Welcome to PPG Industries, Lake Charles, Louisiana. We are pleased to have you as part of our workforce and hope that your time spent here will be safe, productive and rewarding. This manual is intended to be a guide to the safe work practices that comply with both state and federal guidelines to promote a safe working environment for all employees at our facility.

Our goal at PPG is always "Zero Accident Performance". We are firmly committed to the idea that all accidents are preventable. Be continually aware of the hazards around you and your jobsite; watch out for yourself and for others; report any unsafe condition to your supervisor immediately!

PPG strongly encourages all of its contractors and their subcontractors to participate in the PPG Contractor Safety Forum. The Forum is a partnership between PPG and its contractors to promote a safety culture that provides for an accident-free and environmentally safe workplace for those working at the PPG facility.

Please read and examine this manual thoroughly to ensure you are fully aware of its contents. Accidents can be avoided by familiarizing yourself with proper safety procedures and adhering to specific safety guidelines. Do not take shortcuts with safety.

The following is a link to the most current PPG Safety Procedures
If a question arises between requirements in this manual and the current PPG Safety Procedure, the current PPG Safety Procedure will be followed.

Unsafe actions devalue your life and the lives of those around you. Remember - at PPG, we care about YOU!
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I. INTRODUCTION

This safety manual contains the minimum safety rules and procedures for the performance of work by Contractors and their subcontractors as required by the Chemical Division, PPG Industries, Inc. Contractors assume the full responsibility and liability for the safety of their agents, and employees and for the compliances of its subcontractors. Any exception to the rules set forth herein must have prior written authorization from the Owner. The Owner is established as PPG Industries, Inc.

In addition to the rules set forth herein, Contractors working in or near an existing operating facility must be cognizant of and conform to Owner's safety rules for the area and any federal state, or local laws governing.

Should any procedure set forth herein conflict with applicable federal, state, or local laws, the latter will apply.

Contractors unable or unwilling to secure personnel whose performance is in keeping with these rules will not be acceptable. Contractor's supervisors and employees who do not exhibit support in word and action for performing work safely and complying with established safety procedures will be unacceptable. EMPLOYEES WHO LEAVE A JOB DUE TO SAFETY VIOLATIONS WILL NOT BE ALLOWED TO RETURN TO OWNER'S WORK SITE WITHOUT PRIOR AUTHORIZATION FROM THE OWNER.

Contractors and their employees are required as of February 15, 1993, to have successfully completed an eight hour safety awareness and training program or an approved reciprocal program. This program is administered by the Safety Council of Southwest Louisiana for this area.

A. Contractors' Supervisors

Supervisors are responsible for the action of their workers and are required to insure that all federal, state and Owner's safety standards are followed during the duration of work on PPG properties. In addition, they will:

1. Set an example in matters of safety.

2. Personally observe and correct safety violations or any potential work hazards.

3. Take necessary corrective action against employees who violate safety standards.
4. Acquaint employees with safety standards.

5. Personally assist in accident investigations.

6. Report all accidents, near misses and fires.

7. Correct all hazards or violations observed by Safety Department or Project Engineer in an expeditious manner.

8. Provide employees with material and equipment that are adequate to perform their job safely.

9. Maintain their work sites in an orderly manner by insisting on good housekeeping.

10. Maintain continuous safety planning to cover job where circumstances have changed and new hazards require new controls.

11. Not use or allow to be used any plant system, tools, or equipment without written permission of Safety Department or Project Engineer.

12. Conduct safety meetings.

**B. Contractor’s Employees**

Employees will abide by all safety regulations and be advised that repeated safety violations, accidents, or abuse of PPG properties will be grounds for dismissal. The following requirements must also be met:

1. No horseplay.

2. No running in plant.

3. Proper dress; no sleeveless shirts (tank tops, etc.).

4. Signs and barricades honored.

5. No unsafe short cuts, such as walking pipelines or cable trays, sliding down pipe stanchion, or jumping from transport vehicle while moving.

6. No loitering or wandering through operating units.
7. Possession or use of drugs or alcohol will mean immediate termination.

8. No sleeping in plant.

9. No modifying of personal safety equipment.

10. Never jump from platform, scaffolds, or other high places.

11. Tools, materials or equipment must not be intentionally dropped or thrown from one level to another.

12. During transport, hard hats, safety glasses and respirators will be worn unless inside an enclosed cab.

13. Attendance to safety meetings is required.

14. Effective October 1, 2010 smoking and the use of tobacco products will be prohibited on all PPG property.

C. PPG Field Engineers

Enforcing safety regulations is one of the functions of PPG Field Engineers. Should there be a difference of opinion between a Contractor and a Field Engineer regarding safety, the decision of a PPG Safety Coordinator will prevail. In addition, the Field Engineer:

1. Controls the issuing and "pulling" of permits.

2. Approves "Lockout" procedures prior to beginning of work.

3. Assists in accidents, near misses, property damage and fire investigations.

4. Will be the first PPG person Contractors contact for safety variances.

5. Will be kept advised of all work activities, scheduled or unscheduled.

D. PPG Contractor Safety Coordinator

The primary responsibility for job and employee safety rests upon the Contractor. The Owner is represented by the PPG Contractor Safety Coordinator. In matters requiring an interpretation of federal, state, and Owner's safety standards, policies or guidelines, the Safety Coordinator
will prevail. In addition to monitoring regulator compliance with all safety requirements the Safety Coordinator will:

1. Inspect as needed, the job site for safety violations and require needed corrections from Contractor Supervisors.

2. Stop any job where an immediate danger exists.

3. Be involved in any deviation from established safety standards or guidelines.

4. Request a review, by Field Engineering Management, of repeated safety violations or accidents, incurred by Construction Supervision or employees.

5. Provide information or advice as required by supervision.

II. GENERAL INFORMATION

A. PPG Reportable Incidents

A PPG Reportable Incident is defined as an event or sequence of events resulting in harm to people, the environment, process, product or company image. Employee Health & Safety (EHS) incidents include: work-related occupational injuries/illnesses, environmental spills/releases, environmental compliance and legal action events, fires, explosions, property damage, and process safety events.

1. The PPG Contractor Safety Coordinator along with the Construction Engineer will be notified immediately in the event of any death occurring within the facility. The PPG Contractor Safety Coordinator will contact the PPG Safety and Health Manager with pertinent information as it becomes available. The Contractor Safety Coordinator will also be notified immediately of any occupational disease, disabling injury or potentially significant injury to a Contractor’s employee (whether or not it is determined that a “disabling injury” will be involved) while at work on Owner’s site.

2. PPG Reportable Incidents will be extensively investigated by the Contractor Safety Coordinator in cooperation with the Field Engineer and the Contractor. A Root Cause Analysis is required if any of these events occur. It is expected that PPG personnel be intimately involved in the investigation and RCA process including corrective actions. A preliminary written report must be submitted to
the PPG Contractor Safety Coordinator by the contractor by the close of business the day following the incident.

3. For all Non-Reportable injuries, a written report must be submitted by the Contractor's supervisor on injury requiring medical treatment of any kind to the Contractor Safety Coordinator no later than close of business of the day following the injury.

4. It is expected that all employees must report injuries to their immediate supervisor even though it may not be considered significant. It is important to capture and address minor injuries before they escalate.

5. Again, it is expected that all "near misses" involving employees or equipment must be reported and a report filed. Investigation will be made by the principal Contractor's Supervisor and the Field Engineer. Near misses bearing the potential of employee injury or Owner property damage will involve the Contractor Safety Supervisor.

6. All fires must be reported to the Field Engineer regardless of duration or extent. The Contractor Safety Coordinator in conjunction with the principal Contractor will investigate each occurrence and a written report will be submitted to PPG.

B. Drugs, Alcohol, Tobacco, Firearms, and Cell Phones

1. The possession or use of drugs or alcohol will not be tolerated anywhere on Owner's property, including parking lots.

2. Firearms will not be brought onto Owner's properties, including parking lots.

3. All tobacco products and their use are prohibited within the Lake Charles facility. Products may be stored in personal vehicles in the contractor parking lot but may not be used while on PPG property.

4. Camera cell phones are prohibited in the Lake Charles Plant. Camera cell phones may be stored in personal vehicles in the contractor parking lot but may not be brought into the Plant area.

5. Cell phones may not be used while driving a vehicle or other piece of equipment. The vehicle or equipment operator must pull off of the road and stop the vehicle prior to answering a call or placing a call.
6. Violators are subject to immediate termination.

C. Employee's Break Areas
   1. Areas will be assigned by the Field Engineer.
   2. No sleeping is allowed.
   3. Employees must remain in assigned area and not wonder about operating units.

D. Safety Meetings
   1. Contractor's supervisors will hold a documented weekly gang box" safety meeting.
   2. The topic will be listed and each employee shall sign his or her name and badge number.
   3. A completed copy will be submitted to the Safety Coordinator by 10:00 AM of the following day.

E. Security
   1. The Owner bears no responsibility for tools, equipment, vehicles or personal items brought onto Owner's property.
   2. All construction employees and vehicles entering or leaving Owner's property are subject to search without notification.
   3. Tools and equipment should be marked with Contractors identification.
   4. Tools and equipment, including leased items, entering or leaving plant require a gate pass from Owner's Materials Manager.
   5. Contractors are responsible for securing their tools and equipment on job site.
   6. All losses of tools, equipment or break-ins must be reported immediately to the Field Engineer.
   7. Lay-down areas will be assigned by Field Engineer.
   8. Cameras are not allowed in plant unless written permission is given from the Plant Construction Engineer.
9. All Contractor vehicles must have some type of identification (painted sign, logo, magnetic sign, etc.) attached to both sides before entering Owner’s plant. The magnetic hat will be an acceptable substitute for short term visits.

F. Temporary Construction Trailers

1. Location and set-up will be controlled by the Field Engineer.

2. Safety packet details method for trailer set-up, protection for weather and plant hazards.

3. No flammable or combustible liquids shall be stored in or around trailers.

4. Areas around trailers shall be kept clean and in an orderly manner.

5. Trailers should be locked when unoccupied.

G. Vehicle and Traffic Regulations

1. Automobiles and trucks permitted to enter plant will be limited. Permission will be controlled by Field Engineer.

2. Transport vehicles or trailers will be equipped with acceptable benches. No employee will stand during transport.


4. No employee shall ride atop equipment or materials being transported.

5. Vehicle routes to and from work site will be assigned by Field Engineer.

6. Vehicles or equipment shall not be left running while unattended.

7. Speeding or other reckless acts will not be tolerated.

8. A flagman is required at all intersections for ribbed cranes traveling with boom down.

9. When moving a telescoping boom crane without load, boom must be fully retracted.
10. Hauled materials that overhang the sides or ends of a truck shall be red-flagged at the extent of the overhang.

11. Dragging or skidding material and objects along plant roadways is prohibited.

12. Taglines must be used when moving equipment or materials by mobile crane.

13. No reading material or radios are allowed in crane cabs.

14. No vehicle or equipment will be left in emergency lanes unattended.

15. All plant traffic signs and signals will be obeyed.

H. Working in an Operating Unit

1. No Contractor’s supervisors, employees, agents, or subcontractors shall use or cause to be used any plant systems without written permission from Project Engineer.

2. Contractor assumes full responsibility for preventing the release of any contaminating substance into plant air space, surface drainage, sewers or adjacent waterway by his employees or their actions.

3. Work on or having direct bearing upon operating systems will require full adherence to existing Owner’s Safety Regulations in that area (see Lockout Procedures).

4. Contractors shall be aware of chemicals or products existing in a work area and are responsible for advising their employees and providing suitable personal protective equipment. Material safety data sheets are available at controlling control room.

5. No unscheduled work will take place within an operating unit.

6. No equipment, materials or tools will obstruct or create a safety hazard to Owner’s operating personnel.

III. SAFETY REQUIREMENTS

A. Housekeeping

1. Contractors shall maintain their work area in an orderly manner.
2. Routine clean-up is required. Failure will result in Owner hiring this service done and back charging the Contractor.

3. Lay-down areas will be kept in order and clear of vehicles or foot traffic.

4. Spills will be immediately cleaned up.

5. Contractor will provide containers for trash and scrap materials.

B. Personal Protective Equipment

Hard hats, safety glasses, and respirators shall be worn correctly and not modified in any manner. Contractor will be back charged for abuse or loss of Owner issued equipment. Equipment furnished by Contractor shall meet OSHA standards.

1. Head, Eyes, and Face
   a) Hard hat welding is required.
   b) Owner will not provide prescription safety glasses.
   c) Goggles must be worn when:
      (1) Working FRP or foam glass.
      (2) Working on system, which contained toxic or corrosive chemicals.
      (3) Entering designated goggle areas.
      (4) Handling chemicals.
   d) Safety glasses will be worn under face shields and under welding hoods.
   e) Face shields will be worn when chipping, buffing, grinding, handling hot tar or mastic, or using port-a-bands.
   f) Persons in close proximity to employees performing work, requiring goggles or face shields, must also wear them.

2. Ears
   a) Approved hearing protection will be worn in all designated areas identified by signs.
b) Approved hearing protection must be worn when operating high noise level equipment.

3. Respiratory

a) Contractors are responsible for providing acceptable respiratory protection for their employees as outlined in Table E-4, 1926.103 of OSHA Standards for Construction Industry.

4. Hands

a) Gloves - Suitable gloves are to be worn on all work where hand injuries are likely to occur.

(1) Chemical gloves - Coated gloves are for special type work (Example: Solvents, corrosives).

(2) Dielectrically tested lineman rubber gloves are to be used on all power line work and when there is possible contact with energized circuits.

(3) Leather gloves - Leather or specially treated flame retardant gloves must be used while welding or performing similar flame work. Plastic, cloth or similar gloves of combustible material shall not be worn.

(4) Cotton gloves - for general purpose work.

b) Tool Holders - Use tool holders when driving stakes, wedges, holding drills, chisels, or similar type tools when more than one person is involved.

c) Tag Lines

(1) Tag lines are to control loads and keep personnel away on all lifts made by mechanical equipment. HANDS OFF LOAD!

(2) Do not wrap tag line around your hands or body.

(3) Shall be used on all loads to control swing.

(4) Suspended loads must be tied off while being moved by a mobile crane.
5. Body
   a) Fire retardant clothing that meets or exceeds NFPA 1975 standard, must be worn in the following areas:
      (1) Derivatives (Plant B)
      (2) When performing energized electrical work.
      (3) Other designated areas.

6. Feet
   a) Safety-toed shoes are required.
   b) Canvas shoes, sneakers, sandals or similar type shoes are not allowed.
   c) Safety-toed rubber boots are required for employees working in acid and caustic areas.
   d) Dielectric boots are required in chlorine cell rooms.
   e) For additional foot protection, metatarsal caps will be required on certain operations. (Ex: concrete breakers, tampers, and similar equipment).

7. Safety Belt and Lanyards
   a) Are to be worn by employees when performing work in elevated positions where the use of scaffolds is impractical and where a slip might result in a serious fall. Lanyards are to be attached, above the employee, to an object of sufficient holding strength. Lanyards should be tied off to result in a minimum fall. Lanyard length will be such that it will permit a fall of no more than 6'. Use anchor points which can stand 5,000 lbs, “bomb proof anchor point.” See Fall Protection http://www.ppg.com/corporate/purch/Documents/4301-06-491.pdf
   b) See Section IV.A.3 Job Requirements \ Permits \ Confined Space

8. Safety Nets
a) Safety nets shall be installed when work places are more than 25 feet above the ground or water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts are impractical.

b) Where safety net protection is required, no operation shall be undertaken until net is in place and has been tested.

c) Nets shall extend 8 feet beyond the edge of the work surface where employees are exposed.

9. Working On or Near Water

a) Personnel must wear Coast Guard approved life jackets, or otherwise be protected by handrails or lifelines, when working near water wherein a drowning hazard exists.

C. Tools

1. Hand Tools

a) Contractor shall not issue or permit the use of unsafe hand tools.

b) Wrenches, including adjustable, pipe end and socket, shall not be used when jaws are sprung to the point that slippage occurs.

c) Impact tools, such as drift pins, wedges and chisels, shall be kept free of mushroomed heads.

d) Wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

e) Non-insulated conductive tools shall not be used in or around live electrical wiring.

f) Tools shall not be used for other than their designed purpose.

2. Power-Operated Hand Tools

a) Contractor shall not use or permit the use of unsafe power operated hand tools.
b) All manually held pneumatic, electric-power or hydro-blast tools shall be equipped with a "dead man" type control which shall not be locked or secured in the "on" position.

c) When power-operated tools are designed to accommodate guards, they shall be equipped with such guards when in use. Guards shall not be modified.

   (1) An exception will be made for hand held grinders. Guards may be removed to accommodate flexible sanding discs. Goggles must be worn when using a grinder in this configuration.

d) All electric powered tools shall be either of the approved double-insulated type or grounded. Use of electric cords for hoisting or lowering of tools shall not be permitted.

e) Pneumatic power tools shall be secured to hose or whip by some positive means. A cotter pin is best. Sixteen (16) gauge wire is acceptable.

   (1) Safety clips or retainers shall be securely installed and maintained to prevent attachments from being accidentally expelled.

   (2) Air pressure must be valved off and bled down before adjusting, changing tools, or disconnecting the hose.

   (3) Manufacturer's safe operating standards for hose, pipes, valves, filters, and other fittings shall not be exceeded.

f) Fuel powered tools shall be stopped while being refueled, serviced, or maintained.

   (1) Fuel will be transported, handled and stored according to Owner’s standards.

   (2) When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment are required.

g) Power-activated fastening guns shall be used only with permission of the Field Engineer.
(1) Tools shall be used with the correct shield, guard or attachment recommended by manufacturer.

(2) Barricade tape shall be used to isolate the area.

(3) Tools may require the use of an Ignition Source Permit. Check with the Field Engineer.

(4) Only duly qualified and certified personnel with proper JSI (Job Safety Instructions) will use such tools.

(5) Gun and cartridges will be secured to prevent use by unauthorized personnel when not in use.

h) Floor stand and bench mounted abrasive grinders shall have acceptable safety guards.

(1) Maximum angle of wheel exposure:

(a) 90 degree above horizontal plane.

(b) 125 degrees below horizontal plane.

(2) Work rest are required and shall be adjusted to no more than 1/8-inch from wheel.

(3) Daily inspection shall be made to insure safe conditions of wheel.

(4) Grinder shall be secured to disallow "walking".

D. Equipment

1. Portable fuel tanks and oil filled equipment

a) Portable tanks brought into the Lake Charles Complex for diesel or gasoline shall be double walled.

b) Notification to PPG’s Environmental Department is required when certain oil filled equipment is brought into or taken out of the facility.

(1) This includes any storage container with a capacity of 55 gals or greater (include item 1a. above) as well as any non-self powered equipment that has 55 gals or greater capacity. Example: A large generator with
accompanying fuel tank(s) equal to or greater than 55 gals.

(a) **Note:** EPA exempted motive power containers from the SPCC regulations. A motive power container is any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. Examples of motive power containers include trucks, automobiles, bulldozers, aircraft, cherry pickers, self-propelled cranes, self-propelled heavy vehicles, and locomotives. These do not need to be reported to the Environmental Department.

(2) The entry notification shall include:

(a) Date entering the facility.

(b) Description of the equipment.

(c) Location to be used.

(3) Notification shall be made when the equipment leaves the facility. It shall include equipment description and the date the equipment leaves the Plant.

2. **Air Compressors**

   a) All compressors, Contractor owned or leased, shall enter plant in an acceptable operating condition.

   b) All fueled compressors shall have a "kill switch" in working order.

   c) Location of compressors shall be as near to work as possible for reducing hose use.

   d) Noise level will be considered when locating compressor.

3. **Concrete and Concrete Forms**

   a) Pumpcrete or similar systems using discharge pipes shall be provided with pipe supports designed for 100% overload. Compressed air hose shall have fail-safe joint connectors.
b) Powered and rotating type concrete toweling machines that are manually guided shall be equipped with a "dead man" switch.

c) Riding of concrete buckets for any purpose is prohibited and vibrator crews shall be kept from under concrete buckets suspended from cranes or cableways.

d) Formwork and shoring shall be designed, erected, supported, braced and maintained so that it will safely support all vertical and lateral loads that may be imposed upon it during placement of concrete.

e) Heating equipment for freeze protection of concrete must be approved by the Safety Coordinator prior to use.

4. Earth Moving

a) The following types of earth moving equipment: scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment will be equipped with seat belts.

b) All earth moving equipment shall have a service braking system capable of stopping and holding the equipment fully loaded.

c) Pneumatic-tired earth moving haulage equipment (trucks, scrapers, tractors and trailing units) whose maximum speed exceeds 15 miles per hour, shall be equipped with fenders on all wheels.

d) All bi-directional machines, such as rollers, compactors, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operational condition.

e) All rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders, with or without attachments, which are used in construction work shall be equipped with rollover protection structures meeting minimum performance standards as outlined OSHA 1926.1001.
5. Gas Cylinders
   a) Compressed gas cylinders shall be handled with care, properly supported in an upright position away from any source of heat or flame and securely tied off. All cylinders not in use or being transported shall have their caps in place.

   b) All cylinder connections shall be checked frequently by users for leaks with a leak detecting solution or soapy water.

   c) Cylinders shall be stored in groups according to the type of gas and a sign will be posted designating each group.

   d) Oxygen and acetylene cylinders, full or empty, shall not be stored together (20 feet of separation or 5 ft high firewall rated for ½ hour).

   e) Empty cylinders shall be returned to an appropriate storage rack.

   f) While transporting cylinders or cutting rigs with a winch truck, the regulators shall be removed and the protective caps placed on the cylinders.

   g) Cylinder valves must be closed when cylinders are not in use and the hose pressure must be bled down.

   h) Acetylene valves must not be opened more than one and one half turns.

   i) Oxygen valves must not be opened more than one and one half turns.

   j) Gas cylinders shall not be placed beneath welding or burning operations.

   k) Cylinders shall not be transported in the bed of a pickup truck unless they are firmly secured in an upright position that will prevent the cylinders from falling.

   l) Under no circumstances shall a gauge be installed on an oxygen line unless the dial is clearly labeled "Oxygen - Use No Oil".

6. Hoisting Equipment
See **Rigging and Lifting**

a) Contractor is responsible for a safe operation of hoisting equipment. The Contractor shall verify weights of loads to be lifted. No load shall be lifted which exceeds the manufacturer’s rated capacity of the crane.

b) All hooks shall have a safety latch or shall be "moused" with material of strength equivalent to a safety latch.

c) Operator shall not leave his position at the controls while the load is suspended.

d) Belts, gears, shafts, pulleys, sprockets, spindles, drums or other reciprocating or rotating moving parts shall be guarded if such parts expose employees to a hazard.

e) A tag line shall be used for controlling all loads.

f) Machines shall not be refueled with the engine running.

g) A minimum clearance of 10 feet must be maintained between a crane or load when working or traveling near overhead electrical lines rated 50 KV or below; above 50 KV adhere to 1926.550 (a) (15) (1 1).

h) See "Blue Flag" for cranes operating near railroad tracks.

i) No one shall ride on the load, hook or ball of any crane. If a manbasket is attached to the hook of a crane the crane must be equipped with an anti two-blocking device and a safety belt must be used. This is not a generally acceptable method of work and should be used when no other alternatives are available. The use of a manbasket requires the express approval of a Field Engineer. A critical lift plan shall be developed and documented by the Contractor and approved by PPG’s Heavy Equipment Foreman.

See **Lifting Employees by Crane**

j) Cranes shall not be used for side pulls unless authorized by the Field Engineer.
k) Winch truck drum shall have at least 3 wraps of wire rope on it at all times.

l) Chainfalls are not to be secured to handrails.

m) Chainfalls used in caustic or acid shall be washed with fresh water.

n) Wire rope shall be removed from service when:
   
   (1) There is evidence of heat damage.
   
   (2) Abrasion, scraping, flattening or pulling causing a loss of more than one third of the original diameter of outside wires occurs.

7. Hoses

a) Owner’s code system:
   
   (1) Blue for nitrogen.
   
   (2) Red for air and water.
   
   (3) Black for steam.

b) Contractor shall not:
   
   (1) Bring blue hose into plant.
   
   (2) Use Owner’s hose.
   
   (3) Hook up to plant systems without approval of the Field Engineer.

c) Hose connected by "Kelly" or "Chicago" connection shall be safety clipped or wired.

d) Hose strung across roadways shall be protected against damage from vehicles.

e) Hose shall not be crimped to reduce or shut-off pressure.

f) Only hose in good condition shall be used.

8. Ladders
a) Unacceptable ladders shall be removed from the Owner's property immediately.

b) Ladders obstructing passageways shall be barricaded or adequately protected from sudden jolts.

c) When ascending or descending a ladder, the user must face the ladder and use the side rails for hand support.

d) All ladders shall be equipped with safety shoes to prevent slipping.

e) All ladders must be equipped with a "tie-off" line of 1/4" diameter polypropylene rope or equivalent approximately 6' long.

f) The top two (2) rungs of a straight ladder or the top of a stepladder or platform ladder shall not be used as a work platform.

g) Only one worker shall be allowed to work from a ladder unless it is designed for two people.

h) Extension ladders shall not be taken apart in order to use the two sections separately.

i) Extension ladders shall be equipped with a pulley and cord for raising and lowering the top section.

j) When a job is completed, all ladders shall be removed from the job site and placed at an appropriate ladder storage area.

k) If a ladder becomes dirty, greasy or had acid, caustic or other chemicals spilled on it while being used, it must be cleaned before re-use.

l) Do not use ladders as a support for scaffold boards or lay them in a horizontal position to be used as a support for a working platform.

m) Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

n) Ladders with improvised repair shall not be used.
o) No ladder should be used to gain access to a roof unless the top of the ladder extends at least three (3) feet above the point of support, at eaves, gutter or roof line.

p) Adjustments to a ladder’s position shall not be made while the user is standing on the ladder.

q) Job-made ladders will not be permitted without approval of Field Engineer.

r) All ladders shall be tied in a secure position or held by another worker while they are occupied.

s) Step ladders and platform ladders must be fully opened and locked while being used.

t) Short ladders shall not be spliced together to provide long sections.

u) Ladders made by fastening cleats across a single rail shall not be used.

v) Metal ladders may not be used unless approved by the Field Engineer.

9. Aerial Lifts (Manlifts)

See Operating Guidelines for Manlifts

a) Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.

b) Only authorized persons shall operate an aerial lift.

c) Employees shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

d) A safety belt shall be used and lanyard attached to the basket when using an aerial lift.

e) Boom and basket load limits specified by the manufacturer shall not be exceeded. Using a manlift as a crane is not permitted.
f) Cutting rigs shall not be allowed to be carried within lift baskets.

g) Aerial lifts will not be used for other than their designed purpose.

h) Baskets will be kept free of accumulated equipment and materials.

i) Controls shall be clearly marked as to their functions.

10. Painting and Blasting

NOTE - Crystalline Silica Sand shall not be used for blasting purposes in the Lake Charles Plant.

See Abrasive Blasting with Black Beauty

a) A breathing air-supplied blasting hood shall be worn while blasting. Breathing air shall mean a filtered air free of contamination.

b) All exposed skin shall be covered while blasting.

c) Signs or barricades shall be used to warn employees of a blasting operation.

d) Signals used by the blaster and pot tender shall be clearly understood before starting the job.

e) Smoking shall not be permitted around spray painting, mixing paint or while using flammable solvents.

f) The relief valve on a spray paint pressure pot should be hand operated at least once each day while being used.

g) Blasting shall not be permitted from a ladder except when using a small or "Mitey Mite" blaster.

h) Respirator protection shall be used when spray painting.

i) "Dead man" controls shall not be tied off.

j) An electrician will be required to be on continuous standby at the job site, whenever blasting or painting is being
accomplished on electrical transformers and high voltage enclosures when energized.

11. Scaffolds

See Scaffold Guidelines

12. Slings and Rigging

See Rigging and Lifting

13. Welding and Cutting

See Hot Work Procedure

a) Pipelines containing gases or flammable liquids, or conduits containing electrical circuits, shall not be used as a ground return.

b) When a structure or pipeline is employed as a ground return circuit. It shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks, or heat at any point shall cause rejection of the structures as a ground circuit.

c) Cable lugs shall be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs shall be completely insulated.

d) Fire extinguishers shall be kept within reach of all welding, cutting or brazing operations (See Welding, Burning, Open Flame Permit).

e) Welding cables should, when possible, be strung overhead, high enough to permit free passage. Welding cables when strung across road or other areas subjected to vehicular traffic shall be protected against being damaged.

f) Welding cable not in use shall be stored on an appropriate rack or neatly coiled out of walking area.

g) Electrode holders and welding cables shall not be allowed to contact any compressed gas cylinders.
h) Do not weld on a suspended load without permission from the Field Engineer.

i) Welding rods and electrodes shall not be allowed to accumulate around the job. They shall be picked up as often as necessary to prevent slipping or hazards.

j) Welding cables shall be spread out (uncoiled) before use to avoid serious overheating and damage to insulation.

k) Welding cables should be frequently inspected for damage.

l) Welding cables with damaged insulation or exposed bare conductors shall be repaired or replaced. Repair will be a minimum distance of 10 feet from electrode holder and be of equivalent insulation.

m) All fire hazards or flammable material near welding operations shall be removed or protected against heat, sparks, and hot slag. Contractor will provide a fire watch as required by Owner in hazardous areas.

n) After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

o) Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.

p) Torches shall be lighted by friction lighters or other approved devices, and not by matches or from hot work.

q) Do not lay a lighted torch down or attempt to ascend a ladder with a lighted torch.

r) Neither unlighted oxyacetylene torches nor valves shall be left or stored in closed pipe, vessels, or tanks at any time.

s) Hoses shall be kept clear of passageways, ladders and stairs.

t) For quick closing, valves on gas cylinders shall not be opened more than 1 1/2 turns.
(1) At the end of the workday, all torches will be disconnected from leads and stored.

(2) Hoses shall never be exposed to vehicular traffic.

u) Boxes used for the storage of gas hose shall be ventilated.

E. Signs and Barricades

See Plant Barricades

1. Signs required to be posted by Contractor will meet OSHA standards.

2. Barricades with appropriate signs shall be used for guarding temporary hazards and to prevent or warn personnel from entering a hazardous area.

   a) For a condition that could cause immediate injury, the area shall be guarded by someone until it can be barricaded.

   b) When temporary road obstructions occur, barricades shall be placed at least 25 feet in each direction from the obstruction. They shall be adequately lighted at night.

   c) When road barricades are use, detour signs shall be placed at appropriate intersections to divert traffic, when required.

   d) Exterior walkway obstructions should be barricaded with barricade tape and lighted at night, if required.

   e) Barricades around open holes or manholes shall be constructed of sufficient strength so as to physically stop a person from stepping into the opening.

   f) Barricades shall be erected around jobs that present hazards such as falls, failing objects or spilling chemicals.

   g) Only authorized personnel shall enter a barricaded area.

   h) Barricades must be tagged on all sides with a Barricade tag (Storestock # 59-572-0085) noting the type of hazard, the date, time and the legible signature of the person constructing the barricade.
i) All barricades must be removed when the temporary hazard no longer exists.

F. Walking, Working Surfaces

1. Floors

   a) Floor holes, into which persons can accidentally walk, shall be guarded by either a standard railing with standard toe board on all exposed sides, or a floor hole cover of standard strength and construction that is secured against accidental displacement. While the cover is not in place, the floor hole shall be protected by a standard railing.

2. Open-sided Floor, Platforms, and Runways

   a) Every open-sided floor or platform 6 feet or more above adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a standard toe board wherever, beneath the open sides, persons can pass, or there is moving machinery, or there is equipment with which falling materials could create a hazard.

   b) Runways shall be guarded by a standard railing, on all open sides, 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

   c) Where employees entering runways become exposed to machinery, electrical equipment, or other danger, additional guarding shall be provided.

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

3. Walls

   a) Wall openings, from which there is a drop of more than 4 feet ’ and the bottom of the opening is less than 3 feet above the working surface, shall be guarded with a standard rail including an intermediate rail.
(1) If no railing can be erected, see "Safety Belts and Lifelines".

4. Roofs
   a) When work is performed on transite roofs, boards spanning the transite sheets shall be used and secured to span roof members to walk on while on the roof. Do not walk on transite material.

G. Excavation, Trenching, and Shoring
   See Excavation & Trenching

H. Electrical
   Pre-planning - Contractors or subcontractors directly involved with electrical work, or work adjacent to electrical hazards shall do so only after details of said work has been pre-planned and accepted by the Field Engineering staff.

1. Compliance
   All electrical work shall comply with NEC, NFPA 70-1971; ANSI CI-1971, and include the following general safety standards:
   a) All electric tools and equipment used in the plant shall be grounded.
   b) Six (6) volt, or twelve (12) volt extension cords, equipped with vapor-proof hand lamp with a fully guarded bulb, must be used when a light is required in tanks, boilers or vessels or when a light is required in wet places such as ditches, excavations, or sewers, etc. Lights of 110 volts may be used in tanks that are dry and have a non-flammable atmosphere provided they are placed or hung in a stationary position with protective guards on the lights and are protected with a ground fault interrupter.
   c) All portable lights shall have guards to protect the bulb.
   d) Worn or frayed electric cables shall not be used.
e) Flexible electric cords shall be used only in continuous length without splice or tape.

f) Electric cords shall not be strung across wet ground or wet floors.

g) Electric cords or cable strung across roads or walkways shall be protected against damage.

h) Before working on a de-energized circuit, it shall be tested with a voltage measuring device to see that it has been properly cleared. Probe the instrument on a live circuit before and after testing the circuit to be worked on.

i) A fuse puller shall be used when pulling or replacing fuses.

j) Electric cords not in use shall be neatly coiled and stored.

k) All lighting circuits, in areas classified as "Hazardous Locations" for National Electric Code purposes, must be off and tagged out before re-lamping of the area.

l) Before work begins on overhead lines, the lines must be cleared.

m) Before work begins on all high voltage overhead lines, all phases must be grounded on them.

n) Single phase grounding is prohibited.

o) The Field Engineer in charge shall be consulted before the grounds are removed.

p) Hot sticks shall be used to remove fuse cut-outs.

q) Prior to grounding both ends on an overhead line, approval must be obtained from the Field Engineer in charge. This is due to the possibility of circulating currents.

2. Lockout of Circuits

3. Ground-Fault Protection

See Ground Fault Circuit Interrupters

a) Contractors shall use either ground-fault circuit interrupters or an assured equipment grounding conductor program.

(1) Ground-fault circuit interrupters - All 120-volt, single phase, 15 and 20 ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.

(2) Assured equipment grounding conductor program - The employer shall establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This program shall comply with the minimum requirements as outlined in OSHA 1926.400 (n) (3).

4. Eight-pack Grounding

a) Unit shall be properly grounded with a 4-0 wire (minimum).

b) All unit grounds to be left plugged into unit and properly grounded.

c) Unit shall never be used as welding ground.

d) Each unit shall be posted with an OSHA approved "Danger High Voltage" sign on either side.

e) Each unit exposed to weather shall:
(1) Have a wood porch fronting working side and extending a minimum of 4 feet from unit-plywood, lumber or plastic lying on the ground is not acceptable.

5. Temporary Wiring

a) All temporary wiring shall be effectively grounded in accordance with the National Electrical Code, NFPA 70-1971; ANSI CI-1971 (Rev. of CI-1968), Articles 305 and 310.

b) Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

c) Temporary lights shall be equipped with heavy, duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords.

d) Each disconnecting means for motors and appliances, and each service feeder or branch circuit at the point where it originates, shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident.

e) Disconnecting means shall be located or shielded so that employees will not be injured.

f) Boxes for disconnecting means shall be securely and rigidly fastened to the surface upon which they are mounted and fitted with covers.

g) Boxes for disconnecting means installed in damp or wet locations shall be waterproof to the extent that water does not enter or accumulate.

I. Fire Prevention and Protection

1. Temporary Fuel Storage Tanks

a) Temporary fuel storage tanks shall be double walled.

b) Dispensing nozzle to be of an approved automatic-closing type with a latch-open device-ground bond cable attached.
c) 1 1/2 or 2 inch I.D. vent pipe.

d) Six inch lettering, in red, on sides and front, "Flammable --No Open Flame".

e) Contractor's name on side.

f) Area posted with acceptable "No Smoking" signs.

g) A 30 lb. ABC fire extinguisher no nearer than 10 feet or further than 50 feet from tank.

2. Storage and Use of Flammable and Combustible Liquids

See Flammable and Combustible Liquids in Portable Containers - Safe Storage

a) Approved storage cabinets limited to 60 gallons, marked, accessible fire extinguisher and area posted with approved "No Smoking" signs.

b) Ground-band cables shall be used when transferring all liquids.

c) Safety cans for 5 gallons or less (no open containers).

d) Acetone limited to 55 gallons in plant: drums marked with bung vents and spring-loaded spigots.

e) Acetone for cleaning FRP tools shall be carried in safety can with spring-loaded, foot-operated lids and limited to 1 gallon carried to work site.

f) Approved container for waste acetone located at storage site.

g) All containers having acetone will be marked.

h) Extreme safety precautions must be taken, by employees, wearing paper overalls and handling flammable or combustible liquids.

i) When using kerosene, acetone, varsol, MEK, Trichlor, Triethane, adequate ventilation shall be provided.
j) Gasoline shall never be used for any purpose other than a motor fuel.

k) A special container will be located within the flammable storage area for all empty cans, used rags, or tools that contact flammable liquids.

3. Temporary Heating Devices

a) All temporary heating devices shall be inspected prior to their use.

b) There will be no open flame or fires used for heating.

c) All heating units for offices, shops, work areas, change rooms, etc., must be in good working order and periodically inspected. Gas units must be provided with "flame-out" protective devices, and electrical units must be grounded. Gas units shall not be connected by means of rubber hose. All heating units must be turned off at the end of each work day.

d) Fresh air shall be supplied, in sufficient quantity, to maintain the health and safety of workmen. Where natural means of fresh air supply is inadequate, mechanical ventilation shall be provided.

e) Heaters not suitable for use on wooden floors shall not be set directly upon them or other combustible materials. When such heaters are used, they shall rest on suitable heat insulating material or at least 1 -inch concrete, or equivalent. The insulating material shall extend beyond the heater 2 feet or more in all directions.

f) Heaters, when in use, shall be set horizontally level, unless otherwise permitted by the manufacturer's markings.

g) Heaters used in the vicinity of combustible tarpaulins, canvas, or similar coverings shall be located at least 10 feet from the covering. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

h) Flammable liquid-fired heaters shall be equipped with a primary safety control to stop the flow of fuel in the event of
flame failure. Barometric or gravity oil feed shall not be considered a primary safety control.

i) Heaters designed for barometric or gravity oil feed shall be used only with integral tanks.

j) Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed, or an automatic pump, from a supply tank.

k) Solid fuel salamanders are prohibited in buildings and on scaffolds and generally within PPG's Lake Charles Plant.

(1) Salamanders must be shut down before they are moved or refueled.

(2) Salamanders must be temporarily braced while in use.

(3) A fire extinguisher should be kept near all salamanders.

(4) Salamanders shall be cleaned regularly and the fuel carbon deposit shall be checked for heat before refueling.

l) Welding rod cabinets presenting a fire or safety hazard will not be permitted. Cabinets or fireproof materials equipped with strip heaters are recommended. If light bulbs are used, they must be securely guarded with adequate spacing in relation to the cabinet.

J. Demolition

1. Pre-Demo

a) Prior to permitting employees to start demolition operations, an engineering survey shall be made, by Contractor and Field Engineering, of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The Contractor shall have in writing evidence that such a survey has been performed as required by OSHA.
b) When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.

c) All electric, gas, water, steam, sewer and other service lines shall be shut off, capped, or otherwise controlled outside the building line before demolition work is started.

d) If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.

e) It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

f) Where a hazard exists from fragmentation of glass, such hazards shall be removed.

g) Where a hazard exists to employees falling through wall or floor openings, the opening shall be guarded (see "Walking, Working Surfaces").

h) Any object having the potential of falling from the outside of the structure during demolition will be removed.

i) No employee shall be allowed to work above rebar protruding from broken concrete areas.

2. Area Protection

a) Contractor will provide the materials necessary, to contain debris within area, zoned for demolition.

   (1) Appropriate signs will be posted around perimeter of demolition.

b) Pressure type water cans, 2 gallon minimum, will be stationed close to employees cuffing rebar, structural steel or piping.
c) Any debris falling outside perimeter protection shall be removed immediately.

d) Entrances into structure shall be barricaded when Contractor's employees are absent from area.

e) No unauthorized persons shall be allowed within perimeter guarding.

3. Material Removal

a) Routes, for removal of debris from plant, will be assigned by Field Engineer. Contractors are responsible for keeping these routes free of debris.

b) Trucks will not be overloaded. Debris shall be loaded securely before trucks are allowed to move.

c) Debris shall not be allowed to accumulate in a hazardous manner.

d) No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.

K. Explosives

1. General Information

a) Prior to explosives, blasting agents, or blasting supplies being carried onto Owner’s property, all aspects of their use, storage and persons responsible, shall be established through a joint meeting between Contractor and Field Engineering staff.

L. Hazardous Materials

1. General Information

a) Owner shall provide Contractor with data concerning any known hazardous material existing within the Contractor's work area.
b) Contractors are responsible for the safety training, education and record keeping of employees exposed to hazardous materials as outlined in the related Federal Standards.

2. Safety Showers and Body Wash

a) Contractors are responsible for providing their employees with adequate training in the use of safety showers while employees are exposed to hazardous material.

b) Do not put "Body Wash" in or near eyes.

3. Removal

a) Removal, storing or transfer of any hazardous materials by a Contractor or subcontractor requires the authorization of the Field Engineer and Safety Coordinator.

IV. JOB REQUIREMENTS

A. Permits

Should area, unit, or plant alarm(s) sound, permits are canceled and must be re-issued when the emergency is terminated.

1. Welding, Burning, and Open Flame

See Hot Work Procedure

a) Grounds shall be clamped directly to the metal being welded or as close as possible.

b) Hard hat welding is required.

2. Structural Change

See Structural Change, Drilling & Excavation Permit

a) If a construction job requires the alteration to load bearing structural members, which could significantly affect their load carrying capabilities, a "Structural Change Permit" will be required.
b) The Field Engineer will be responsible for clearing all jobs through the area operating personnel involved.

c) If the job cannot be carried out as originally planned, the Field Engineer will initiate the proper changes to be made. A revised permit may be required.

3. Confined Space

See Confined Space Entry

4. Ignition Source

See Hot Work Procedure

a) Ignition Source permits are designed to control the use of tools and devices having the potential to provide a spark or source of ignition in areas of the plant where this is a concern.

   (1) All equipment must have an operable "Kill Switch".

   (2) Fire extinguishers must be accessible.

   (3) Fire blankets may be necessary to cover sewer openings.

b) An inclusive list of devices covered by this permit are:

   (1) Spark ignition vehicles (For more than a quick in and out)

   (2) Gasoline powered equipment.

   (3) Electrical powered equipment.

   (4) Heat lamps.

   (5) Hot air blowers.

   (6) Sandblasting nozzles.
(7) Jack hammers, chipping guns, and similar spark producing tools.

(8) Electronic transmitters and similar devices having spark potential when being calibrated.

c) Field Engineers are responsible for determining when an ignition source permit is required and for initiating a permit request.

d) Maximum duration of a period is 12 hours, provided, the permit is revalidated by an Operations Supervisor following a lunch break or shift change.

5. Vehicle Entry

a) All personnel and vehicles will sign in and out of a unit when they enter and exit per the Contractor Procedures. A consolidated list may be given to unit supervision and one person may sign the crew in and out.

B. Lockout Procedure

See Lockout Procedure

C. Personal Protective Equipment

RE: PPG EDM Document 4301-06-307

1. Work on or adjacent to systems with exposure to acid or caustic requires:

a) Slicker suits.

b) Rubber boots.

c) Chemical gloves.

d) Chemical splash goggles.

e) Full face shields.

2. Work on or adjacent to systems with exposure to chlorine or other chemicals requires:
a) Full face air line mask.

b) Breathing air cylinders with proper regulators.

c) In cell rooms di-electric boots are required.

3. PPE shall be based on the hazards of the chemical and the task being performed, see MSDS for appropriate instructions or contact the area Safety Coordinator if questions arise.

D. Blue Flag

See Blue Flag, Derail, and Rail Car Storage

E. Asbestos

See Asbestos Work Practices

F. Line Breaking

See Line Breaking Procedure