND SIGNAL: One fist in front of chest with the thumb tapping chest.</p>
	<p>Retract Boom (Telescoping Booms) ONE HAND SIGNAL: One fist in front of chest with the thumb pointing outward and heel of fist tapping chest.</p>
	<p>Stop Arm extended and palm down, move arm horizontally back and forth.</p>
	<p>Emergency Stop With both arms extended and palms down, move arms horizontally back and forth.</p>

	<p>Travel (One Track – Land Cranes Only) Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that opposite track is to travel (from the crane operator’s perspective).</p>
	<p>Travel (Both Tracks – Land Cranes Only) Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward.</p>
	<p>Travel / Bridge Travel With arm extended forward and hand open and slightly raised, making a pushing motion in the direction of travel.</p>
	<p>Dog Everything Clasp hands in front of the body.</p>
	<p>Multiple Trolleys Hold up one finger for block marked “1” and two fingers for block marked “2”. Regular hand signals to follow.</p>



Magnet is disconnected

Crane operator spreads both hands apart with palms up.



Trolley Travel

With palm up, fingers closed and thumb pointing in direction of motion, jerk hand horizontally.

LOCK OUT/TAG OUT

Introduction

The below information is a generic template for Lockout/Tag out. Applied employees are required to follow clients Lockout/Tag out program. Lockout/Tag out (LOTO) is an energy isolation technique designed to prevent workers from being injured as a result of the unexpected activation of equipment.

Lockout/Tag out training

- Recognition of hazardous energy sources
- Type and magnitude of energy available
- Methods and means necessary for energy control
- Affected/authorized employees (differences)
- Energy isolation procedures
- Re-training in case of new equipment or change in procedures
- New hazards

Note: Disregarding or tampering with tags is strictly prohibited.

Application of Lockout/Tag out

- LOTO is necessary when service or maintenance is being performed on or around machinery that could cause injury with an unexpected startup or release of stored energy.
- Each person with a potential to be injured from the unexpected energization of the machine should place a lock and/or tag on each Energy Isolation Device.

An Energy Isolation Device is a mechanical device that physically prevents a transmission or release of energy; examples include:

- Manually operated electrical circuit breakers;
- Disconnect switches; and
- Blocks or any similar device used to block or isolate energy.
- Push buttons, selector switches and other control circuit type devices are not Energy Isolation Devices.
- Locks are safer than tags and must be used if possible. Tags may only be used if lockout is not possible, such as with most breakers. Tags are not as foolproof as locks and may evoke a false sense of security.

Locks and Tags

- All locks, tags, and fixtures must be supplied free-of-charge by the employer, and they must be standardized within the company.
- Tags must contain a warning statement, such as “do not operate”, and be substantial enough to prevent accidental removal.
- The means of attachment for a tag must be a non-reusable, self-locking, nylon cable tie capable of resisting 50# of force.
- Locks must be substantial enough to prevent removal without excessive force.
- The locks and tags designated by the company for LOTO cannot be used for any other purpose.
- Keyed locks are preferable to combination locks because they are more tamper-resistant.
- Both locks and tags must be durable and capable of withstanding the environment in which they

- are used.
- Locks and tags must be capable of identifying the person who applied the device. When a lock is used with a tag, the function of the tag is usually to identify the person who applied the lock.

Hazardous Energy Control

LOTO is energy control and it applies to all forms of energy, not just electricity. To effectively isolate equipment, workers must be able to recognize all the energy associated with it.

Energy can take two basic forms: **Kinetic** and **Potential**.

Kinetic energy is the energy associated with motion, and it is not usually involved in LOTO accidents because it is easily recognized.

Potential energy is stored energy and is sometimes difficult to recognize. Forms of potential energy include:

- Electricity
- Magnetism
- Compressed gas
- Pressurized liquids
- Heat
- Corrosive chemicals
- Gravity
- Springs under tension
- Steam

Equipment is likely to contain or use several forms of energy, and in some cases, equipment may utilize a single form of energy from multiple sources.

When an isolation device must be temporarily removed, the following procedure must be followed:

1. Clear away tools
2. Remove employees
3. Remove the LOTO device
4. Energize and proceed with testing
5. De-energize and re-apply LOTO device
6. Document who performed the procedure, and the reason it was performed

Removal of Lockout/Tag out

Under normal circumstances, only the “Authorized Person” who applied the energy isolation device may remove the lock and/or tag.

If the person who applied the lock or tag cannot be located, a specially designated Supervisor may remove the device. The Supervisor must verify that it is safe to remove the lock or tag and notify all the “Affected Persons” that it has been removed.

The “Authorized Person” who applied the lock or tag that was removed by the Supervisor must be notified immediately upon their return to the workplace.

Group Lockout

When large numbers of workers are involved in an activity that requires lockout, it is possible to use Group Lockout.

Shift Changes

A procedure to ensure that equipment remains locked or tagged out during shift changes is mandatory. Only the authorized person who applies the lock is authorized to remove it.

OCCUPATIONAL NOISE EXPOSURE

General

Applied Consultants employees are not normally exposed to high levels of sound. Hearing protection must be worn where designated by client.

PERSONAL PROTECTIVE EQUIPMENT

General

Personal protective equipment is designed to be a front line of defense for the employee where engineering controls cannot eliminate a hazard. The purpose of PPE is to shield and isolate the employee from potential hazards that could not be controlled by any other means. The personal protective equipment to be used by workers must be determined based on occupational hazards to which they may be exposed, their activities or the areas where the employees are located.

Compliance

Applied employees are required to provide and wear proper PPE that is designated by the client and documented on JSA before work begins each day. Employers will identify the work areas where mandatory use of personal protective equipment is required.

To ensure that Applied Consultants not only protects its employees, but also stays in compliance with current regulations, the following PPE plan will be utilized:

Personal Protective Equipment is required to protect employees from hazards of process or environment. PPE

will protect body parts from inhalation, absorption or physical contact.

Each employee is properly trained in the use and care of required PPE as instructed by the manufacturer.

The workers must check the conditions of the personal protective equipment before starting, during and after their shift. If the conditions of the PPE is no longer in good working condition, replace it immediately.

Workers will be monitored during the work day to make sure they use the personal protective equipment provided, based on training provided.

Hardhats

- Hardhats are designed to offer the user protection from vertical and horizontal impact and limited electrical protection. All hardhats must be ANSI Z-89 approved.
- Hardhats need to be inspected often to ensure that the liner is not damaged, that the dome has not sustained sun damage, that it is not cracked, or that any modifications have been made. That dome should not be brittle or soft, and there should be no holes whatsoever anywhere on the hardhat.
- The hardhat should be worn with the visor facing forward and the hardhat level on the head.

Eye and Face Protection

Safety glasses must be approved ANSI Z-87.1- Eye and face protection shall be worn where any of the following hazards are present:

- Flying particles;
- molten metals;
- liquid chemicals;
- acid or caustic liquids;
- chemical gases or vapors; and/or
- light radiation

Goggles will need to be worn instead of safety glasses for a variety of reasons. Those being, but not limited to:

- Grinding
- Chipping
- Weed Eating
- Any other activity that could cause an impact hazard of the eye
- Pouring Acid
- Pumping out a sump
- Spraying any type of cleaner or solvent

Face shields are designed to protect the entire face from a splash or flying particle impact. They are never to be worn by themselves without safety glasses or goggles underneath. They are to use when conducting the following or similar tasks:

- Chipping
- Scraping
- Blowing
- Buffing
- Grinding

- Dispensing paints, coatings, or solvents;
- Using pneumatic tools.
- Handling of molten metal (wire mesh face shield behind plastic shield is a must).

Welding Protection

Only approved welding hoods or pancake hoods can be used.

Grinding

You must wear both primary and secondary eye protection when grinding. That means you will wear a face shield and safety glasses or goggles whenever you grind.

Hand Protection

The glove must be fit to the hazard in order to provide the best protection. Common hazards include but are not limited to:

- Abrasions;
- Burns, thermal or chemical;
- Cuts;
- Punctures;
- Skin absorption;
- Temperature extremes

Gloves are not to be worn when working around rotating machinery.

Foot Protection

ANSI Z-41 / ASTM 2412-05 approved footwear is the only acceptable footwear allowed. Some hazards that might be

encountered in the working environment are, but not limited to:

- Falling object
- Rolling objects
- Piercing objects
- Chemicals
- Electricity

You are required to read the PPE Hazard Assessment for your local working environment.

PROCESS SAFETY MANAGEMENT (PSM)

Overview

A set of requirements designed to assure that operations at facilities where chemicals are processed are conducted safely. Process Safety Management (PSM) is an OSHA regulation found in 29 CFR 1910.119.

PSM applies to facilities that use hazardous materials in their processes. The purpose of a PSM program is to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals in various industries, such as refineries, chemical plants or other processing facilities.

Applied Consultants Requirements (as Contractor)

Applied Consultants does not own any Process Safety Management (PSM) systems; however, as a contractor, Applied Consultants employees may work in a PSM facility. When Applied Consultants employees work in a PSM

facility, each employee will follow all applicable PSM rules.

1. PSM requires that operators use only contractors that can perform their work safely.
2. Operators must verify that contractor employees are trained to perform their jobs safely. Applied Consultants will participate in this verification as requested.
3. PSM requires that operators look out for the safety of contractor employees working at their facilities.
4. Per the PSM regulations, so far as safety is concerned, the Supervisor has nearly as much responsibility for contractor employees as they do for their own employees. While this is true, all Applied Consultants employees, by following each safety rule within the PSM facility, will ensure his safety as well as those around him. Applied Consultants employees will follow all client permit and safety considerations.
5. Applied Consultants will insure that its employees follow client's requirement for training and are informed of any hazards present at the operator's facility, such as potential fire, explosion or toxic-release hazards related to his/her job.
6. The exchange of job-specific information will take place during the pre-job Job Safety Analysis and this will be documented.
7. Applied Consultants employees will report all incidents no matter how severe to the client. Applied Consultants will participate with client in their investigation. Incidents will be reported within one hour or sooner as situation dictates. Employees must immediately report all accidents, injuries and near misses.

8. All Applied Consultants employees will adhere to the client's safety work practices implemented in the facility, such as lockout/tag out, confined space entry, opening process equipment, or piping and controls over the entrance to the facility.

Scaffolding Safety

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

Excavation, Trenching, and Shoring Safety

Objectives

To provide guidelines to ensure:

- Personnel are protected during excavation activities
- Clients' facilities are protected during excavation activities
- Requirements of OSHA Standard 29 CFR 1926.650 are met

Scope

All Applied Consultants employees and contractors working near excavations and trenching activities should follow the following guidelines.

Requirements/Guidelines:

- To protect employees against cave-ins, a protective sloping, benching, shielding or shoring system must be installed in each excavation:
- In excavations more than 4 feet in depth or in excavations less than 4 feet if there is any indication of cave-ins, shielding and shoring systems must be designed and constructed to withstand the anticipated loads.
- Contractor performing the excavation will have a Competent Person on-site who can identify existing and predictable hazards in the surroundings, and who can take prompt corrective measures to eliminate such hazards. This person must be on-site during all excavation activities where the potential for employee injury exists.
- The pipeline, all valves, sleeves, and other appurtenances must be properly supported at all

times during excavation, repair, and backfill operations.

Excavations more than 20' feet deep

Excavations more than 20' feet deep must be designed by an engineer educated and certified for excavation projects of this nature.

Before Excavations Take Place

- Review facility drawings/pipeline atlas.
- Place all calls to the states One Call notification system with at least 48 hours' notice and document One Call number for each ticket.
- Contractor will perform line locating operations
- Probe & mark all lines identified
- Consider electrical hazards especially near rectifiers
- Consult with persons that may have information about existing underground facilities (farmers, Gas Company reps, Home owners and others)
- Utilize all possible locating options to identify lines. Possible use of rubber buckets, Pot-Holing services, probing and other options.
- If a utility company or owner cannot respond to a request to locate underground utility installations within 24 to 48 hours, or cannot determine the exact location of these installations, contractor may proceed, only with permission from the client provided Supervisors and equipment operators exercise caution and utilize detection equipment or other acceptable means to locate utility installations.

- Document ALL decisions when digging and exposing lines.

Hazard Recognition and Prevention

An excavation must be inspected daily by the contractor's Competent Person, before anyone enters an excavation, or any work is done and after every hazard-increasing occurrence (i.e. rainstorm, equipment vibration, or pipe move, etc.) to detect:

- Potential cave-ins
- Failure of protective systems and hazardous atmospheres
- Potential for personal injury
- Soil subsidence, cracking, shifting, or water undermining and seepage indicate potential cave-ins.
- Tests should be conducted for air contaminants (oxygen, flammable gases etc. and provide ventilation where necessary.
- Employees must be protected from water accumulation. Such precautions could include a support or shield to protect against cave in, a pump to prevent accumulation, or a harness and lifeline. A competent person must inspect the integrity of the sides of a trench before work may commence where water accumulation is present.
- The competent person will identify any issues with a hazardous atmosphere, fissures / cracking of ditch sidewall, improper access/egress points and the distance between them, spoil pile distance of 2' or more (In USA).

If any hazard is identified, corrective action must be taken immediately. Only the designated contractor competent person is responsible for writing and posting the excavation checklist and making it available at all times while employees are accessing the excavation.

Excavation Requirements and Precautions

- Ladders or ramps (earthen or structural) must be used to enter and exit excavations that are 4 feet deep or deeper.
- Ladders or ramps for access and egress must be positioned at no more than 25-foot intervals. Ladders will be secured at the top to prevent tipping or falling and extend at least 3 feet above grade.
- Keep heavy equipment and vehicles as far away from the edge of the excavation as practical.
- Keep spoil at least 2 feet away from the edge of the excavation.
- Do not lift loads over personnel and personnel should not work under loads while they are being lifted. This responsibility rests with both parties.
- Where employees are required or permitted to cross over excavations, walkways or bridges will have standard guardrails, mid rails and toe boards.
- Unattended excavations must be barricaded. This includes leaving work at the end of the day. Post "Open Pit" signs in clear view along the barricade.
- Atmosphere monitoring is required on trenches 4 feet deep or more if there is a potential for explosive environments, low oxygen content, or other hazardous or toxic atmospheres.

- When trenching is conducted near vehicular hazards, employees will be provided orange or fluorescent green reflective vests. These vests are worn when hazards are present. If necessary, signs and barricades should be installed as well as flaggers and spotters.

Determining Pipeline Location

If any foreign facility is located within the area of proposed excavation, the exact location and depth of the facility should be determined:

- By probe inspections and hand-digging
- In the presence of the Applied Consultants client/pipeline owner
- With as many test pits as necessary
- By electronic line locating devices

Support Systems

- Where the stability of adjacent structures may be compromised by excavation, support systems (shoring or bracing) must be installed.
- Remove or support any surface objects in the area before excavation begins. Do not undermine the base of a foundation, sidewalk, pavement, or similar structures unless a support system is installed.

Soil Classifications

The soil exposed by an excavation may be homogenous or composed of multiple layers with various stabilities. The stability of each layer must be classified as (in decreasing order of stability): Stable rock, Type A, Type B, or Type C. Soil types are defined below:

Stable Rock: Solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Type A Soil: Cohesive soils with an unconfined compressive strength of at least 1.5 tons per square foot (tsf). Examples are clay, silt clay, sandy clay, and clay loam. Soil cannot be classified Type A if it is fissured, subject to vibration, or previously disturbed.

Type B Soil: Cohesive soil with an unconfirmed compressive strength greater than .5 tsf. Type A soil that is fissured or subject to vibration.

Type C Soil: Cohesive; soil with an unconfined compressive strength of .5 tsf or less.

“Mud” is not a soil classification. Soil must be classified based on a visual and a manual analysis.

Protective Systems

Sloping

Where field conditions permit, sloping is the preferred protective system. The slope of an excavation face is expressed as the ratio of horizontal distance to vertical rise (H: V).

All unsupported excavations more than 5 feet deep must be sloped at an angle no steeper than the maximum allowable

slope.

Maximum Allowable Slopes:

Soil/Rock Type	Allowable Slope	
Stable rock	Vertical	(90°)
Type A	¾: 1	(53°)
Type B	1:1	(45°)
Type C	1 ½: 1	(34°)

- Maximum allowable slopes apply to layered soil conditions. However, when a less stable soil layer is located below a more stable soil layer, the less stable soil layer must determine the degree of slope for all of the excavation above the layer.
- Retaining barriers should be installed as needed on the excavation slope to stop and contain any falling rocks, materials, or equipment.

Benching

- The maximum allowable slopes identified in the sloping section may not be exceeded when incorporating benching as a protective system.
- Type C Soil IS NOT allowed to be benched.

Shielding Systems

- Shielding systems are designed to protect employees in case of a cave-in. They are not designed to support the sides of an excavation.
- Pre-manufactured shielding systems must be used in accordance with the manufacturer's recommendations and limitations.

Shoring

- An aluminum pneumatic, aluminum hydraulic, or timber shoring system must be installed in trenches, except stable rock, that are not protected with sloping or shielding.
- Soil must be classified prior to installing a protective shoring system.
- Support members of a shoring system may include cross braces, wales, uprights, and wood and steel sheeting.

Welding, Cutting, and Hot Work

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector. This plan is available if the functions of our Inspectors jobs changes.

Workers performing welding and cutting activities will be informed of the risks they are exposed, through posters, brochures, guides or verbally. Information must be given at least twice a year and records should be maintained containing at least the name and signature of the workers who received the information, the date, topic and name of the person who provided it.

General Requirements

A hot work permit must be issued by the client's representative before hot work is performed:

- Within 150 feet of an area where combustible/flammable vapors or dust are or could exist; or
- Within 35' of a solid combustible material.

Hot work is defined as any work that will generate sufficient heat to ignite combustible and/or flammable materials. Combustible materials are substances that will freely support combustion once ignited. The following activities are examples of hot work; however, there may be more that are applicable at specific locations:

- Welding
- Flame Cutting
- Grinding
- Portable Heaters or Steamers
- Electrical Tools/Equipment (that are not explosion proof or intrinsically safe)
- Sandblasting operations (static charges)

The Client is responsible for the pre-work inspection, and once completed, they must ensure that all work is permitted prior to authorizing the commencement of any hot work. The pre-work inspection and subsequent preventative actions must all be documented.

Hot Work Procedures

- Applied Consultants employees must obtain authorization from the Client's Supervisor overseeing the work before beginning any hot work. Any person may authorize the stoppage of work if there is reason to believe an unsafe condition or situation exists.

- The Client's representative is responsible for supervising hot work must complete the hot work permit before work may begin. (Host facility permits, and gas tests are acceptable provided they meet the requirements of this section.)
- The permit must be reviewed and signed by the person performing the work, the person authorizing the work, and the person approving the work to ensure his/her acknowledgment of the conditions set forth in the permit. If contract personnel are performing the hot work, the contractor's representative at the location where the hot work is being conducted must retain a copy of the permit.
- The person giving approval for the hot work to begin must ensure that the area is periodically surveyed to ensure the conditions remain suitable for hot work. The work area shall be re-surveyed following all breaks, meals, meetings or other interruptions in the work.
- Personal protective equipment is designed to be a front line of defense for the employee where engineering controls cannot eliminate a hazard. Employees performing hot work procedures will wear the proper PPE at all times.
- If the object to be welded or cut cannot be moved, all moveable fire hazards must be removed. If all the fire hazards cannot be removed, then guards shall be used to confine the heat sparks and slag and to protect the immovable fire hazards. If removal and/or guards are not feasible, then the work cannot be done.

- There should be welding booths or screens to delineate areas where welding or cutting activities are carried out, where applicable.
- Operators of equipment should report any equipment defect or safety hazards to their Supervisor and discontinue use of the equipment until it has been inspected, and its safety has been assured. Repairs shall be made only by qualified personnel.
- While working in confined spaces, proper ventilation and lifelines must be utilized, and all gas cylinders must be secured. Buckets will be used for removal of electrodes. Gas cylinders must be able to be shut off immediately in the event of an emergency, and warning signs must be posted at the point of entry. Continuous monitoring should be provided in areas where conditions are likely to change, and in high-risk areas such as in tanks, or a plant's process area.
- Ventilation and/or respirators must be utilized if any employee inside of a work area is welding, cutting or burning lead base metals, zinc, cadmium, mercury, beryllium or any other potentially hazardous metal not listed here.
- If hot work conditions change and a permit expires due to a potential danger (i.e., leak, wind change, evolution of hazardous fumes, gases or dust, lower explosive limit (LEL) reading above 10 percent, etc.), no work will be performed until additional testing is conducted. The source of the hazard must be determined, controlled and the area re-inspected and permitted before work can resume.

- Expired hot work permits will be kept on file at the facility for at least one month beyond their expiration date.
- Permits will not be valid for shifts other than the one in which the work started. Each permit will be dated and will carry an expiration time.
- The checking and testing that precedes the issuing of a permit should be as close as practical to the time the work is to be done. The percent of the lower explosive limit will be recorded on the permit.
- Hot work shall not begin if a lower explosive limit (L.E.L.) greater than 10 percent is measured. No exceptions to this rule shall be made. Non-direct reading instruments are not permitted for hot work or confined space entry jobs.
- Combustible gas indicators will be calibrated prior to performing the gas test. If the meter is to be used multiple times throughout the shift it only needs to be calibrated at the beginning of the shift. The calibration results must be documented and filed appropriately at the location.
- When a fire watch is necessary, he/she must be on duty at all times during the performance of the work.
- In the event the hot work will extend past the permit's expiration time, a new permit must be obtained.
- There must be an ABC type extinguisher within no more than 7 meters in the area where the activities in welding and cutting.
- Welders assigned to operate arc welding equipment must be properly trained and

qualified to operate the equipment. Cutters, welders and Supervisors must be suitably trained in the safe operations of their equipment and/or the equipment for which they are responsible.

Fire

The pipeline contractor is responsible for assigning a fire watch when the welding, flame cutting, grinding, use of portable steamer equipment, etc. is within 35 feet of a potential combustible or vapor source. The fire watch must be trained in the proper use of a cartridge-operated fire extinguisher. The fire watch must also be familiar with the facilities, so he/she can sound an alarm in the event of a fire, where applicable. Supervisors must be familiar with the duties of a fire watch.

A fire-watch must be present when:

- Work is performed at a location where a fire might develop.
- Combustible materials are closer than 35 ft. (10.7M) to point of operation...
- Combustibles are 35 ft. (10.7M) or more away but are easily ignited.
- Wall or floor openings within 35 feet (10.7M) radius expose combustible materials.
- Combustible materials are adjacent to the opposite side of metal partitions, ceilings or roofs.

Compressed Gas Cylinders

Rules for handling cylinders:

- Do not accept damaged cylinders.

- Keep protective caps on cylinders while they are not in use.
- Keep cylinders away from direct flame, heat and sources of ignition.
- Properly secure cylinders at all times. While moving a cylinder, avoid rough handling and the striking of cylinders.
- Cylinder contents must be properly labeled; do not rely on the color of the cylinder and return improperly labeled cylinders to the vendor.
- Close all valves when not in use.
- While in use, cylinder valves must have a handle or other shutoff mechanism.
- Regulators are to be removed from cylinders when not in use unless the regulator is designed to be capped or the cylinders are in an approved welding cart.
- Discharge leaking cylinders outdoors by opening the discharge valve slowly one-fourth of a turn.
- Use proper lifting cradles for cylinders. Do not lift by the valve or protective cap. Ropes and slings are not to be used for lifting cylinders.
- Compressed gas cylinders are not used for any purpose other than for containing compressed gas—bottles, for example, are not to be used as rollers.

Storing Cylinders

- Store cylinders in an upright, secured position, and store empty and full cylinders separately.
- Do not store oxygen cylinders within 20 feet of combustible materials or fuel gases unless divided by a 5-foot fire resistant wall that is fire-rated for one-half hour.

- Mark empty cylinders "Empty" and they can only be refilled by their owner. A cylinder is considered empty when it only has 25 psi of gas remaining.
- Cylinders shall not be subjected to temperatures either above 125 degrees F or artificially created low temperatures.
- Cylinders shall be separated by hazard class. For example, oxidizers must be stored away from flammable gases.

Using Cylinders

- Never use a cylinder of compressed gas without a pressure-reducing regulator connected to the cylinder valve.
- Always close the cylinder valve before attempting to stop leaks.
- Do not use oil or grease as a lubricant on valves or attachments to oxygen cylinders.
- Threads on fitting must correspond to cylinder valve outlets
- Check valves/flare arrestors are to be utilized on fuel gas/oxygen systems.

Storing Cylinders

- Store cylinders in an upright, secured position.
- Do not store oxygen cylinders within 20-ft. (6m) of combustible materials or fuel gases unless divided by a 5-ft. (1.75m) fire resistant wall rated for one-half hour.
- Store empty and full cylinders separately.

Accident/Incident

Incident Investigation Support- Incident investigations are conducted to determine root causes of incidents and to prevent reoccurrence. Investigations are led by Client's management and may involve Legal Department charter. Lessons learned can be amongst business units.

Applied Consultants' employees are never expected to perform work on client jobs outside of the scope of their responsibilities as an inspector.

First Responder Guidelines

- Immediately notify supervision of the situation.
- Assess situation for hazards prior to entering area.
- Isolate hazardous sources if properly trained.
- Ensure emergency services (medical, fire, etc.) are notified and in route.
- Render first-aid to injured parties if needed.
- Secure the incident scene and preserve physical and documentary evidence.
- Institute incident management system.
- Assist in incident investigation, if requested.

State or Federal Agency Inspection Procedures

When any State or Federal Agency Inspector arrives, employees having the initial contact should:

- Verify the inspector's credentials and agency involved (local, state, tribal federal).
- Notify your Supervisor and EH& S representative or other Client Operational Support Personnel immediately.

- Conduct and document a Safety Orientation for the facility.
- Defer inspection until Supervisor arrives, if possible if unable to contact Client, proceed.
- Determine basis/purpose/type of inspection
- Follow all safety procedures during inspection (PPE, rules, etc.).
- Maintain detailed record of inspector's activity.
- Record same physical measurements and take same photographs as inspector does.
- Permit review of records related only to inspection.
- Avoid answering question(s) that are not understood.
- Request abatement recommendations in closing conference.
- Do not volunteer any information not specifically requested by inspector.

Note: Employee has the right to refuse to be interviewed and the right to request the presence of a Company representative when participating in an agency inspection.

Travel Safety

Applied employees should plan for safety during travel, giving consideration to vehicle safety, hotel safety, and avoidance of locations/situations where they have a potential to become a victim of crime. It is recommended that a copy of your travel itinerary be left with your home office or Travel Services. If itinerary changes, immediately notify your home office or Travel Services.

Hotel Safety

- Enter hotel through main entrance, if possible.

- Keep room key with you always. Avoid displaying your room number.
- When retiring for the night leave room key on top of nightstand for immediate access.
- When possible, avoid ground floor rooms to prevent entry through the window.
- Inspect your room upon entering, and then secure the door.
- Verify hotel personnel with the front desk before allowing entrance into your room.
- Notify hotel management of suspicious activity.
- When leaving your room, turn the radio or television to a moderate volume.

Hotel Fire Survival Checklist

- Familiarize yourself with the hotel fire plan
- Locate the two closest exits to your room and make sure they are clear and operable.
- If the exit is not at the end of the hall, count the number of doors between your room and the exit
- Check window for alternative escape route
- Test doors for heat before opening and always take room key.
- Proceed to nearest stairway exit (not elevators)
- Crawl 8-12 inches above the floor to avoid smoke inhalation.

If trapped in your room:

- Notify front desk that you are still in your room.
- Fill bathtub with water to use for firefighting and the soaking of towels/bedding use wet towels and sheets to seal cracks
- Make a tent to provide fresh air if possible
- Open window to vent the room

International Travel Precautions

- Employee is responsible for completing a “Personal Profile” with Corporate Security prior to traveling internationally.
- Health Services will provide medical briefing, supplies and emergency instructions prior to travel
- Avoid conversations with strangers concerning your company, position, or purpose of trip.
- Do not write your company name in passports
- Carry an extra passport copy and photo in luggage.
- Pack any controversial material, business cards or records in luggage.
- Travel on US based airlines where possible.
- Do not make reservations in the company name international travel.
- Always keep your possessions in your sight
- Dress inconspicuously.

Personal Security Precautions

- Do not attempt to fight if robbed at gunpoint or knifepoint
- If you suspect you are being followed, quickly proceed to a public area
- Avoid carrying keys with attached identification and markings
- Limit the number of credit cards and amount of cash you carry
- Obtain necessary foreign currency or traveler’s checks and avoid displaying currency
- Refrain from taking short cuts through unknown areas, alleys, etc.

- Know your associates and inform others when going out.

Vehicle Security Awareness

- Check the vehicles safety equipment frequently and try to always keep the gas tank at the minimum one forth to one half full.
- Park in well-lit areas, or the safest area possible.
- Always drive with the windows up and the doors locked when in a suspicious or unsafe area
- Have keys ready when approaching the vehicle
- Check around the vehicle before approaching it
- Look inside the vehicle before entering it
- Use good judgment when stopping for stalled cars

Workplace Security

- Keep items of value secure in a locked file or desk drawer.
- Wear badges or identification cards so that they are visible, when required by location management
- Periodically review all security and emergency operation and evacuation procedures

Ensure that:

- Visitor passes are used
- Personnel properly greet and/or challenge strangers
- Gates remain locked, or otherwise secure, when not in use
- Alarm systems are tested and working according to specifications
- Specific lock-up procedures are followed

- Someone is responsible for checking all doors and windows to make sure they are closed and locked every night
- Surveillance cameras are active for all exits and entrances.

In addition to other procedures/precautions in this manual, the following safety precautions should be followed when working in an office environment. There may be other site-specific procedures or requirements, so check with the Health & Safety Department or Facility Operations.

Precautions

- Each employee shall be familiar with the location and use of the fire alarm pull station nearest to his/her workstation and how to activate the emergency notification system.
- Each employee must become familiar with the appropriate evacuation route for his/her workstation. Evacuation routes for each floor and building area are clearly marked in prominent locations.
- During evacuations, **DO NOT USE ELEVATORS!** Use the stairwells, following the nearest exit signs and evacuation drawings. Check closed doors for temperature and smoke before opening.
- Keep all passageways, entryways, aisles, storerooms, service rooms, and work areas clean, orderly, sanitary and well maintained, with no obstructions.
- Aisles and hallways shall provide unobstructed movement and immediate access for fire protection personnel and equipment.

- Keep flammable or combustible material and residue in a building or operating area to a minimum. Store in metal safety cans or storage cabinets that meet underwriters Laboratories, Inc., or Factory Mutual approval.
- Safely stack material/boxes (limited in height) without blocking sprinkler heads, fire exits, fire extinguishers, electrical control panels, etc.
- File drawers and desk drawers shall not be left open. Do not overload top drawers to prevent cabinets from tipping over.

Personnel working in an office environment are not immune to occupational injuries or illnesses. The following checklist should be utilized in all company office areas on a periodic basis.

All OSHA and Worker's Compensation notices posted. This includes:

- OSHA 2203 or 3165 poster or State equivalent
- Access to Employee Medical Records
- Workers Compensation
- OSHA 300A Summary (Posted Feb. 1- May 1)

Accident Investigations

To maintain a safe and healthy campus/work environment, a thorough accident investigation should be undertaken as soon as practical after an accident or incident in order to initiate and support corrective and/or preventive actions.

The Accident/Incident Report and Investigation Form should be completed by the employee's supervisor with the

employee. The report requires the signature of the supervisor and employee. For accidents/Incidents which require medical attention, or lost or restricted work, the report must be signed by the Divisional Vice President. Completed reports are to be sent to the Director of Human Resource.

Directions: To access the Accident/ Incident Report and Investigation Form go to the company website www.appliedconsultants.com and click the safety tab.

Accidents or incidents that require medical attention or lost or restricted work require the signature of the Divisional Vice President. Attach additional sheets as necessary. Send completed forms to the Director of Safety.

Safe Return to Work

Applied Consultants employees will be entered into the Return to Work Program upon medical certification that the employee may return to some type of work duty. Written return to work authorization must be obtained from the preferred medical provider through Axiom Medical. Every attempt should be made to modify the employee's current job to meet restrictions. Any modified work being offered must be consistent with the medical restrictions listed by the health care provider. Physical demands are assessed for modified duty jobs to ensure they can be performed safely by injured employees.

Applied Consultants will work hand in hand with local approved health care providers to ensure that injured employee received adequate treatment/ therapy. If/when this is not practicable, a standard letter will be drafted that outlines the company's modified work opportunities. Injured employees will take this letter with them when they visit their health care provide.

The Workers' Compensation Administrator and the treating physician shall make the final decision, with input from the injured employee's supervisor and Human Resources Manager, as to when an employee returns to work in either his/her original position, a transitional work assignment, a permanently modified job or a re-assigned position. Any Medical records should be kept by the employer strictly and only on a need to know basis. All records related to the injury will be kept by the Safety department and in a secure filing cabinet. Records include but are not limited to incident report, photos of injury or incident, medical records, and/or drug screens.

Injured employees should be under the direct supervision of the supervisor in the area in which he/she is working. Under the supervision of the supervisor, medically fit goals should be made as the employee continues to work towards coming back to work full time under the physicians' orders.

Safe Return to work policy is communicated through reviewing ACI's New Employee Orientation and safety manual that every employee receives during onboarding process.

Fatigue Management

The purpose of this policy is to implement work practices that will foster employee safety by ensuring employees are provided adequate time for rest between shifts to promote alert, well rested, and productive employees. The key to this program is to proper implementation.

Roles and Responsibilities

The success of this program is contingent upon the successful implementation and compliance with the rules, and intent of the policy. Everyone on a jobsite, including employees and contractors, plays a critical role in the success of this program.

Management

Management holds the fundamental responsibility for controlling the risks associated with fatigue. While everyone's participation is necessary to maximize the benefits of this program, it is ultimately management's responsibility to ensure that the control measures are implemented and utilized. Adequate resources should be provided to allow the plan to be properly implemented.

Employees

Applied Consultants, Inc. employees are responsible for ensuring that their behavior does not create or exacerbate risks. They should ensure that they use the opportunities provided to obtain sleep, report occasions when adequate rest is not obtained and do their best to remain fit for work. Employees in safety critical positions are to report any fatigue/tiredness and lack of mental acuity to supervision, as well as supervisory personnel, to make safety critical decisions and take appropriate actions to prevent.

New Hire Orientation / Safety Training Modules

New Hire Orientation

Upon hire Applied Consultants Inspector are required to complete the New Hire Orientation Training video in Veriforce. This training video takes you through Applied's policies and procedures. In addition to this video each new hire is required to complete 15 assigned safety modules.

Monthly Safety Modules

As part of the Applied Consultants, Inc. Safety program, each employee is required to complete and pass 3 Veriforce safety topics.

This training allows us to stay compliant with our clients request as well as OSHA's mandatory annual training requirements.

Inspector Pay Agreement

Holiday Pay – Holiday pay varies based on the client you are working for.

Personal Time off - Any PTO taken during projects will be at the inspector's expense and will not be paid unless approved by the Client in advance.

Falsifying Timesheets - If a timesheet is filled out incorrectly, the inspector will be responsible for reimbursing Applied Consultants in the event that the Client was overcharged due to the inspector's negligence. The funds will be collected from the inspector's paycheck.

Early Termination/Premature Departure – If an inspector is terminated, released or chooses to leave the project before successfully completing the assigned project within 30 days of the initial start date, no demobilization will be granted and Applied Consultants along with the Client have the right to withhold any accrued charges for mobilization, drug screen, background check, safety training, OQ training, assigned equipment or any other expenses required for completion of the pre-employment process from the inspector's last paycheck.

Utility Vehicle (ATV/UTV) – Applied Consultants, Inc. requires prior approval from client/operator for all ATV/UTV reimbursement. After approval, the inspector will only be reimbursed when the ATV/UTV is being used on client/operator's easement/property. All ATVs/UTVs are to be used in accordance with all state and local laws and in accordance with the ATV/UTVs specific owners' manual.

Monthly Safety Modules –As part of the Applied Consultants, Inc. Safety program, each employee is required to complete and pass 3 Veriforce safety topics. This allows us to stay compliant with our clients’ request as well as OSHA’s mandatory annual training requirements

Acknowledgement Page

I acknowledge that I have received, read, and understand the contents of the 2018 Health & Safety Handbook, which serves as a reference for the minimum rules and standards for all Applied Consultants Business Units.

Print Name

Signature of Recipient

Date

Remove and return this page to Applied Consultants via fax, **903-643-2063** or email, timesheet@appliedconsultants.com, or mail, **2100 N. Eastman Rd., Longview, Texas 75601**.