1. **PURPOSE**
   This procedure establishes requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury. (OSHA)

2. **SCOPE**
   All personnel (PPG and Non PPG) are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All affected employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment. (OSHA)

3. **APPLICATION**
   This procedure applies to the control of energy during construction, installation, servicing and/or maintenance of machines and equipment. Normal production operations are not covered by this procedure but are covered by unit standard operating procedures. Non-routine operation activities are covered by this procedure. Lockout is required when a person removes or bypasses a guard or other safety device or when any part of the body is placed into an area of a machine or equipment where work is actually performed upon the material being processed or where an associated danger zone exists during the machine operating cycle.

4. **DEFINITIONS**

   4.1. **AUTHORIZED PERSONS** - A person who locks out machines or equipment in order to perform servicing or maintenance on that machine or equipment (Equipment Owners, Supervision, Maintenance or Contractors). An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance. (OSHA)

   4.2. **AFFECTED PERSONS** – A person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout whose job requires him/her to work in an area in which such servicing or maintenance is being performed. (OSHA) Example: Person working in the area but not locked out on that job.

   4.3. **CONTROL POINT** - Mechanical device that physically prevents the transmission, release, or accumulation of energy. These devices include, but are not limited to the following: An
electrical circuit breaker; disconnect switch; line valve; bleed; block, double block and open bleed (except for toxics and flammables), and any similar device used to block or isolate energy. For double block and bleed, the bleed must be maintained clear. Push buttons, selector switches and other control circuit type devices are not controlling points.

4.4. **DO NOT OPERATE TAG** - A “Do Not Operate” tag is used to identify where spool pieces have been removed for isolation purposes and blinds. It is secured with a ty-rap. “Do Not Operate” tag is also used to communicate that equipment is not to be operated. When used for this purpose, the tag must be signed, dated and the reason for not operating described. The Equipment Owner is responsible for locking out the equipment and applying the “Do Not Operate” tag.

4.5. **ENERGY SOURCE** - any source of electrical, mechanical, nuclear, hydraulic, pneumatic, chemical, thermal or other harmful energy. This includes energy in a spring under tension.

4.6. **EQUIPMENT OWNER** - A Supervisor or Lead/A Operator from the department that normally controls and/or operates the equipment or device in question. In non-process areas this could be a Lead Tankerman, Lead Loader, Lead Packer, Shop Forman, Building Leader or other individual designated to oversee a specific area.

4.7. **GROUP LOCKOUT** - Equipment owner must create an isolation checklist that describes each isolation point associated with the job, isolate the control points, secure with owner’s locks, put the keys in a lock box and fill out a job ready tag.

4.8. **JOB READY TAG** - A communication tag that is used to define the work to be done and identify each control point associated with the job. Isolation points of six or less will be listed on the tag or an attached list without supervision approval. Greater than six isolation points requires the equipment owner to develop a detailed isolation checklist, and attach it to the lock box along with the “Job Ready Tag.” This checklist must be approved by unit / shift supervision by signature or current EDM document. The tag will be attached to the lock box along with the isolation checklist using the multihasp

4.9. **LOCKOUT BOX** – A container used to secure the keys to the equipment owner’s Owner Locks. Each worker protected by the locked energy sources shall place a personal lock on the lockout box. This box may be located at the job site or placed in a central location. If a central location is selected it should be clearly communicated so as not to be confused with other group lock out jobs.

4.10. **OWNER LOCKS** - A series of locks keyed alike used by the equipment owner in which the equipment owner has the only key. An Owner Lock shall not be used for personal protection. Owner’s locks are - 28-639-0130 Padlock, Owner, Abus 55/40 MB KA (Abus 55/40 CS KA may be substituted), Typically 10 locks / 1 key, Brass shank. Owner’s locks
shall only be used during maintenance of equipment. Lockout for any other reason than maintenance shall use a lock other than Abus brass.

4.11. **PERSONAL LOCK** – Individually keyed lock that is to be used to lockout equipment during maintenance for that employee’s personal protection. Locks for PPG personal protection are 33-490-8010 Lock, Personal, Abus 55/40, 1 lock/2 keys, Chrome shank. Non-PPG personnel will supply their own locks. Personal locks shall only be used for this procedure. Locking for any other reason (tool boxes, lockers, bikes, etc.) shall use a lock other than Abus brass.

4.12. **PERSONAL ID TAG** – The tag will be a red and white LOTO “DO NOT OPERATE” tag and will have the name and badge number of the PPG employee or an orange and white tag with the name and company of the Contractor employee. The tag will be attached to the energy isolating device with a Personal lock.

4.13. **JOB VERIFIED TAG** - A green tag attached to the lock out box with a uniquely numbered Poly-Lok plastic seal. This tag and seal is to signify that the control points have been checked and to maintain continuity between shifts once the lockout has been verified. The supervisor of the employees performing the work or a designated supervisor will write a description of the job at the top, sign, date and list the Poly-Lok plastic seal # on the tag and attach it to the lockout box. This supervisor, accompanied by the equipment owner (as needed) will verify that each control point listed on the isolation checklist is properly isolated and locked out rendering the equipment safe. Hanging the green Job Verified tag on the lock box signifies that the job has been properly verified. If the Job Verified tag is not on the group lock box or the seal is broken or missing the workers cannot work on the equipment.

4.14. **LOCKOUT DEVICES** – those materials approved for use to accomplish lockout as described in this procedure. All materials used must be approved by the Safety Department and added to the list at the end of this procedure.

4.15. **TRAINING** - Initial training will be conducted for any employee who participates in or is affected by the Lockout procedure by a CBT program and initial orientation.

4.16. **RETRAINING** - will be conducted for affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures. Retraining will also take place whenever a periodic inspection reveals, or whenever the supervisor has reason to believe that there are deviations from or inadequacies in the employee’s knowledge or use of the Lock Out procedures.

5. **GENERAL**

5.1. When major replacement, repair, renovation, or modification of equipment is performed and when new equipment is installed, energy isolating devices for such equipment shall
be designed to accept a lockout device. Procurement must be notified when new equipment with locking devices will not accept locks or does not come with a locking device.

5.2. Personal locks with Personal ID tags shall be placed and removed by the authorized employee protected by the lock.

5.3. Personal locks with Personal Identification tags shall be removed when the authorized employee completes the job, changes jobs or leaves at the end of the day. When the job is not complete, the person(s) working on the equipment will inform their supervisor and the job must not be signed as completed until the issue has been corrected.

5.4. When the authorized employee who applied the lock is not available to remove it, the lock may be removed under the direction of the supervisor in charge of the job (Job Foreman/Shift Supervisor/Field Engineer). In doing so, the supervisor will:

5.4.1. Verify that the authorized employee who applied the lock is not in the plant.

5.4.2. Make a reasonable effort to contact and inform the authorized employee that the lock has been removed.

5.4.3. Ensure that supervision informs the employee of the removal before they return to the same job.

5.4.4. Document in narrative form the steps taken and copy the "Owner" Area Supervisor/Team Leader, Department Superintendent, and Manager of Safety and Health.

5.5. Locked out bleed valves, that are open to the atmosphere, may be removed from process individually or when they are part of a piece of piping or spool that is to be removed, when it has been identified on the “Job Ready Tag” or the “Attached list of Control Points”.

5.5.1. Temporary removal of piping requires that the piping be reinstalled.

5.5.2. Replacement of a bleed valve or piping with a bleed valve requires that the owner secure the new bleed valve with an owner’s lock before it is installed. Owner will have to make provisions for a lock in the same group of ten or put the keys to a new set of locks into the lock box for group lockout before the job is accepted by maintenance.

5.6. **Double Acting Remote Actuated Block Valves** can be used as an energy isolating device provided the following measures are met: (Note: Globe valves are not included)
5.6.1. The valve has been identified, verified, and labeled as a double acting valve in a closed position by supervision and/or journeyman instrument mechanic.

5.6.2. The air supply must be locked out and disconnected from valve.

5.6.3. The actuated block valve shall be identified with a “Do Not Operate” tag attached with a ty-wrap and shall be listed as an energy control device on the “Job Ready Tag.”
6. **ANNUAL REVIEW (OSHA & GO)**

Each unit is responsible for conducting an audit of their lockout procedures on an annual basis. The audit will consist of observing authorized persons performing their duties as listed in this procedure and documenting the observations on the Chlor-Alkali & Derivatives Lockout Inspection Form. A Matrix was developed that groups related procedures that are applicable to similar types of machines or the equipment (same type and magnitude of energy and similar controls). Audit form can be found on the plant computer I drive under the Lockout folder and as an attachment to this procedure. The completed form will be returned to the safety department Lockout Coordinator where the information will be transposed to the Lockout Matrix for tracking. The Matrix is located on the I: drive folder Lockout.

*Noted deficiencies for the previous year will be consolidated during the 1st quarter and attached to the Monthly Safety Meeting slides for review with the plant wide authorized operations and maintenance associates.*

7. **TROUBLESHOOTING (OSHA)**

(Mechanics and electricians that must check proper electrical / mechanical rotation before the guards are restored must:

7.1 Clear the machine or equipment of tools and materials.
7.2 Remove employees from the machine or equipment area.
7.3 Remove Personal Locks w/ ID tag from lock box.
7.4 Operations will remove the lockout devices after breaking the Job Verified Seal and get the keys out of the box and remove the lockout devices. (The Job Ready Tag will remain accepted and not completed)
7.5 Operations will de-energize all systems and reapply energy control measures and put the keys back in the Lockout Box. The isolation points must be re-verified and a new Job Verified Tag attached before maintenance can re-apply their personal locks to the lock box.

8. **PROCEDURE**

8.1. The basic principle of this procedure is the requirement that all energy sources that could adversely affect personnel doing a job will be locked in a safe position by the authorized employees.

8.2. **WHEN OWNER WORKS ON EQUIPMENT**

When personnel are working on or around equipment that normally falls under their control (when they are the equipment owner), all energy control points which, if opened or activated, could result in harm, must be locked out by the authorized
person(s) with a Lock and Personal Tag. This shall be done in accordance with a written standard operating procedure. Where a standard operating procedure does not exist for a specific job, the person(s) performing the work shall:

8.2.1. List the energy control points associated with the job on a "Job Ready" tag,
8.2.2. Sign and date the tag,
8.2.3. Attach the tag to a prominent control point associated with the job.

Under normal operating procedures where the individual maintains immediate personal control (within arms reach and line of sight) of all energy sources, these control points do not need to be secured as indicated in 8.2.1 through 8.2.3

8.3. OPERATIONAL CONTROL LOCKOUT
When equipment is taken out of service or locked in position for operational reasons and the re-activation, energization or start up of this equipment could cause injury or equipment damage, the equipment must be locked out with a non-abus lock and a “Do Not Operate” tag identifying the reason, must be attached to the lock. The equipment owner will attach the lock and tag.

8.4. NON-OWNER WORK
All other work performed on or around equipment by anyone other than the equipment owner must be done in accordance with the procedure outlined below. The Lockout procedures identify the equipment owner as the one knowledgeable and responsible for shutting down, isolating, clearing and locking out the equipment to be worked on. The Owner’s name written on the Job Ready Tag is the person responsible for the applied locks. The identification of the lock sets used must be listed on the Job Ready Tag or the attached list. Lock sets used on one job can not be used on another job at the same time. Once the equipment is de-energized, cleared of harmful energy, and locked out by the owner, it is ready to be turned over to the worker(s) who will perform service or maintenance on the equipment. The equipment is not ready to be worked on until the equipment owner has completed and signed the “Job Ready Tag”.

8.4.1 The EQUIPMENT OWNER (e.g., Supervisor or Lead/A Operator/Lead Tankerman/Lead Packer) SHALL:

8.4.1.1 Ensure equipment has been shut down, isolated, blocked, and cleared. **Bleed(s) shall be locked open and shall be verified as clear by Roding or flow of air, nitrogen or water to ensure there is no accumulation of stored energy. Bleeds not verified as clear, must be added to the work scope to clear.** Blinds installed and/or flanges where piping sections have been removed for isolation purposes shall be identified with a “Do Not Operate” tag secured with a tie wrap to the location. (Blinding and spool removal for isolation is a separate scope of work from any other work that may be required and requires its own Job Ready Tag).
8.4.1.2 Initiate a “Job Ready Tag”. Be specific in describing the job. Jobs with six isolation points or less may be listed on the tag (no approval required). Greater than six isolation points requires the equipment owner to develop a detailed isolation checklist and attach it to the lock box along with the “Job Ready Tag.” This attached checklist must be approved by unit / shift supervision by signature or current EDM document.

*Include bleeds verified as clear; add all blinds when installed and any spool pieces that have been removed for isolation.* Be specific and print clearly.

Check off the chemical on the Line Break list to identify what was or is in the line or equipment.

When the Job Ready Tag becomes unreadable, the tag must be redone and the lockout points verified.

8.4.1.3 The Lead / A operator, Lead Packer, Lead Tankerman or member of supervision will physically verify that the energy control points have been isolated and secured with an Owners’ Lock (i.e. Valves and breakers). Blinds shall have a “Do Not Operate Tag” attached. Locks are not required for blinds. They will also notify any affected personnel of the lockout.

8.4.1.4 Notify in advance, anyone that could be affected by attempts to operate equipment. Verify that the equipment will not operate (push start button, turn switches).

8.4.1.5 Place the key(s) to the Owner Lock(s) used to isolate energy sources in the Lock Box. Attach the Job Ready Tag and any additional list of isolation points to the lockbox using a multihasp. Place the lock box in a prominent location near the work or a centralized lockout board. If a lockout board is used, it must be logical and clearly defined.

8.4.1.6 Communicate job conditions and any necessary JSI information to the Supervisor of the Employees doing the work.

8.4.1.7 Job Ready Tag is only valid for the task identified; any change in original scope must be reevaluated by supervision. Changes in scope that require additional control point(s) or clearing require a new Job Ready Tag.
8.4.1.8 Any changes to the lockout (i.e. closing bleeds, applying nitrogen, changing isolation points) render the job NOT ready”. The Job Ready Tag must be removed, reissued and all changes communicated to the Supervisor of the employees doing the work.

8.4.1.9 When the job is completed, the Equipment Owner shall verify that the “Job Verified” Tag is removed, Job Ready tag has been initialed “Job Complete”, and any guards or safety devices have been installed. All owner locks and tags may then be removed.

8.4.2 THE SUPERVISOR OF THE EMPLOYEE (S) PERFORMING THE WORK (e.g., Shift Supervisor/Unit Supervisor Maintenance Supervisor/Contractor Supervisor) SHALL:

8.4.2.1 Review the scope of the work to verify that the lockout is appropriate.

8.4.2.2 Each Supervisor that has work on the job locked out, will have their name and contact number printed under the maintenance section of the “Job Ready Tag” that most describes their task. Supervisor may designate another supervisor to print their name and contact number.

Note: The supervisor of the employee doing the work is the person who is responsible for the employee at the time of the work. It may be a maintenance supervisor, an operations supervisor, a shift supervisor, or a contractor supervisor; but the employee must know who they are accountable to for that job. If responsibility for the employees performing the work changes within the duration of the job, a thorough and detailed communication of the job status is essential, the new supervisor may require a physical ‘walk down” before accepting the duty. The employees must be informed of the change so they will know who to contact when the work is complete.

8.4.2.3 A designated supervisor or the supervisor of the employees performing the work will perform the verification, accompanied by the equipment owner as needed. Verification is for all control points listed. Only one verification is required.

8.4.2.4 Notify in advance, anyone that could be affected by attempts to operate the equipment. Visually observe or personally verify that the equipment will not operate (push start/stop button, turn switches). Do Not Operate Valves.

8.4.2.5 When the control points for the job, identified by the owner, have been verified inoperable and locked in the safe or off position, the supervisor
verifying the job will *write a description of the job*, sign, date and write the serial number of the seal on the “Job Verified tag. The securing device will be a unique numbered Poly-Lok plastic seal. The Poly-Lok seal will be used to attach the Job Verified tag to the lockout box multihhasp.

8.4.2.6 Blinding and spool removal for isolation is a separate scope of work from any other work that may be required and requires its own Job Ready Tag).

8.4.2.7 The Poly-Lok plastic seal will be placed on the lockout box after the equipment owner places the keys in the box and before any personal locks w/id tags are installed. Likewise, the Job Verified tag and Poly-Lok plastic seal will be removed only after all personal locks w/id tags have been removed. *The seal is the device that assures continuity protection between shifts.*

8.4.2.8 The job will remain verified as long as the Job Verified tag is legible and Poly-Lok plastic seal remain secured to the lockout box. If the Job Verified Tag falls off or the seal is broken, the job must be re-verified and a new tag installed.

8.4.2.9 Provide appropriate Job Safety Instruction (i.e. specific hazards, use of PPE, scaffolding, etc.) and sign and date the “Job Ready” Tag indicating acceptance of the job.

8.4.2.10 For Non-PPG employees (Contractors, Service groups) initially accepting the job, the “Job Ready Tag” will be signed by their supervision and initialed by their PPG host (Field Engineer, Unit Supervisor etc.).

8.4.2.11 Acceptance means that maintenance/contractors are going to work on the job. Once accepted, the isolation cannot be modified without canceling the “Job Ready Tag”.

8.4.2.12 *When the supervisor/lead man’s part of the job is complete, they will physically review the job and initial the box to the right indicating complete. When all of the boxes on the right side of the communication section have been initialed complete, the last Supervisor will initial, date and time the “Job Complete Section” of the “Job Ready Tag”, remove the “Job Verified Tag” and notify the owner. If a contractor is the last one on a mixed PPG and Contractor Job, the contractor will communicate to the Area Maintenance supervisor that all jobs are complete. The Area Maintenance Supervisor or designee will remove the PPG “Job Verified Tag” and initial the “Job Complete” section on the “Job Ready” Tag and notify the owner.*
8.4.3 **PERSONS WORKING ON THE JOB THAT ARE PROTECTED BY A CONTROLLED ENERGY SOURCE** (including Supervision, Staff, and Inspection personnel) SHALL:

8.4.3.1 *Persons not assigned to the unit must check in and out through the control room each time they enter or re-enter the area.*

8.4.3.2 Review the "Job Ready" tag. The “Job Verified” tag must be attached to the lock box with the serial numbered blue seal before the employee(s) performing the work is allowed to lock the box. The employee(s) may verify the points, but are not required to.

8.4.3.3 Secure their Personal Lock w/ID tag to the Lock Box.

8.4.3.4 Notify in advance, anyone that could be affected by attempts to operate the equipment. Verify that the equipment will not operate (push start/stop button, turn switches). Do Not Operate Valves.

8.4.3.5 **Visually observe or personally verify any bleeds near the work to ensure the line is not plugged. Verification may be accomplished by rodding or previously observing flow of air, nitrogen or water. This is required even if the isolation points have been previously verified. Any person whose work does not require them to physically separate piping or associated equipment is exempt from verifying bleeds are clear.**

8.4.3.6 *When the job is completed, the persons working on the job will contact their supervisor and communicate that the job is complete.*

9. **PIPELINES FROM SUPPLIER (OWNER) TO CUSTOMER OR CUSTOMERS.**

The Owner is the unit that originates the product. Owners are responsible for the locking out of the line / equipment. The Customer is the unit receiving the product. They are responsible for closing the valve of the feed line coming into the unit to isolate the Customers from the pipeline to be worked on. The Owner is to lock the isolation valve that is closed by the Customer. All owners’ locks used outside the originating unit must have a Do Not Operate tag attached to it with the originating unit’s Name and Phone Number written on it. A Point of Contact name would be nice but not mandatory. The Customer may apply or unlock the owner’s lock under the supervision of the Owner. The Owner has the responsibility to assure the lockout of the job as stated in accordance with group lock out section 4 above. A detailed isolation checklist must be developed and approved by signature of both units / shift supervision. The detailed checklist must be attached to a lock box in the originating unit and the
supervisor of the employees performing the work must verify the isolation with the equipment owner.

10. PIPELINES WITH MULTIPLE OWNERS

Each Owner will isolate their section and customers for the job as above. Each Owner will provide a lock box with their keys, a detailed isolation checklist and Job Ready Tag. These boxes will be linked together with a multiple lockout device and the authorized employees will lockout on the multiple lockout devices securing the multiple lockout boxes. The lock boxes will be located at the site of the work or other designated site and will be treated in the same manner as the Group Lock Out detailed above. If work is to be done in more than one unit the employees performing the work must sign in each unit and receive authorization from the equipment owner before starting the work.

11. EXEMPT CASES WHERE OWNERS LOCKS ARE NOT REQUIRED

Equipment Owners Locks are required in all cases unless specifically stated below. Where Equipment Owners Locks are not required, the following shall apply:

11.1. In all situations where the Equipment Owner is not required to isolate the equipment the employee(s) working on the equipment shall control all job related energy sources where the release of energy could result in injury by placing them in a safe condition and locking with Personal Locks and ID Tags. This shall be done in accordance with a written department standard operating procedure (SOP/SMP). Where a standard operating procedure does not exist, the employee(s) performing the work shall list the energy control points associated with the job on a "Job Ready" tag, sign and date the tag, and attach the tag to a prominent control point associated with the job. The only difference in exempt cases is the person performing the work takes on the role of the equipment owner.

11.1.1 If the job has not been completed and the person(s) performing the work is preparing to leave the job, the person(s) shall inform the Equipment Owner of any energy sources which, if opened or activated, could result in harm. The mechanic cannot remove his locks from the job until the Equipment Owner locks the points with department locks.

11.2. REFRIGERATION UNITS

11.2.1 Although isolated, the equipment may still be pressurized.

11.2.2 When other personnel not from the refrigeration group are working with refrigeration mechanics, the exemption does not apply and the Equipment Owner in accordance with section 4 above must lock out the system.

11.3. ELECTRICAL
11.3.1 For work on 110 volt lighting and instrument controls, the employee(s) performing the work shall control all job related energy sources.

11.3.2 110-volt bolt-in breakers may be installed or removed from lighting panels by qualified employees (Service Mechanic Electrician / Contract Electrician) as outlined in OSHA 1910.303-308 and .332. This shall be done in accordance with a written department standard operating procedure.

11.4. INSTRUMENT (For example: Routine work on flow/pressure transmitters and field mounted controller impulse lines. Those instruments that are not in the direct flow of the process.)

11.4.1 The instrument to be worked on shall be verified by the equipment owner and the employee who is to perform the work. This communication shall take place before the work begins.

11.4.2 A list of equipment to be worked on will be given to the “Board Operator” by the owner or instrument mechanic and the instrument mechanic will communicate with the operator by means of radio as the work is performed.

11.5. MONITOR WELL PERSONNEL

11.5.1 This is for routine maintenance of monitor well equipment performed under a Standard Maintenance Procedure. The control points within the reach and line of sight of the special trained mechanic where the work is being performed do not require locks. Those control points outside the reach of the mechanic where the work is being performed require personal locks and personal tags.

11.6. CORD AND PLUG ELECTRICAL EQUIPMENT

11.6.1 Work on cord and plug connected electrical equipment is exempt from this Lockout Procedure when all of the following conditions exist.

11.6.2 Unplugging the equipment places it in a safe condition and controls all job associated energy sources where the release of energy could result in injury.

11.6.3 The plug is under the direct and exclusive control (within arms reach and line of sight) of the employee performing the work.

12. TRANSFER OF CARE, CUSTODY AND CONTROL
Construction personnel install and add to electrical facilities in the PPG Complex on a regular basis. It is important that equipment under Construction’s control be readily distinguished from that under PPG’s control. This procedure is to govern the times when either Construction or Operations is the “owner” of electrical equipment in the same switch room.
Equipment that is under construction and cannot be energized does not require locks and tags. When it becomes possible to energize a section of electrical equipment, the standard or special lockout procedure must be enforced until the transfer of custody is complete.

13. **SPECIAL LOCKOUT PROCEDURE (Custody Transfer and Pre-Op)**

   A Special Tag (Custody Transfer and Pre-Op) will be attached to the face of the electrical device when PPG Field Engineers accept the piece of equipment from the constructor. Section One of this tag will be completed and the construction owner’s lock will be placed on the device. This device is now under the care, custody and control of PPG Field Engineering. PPG Field Engineering will inform Operations of all the equipment they have accepted.

   13.1. When Operations is ready to accept the device for Pre-Op, Field Engineering will be contacted. At this time, Section Two of the Special Tag (Custody Transfer and Pre-Op) that is attached to the face of the electrical device will be completed. PPG Field Engineering will remove the construction owner’s lock. Operations will attach the standard Owner’s lock and “DO NOT OPERATE” tag. Plant Operations now has the care, custody, and control of this equipment.

   13.2. The standard lockout procedures will apply during the Pre-Op checks. Section Three of the Special Tag should be completed during this period. Some equipment (refrigeration, shutdown, boiler controls, etc.) requires special procedures that must be followed before running the equipment. Completion of the circuit portion (Section Three - Pre-Op Checks) indicates these checks have been made. Completion of the rotation portion indicates that the rotation of the motor has been checked and that the motor has been connected to the driven equipment.

   13.3. It is Operations Supervision’s responsibility to ascertain that all necessary Pre-Op work and preparation have been carried out prior to placing any device in service. When it is certain that all work is completed, Section Four of the Special Tag (Custody Transfer and Pre-Op) will be completed. The tag will be removed from the face of the device and sent to the appropriate Operations Area Supervisor. Removal of this tag indicates the equipment is ready for service.

* Device is any electrical breaker, starter, disconnect, etc.
JOB READY

Location:

Description:

Description of Lock Sets Used:

Control Points (6 or Less):
1
2
3
4
5
6

Owner Signature: __________________________ Date: __________

PPE For Line Break

May Be Downgraded after Hazard Evaluation

- **Chlorine Liquid**
  Airline Respirator, CPF III Garment, Chemical Gloves and Boots.

- **Chlorine Gas**
  Airline Respirator, Chemical Gloves.

- **Chlorinated Hydrocarbons**
  Airline Respirator, CPF III Garment, Chemical Gloves and Boots.

- **Caustic**
  Goggles and Face Shield, Slicker / CPF III Garment, Chemical Gloves and Boots.

- **Acid**
  Goggles and Face Shield, Slicker / CPF III Garment, Chemical Gloves and Boots.

- **Sulfur Chloride**
  Airline Respirator, CPF III Garment, Chemical Gloves and Boots.

- **Steam or Condensate (Not Cool To Touch)**
  Goggles and Face Shield, cotton long sleeve coveralls under Slicker Suit, Thermal/Chemical Gloves.

- **Air, Nitrogen, or Water <120° F**
  Goggles

**Other:**

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
Maintenance Acceptance of Job

Date: ____________________________

Signature: ________________________

MAINTENANCE SUPERVISOR: Check off box on the left of required work.

RESPONSIBLE SUPERVISOR: Print Name and Contact Number below and

Initial on the right when complete and ready for operations.

COMPLETE READY FOR OPERATIONS

☐ MECHANICAL

Initial Box

☐ ELECTRICAL

☐ INSTRUMENT

☐ INSULATION

☐ CONTRACT SERVICES

☐ INSPECTION

Job Complete

Initials __________ Date ________ Time ________ A.M./P.M.

Job Not Complete Until Initialed
Job Description:

Job Verified Tag

This Group Lock Out Job Has Been Verified

Name: ______________________________________

Date: __________________________

Seal #: __________________________

LCH# 59-572-0030
Lockout Devices

Padlock, Owner, 10 locks keyed alike, Brass Shank Abus 55/40 MB KA (Chrome Shank Abus 55/40 CS KA may be substituted)

Padlock, Personal, 1 lock 2 keys, Chrome Shank Abus 55/40 CS
Order by Tool Order Screen, Main Frame or Call Tool Room and give a charge number.

Tag, Job Ready

Tag, L/O Job Verified (Green)

Tag, “Danger” Do Not Operate

Tag, L/O Employee, (Red and White)

Tag, L/O Contractor, (Orange and White)

Tag, Job Communication (Yellow)

Lockout, Pull Lock Seals, Job Verified

Lockout Bar Dayton Rogers 7 hole

Lockout, Breaker, Circuit Single #65688 6 ea. /pkg.

Lockout, Multilock, Aluminum #0G80

Lockout, Multilock, Plastic M-SAFE

Lockout, Multilock, Steel #0G86

Chain, Single Loop, Trade Size #22 100 ft/bx

Chain, Lock Link, Single Loop Chain, Galv., (250ft/carton) 265lb. $.74 Drago Supply

Chain, Straight Link Coil Chain, Zinc, (100ft/carton) 520 lb. $.60 Drago Supply

Chain, Plastic, 2”, Heavy Duty, PK, 235 lb. Drago Supply

Cable, Sanlo 7x19, #6AVinyl Coated Cable, Order by the foot, $.28 Drago Supply

Ferrules for crimping ends: Alum. $.16 ea. and Stainless $.73 ea. Drago Supply

Crimping Tool: $181.30 ea. Drago Supply
Lockout, Cover, Valve Handle, 2 ½” to 5”  #VS04  28-639-0521
Lockout, Cover, Valve Handle, 5” to 6 ½”  #VS06  28-639-0522
Lockout, Identi-shield, Yellow, Vallen #AL0705  28-639-0585
Lockout, Identi-shield, Green, Vallen #AL0706  28-639-0586
Lockout, Identi-shield, Blue, Vallen #AL0707  28-639-0587
Lockout, Identi-shield, Purple, Vallen #AL0708  28-639-0588
Lockout, Identi-shield, Brown, Vallen #AL0709  28-639-0589
Lockout, Box, Tube Type, 2”x 8”, PPG DWG #012193A  28-639-0605
# LOCKOUT PROCEDURE - SP#6

## LOCKOUT INSPECTION FORM

### JOB DESCRIPTION:

- **DEPT:**
- **DATE:**
- **AUDITOR:**
- **SUPERVISOR:**

## EQUIPMENT AUDIT CATEGORY/S

<table>
<thead>
<tr>
<th>Category</th>
<th>Y</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>Electronic Instrumentation</td>
<td></td>
<td></td>
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<tr>
<td>Pneumatic Instrumentation</td>
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<tr>
<td>Tank/Vessel</td>
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<tr>
<td>110V AC Circuit or Less</td>
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<td></td>
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<tr>
<td>110V – 440V AC Circuit</td>
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<tr>
<td>&gt;440V AC Circuit</td>
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<tr>
<td>Piping/Piping Component</td>
<td></td>
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<tr>
<td>Railroad Track</td>
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<tr>
<td>Cooling Tower</td>
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<tr>
<td>Rotating Equipment</td>
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<tr>
<td>Boiler/Furnace</td>
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<tr>
<td>Heat Exchanger</td>
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<tr>
<td>Conveyor</td>
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<tr>
<td>Filter Press</td>
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<tr>
<td>DC Circuit</td>
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<tr>
<td>Radiation Source</td>
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<tr>
<td>Ventilation/Air Handling System</td>
<td></td>
<td></td>
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<tr>
<td>Robotic Equipment</td>
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</tbody>
</table>

### REVIEW

1. Were all authorized employees using properly identified personal locks? □ Y □ N
2. Were all isolation points properly identified in a written procedure or job tag? Was isolation information legible and clearly understood by the authorized employees performing the work? □ Y □ N
3. Were all isolation points properly secured? □ Y □ N
4. Was lockout verification completed by all authorized employees (or representative for group lockout)? □ Y □ N
5. Was verification of de-energization completed as required by the plant lockout procedure? □ Y □ N
6. Do all authorized employees understand their lockout responsibilities identified in the plant lockout procedure? □ Y □ N
7. Were all affected employees notified of lockout taking place? □ Y □ N
8. Were all authorized employees aware of the type and magnitude of energy, controlled, as part of the job? □ Y □ N
9. Was continuity of protection maintained for any changes in shifts and/or personnel? (Blue Seal on Verified Tag) □ Y □ N

**Authorized Employee:** (Write Badge Numbers or Contractor and # of workers)

**COMMENTS ON SPECIFIC DEFICIENCIES:**
INSTRUCTIONS

- An annual audit shall be performed on each equipment category in each plant unit/department.

- A qualified individual not associated with the specific work being performed, shall perform audits.

- Specific deficiencies identified during the audit shall be communicated to all plant employees who perform work on the same type of equipment.

- Completed audit forms shall be maintained for 12 months.

- Upon completion of all audits, a review shall take place to determine if any necessary retraining or general procedure changes are warranted.

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Electronic Instrumentation</td>
<td>flow meter, pressure transmitters</td>
</tr>
<tr>
<td>2 Pneumatic Instrumentation</td>
<td>air-operated valves, dampers, pressure transmitters</td>
</tr>
<tr>
<td>3 Tanks/Vessels</td>
<td>Storage tanks, process vessels, distillation columns</td>
</tr>
<tr>
<td>4 110 volt AC circuits or less</td>
<td></td>
</tr>
<tr>
<td>5 110 - 440 volt AC circuits</td>
<td></td>
</tr>
<tr>
<td>6 &gt;440 volt AC circuits</td>
<td></td>
</tr>
<tr>
<td>7 Piping and Piping Components</td>
<td>turbines, pulverizers/mills, centrifuges, flakers, compressors, pumps, fans</td>
</tr>
<tr>
<td>8 Rotating equipment</td>
<td></td>
</tr>
<tr>
<td>9 Boilers/Furnaces</td>
<td>Powerhouse boilers, VCM furnace</td>
</tr>
<tr>
<td>10 Heat Exchangers</td>
<td>Tube/shell, plate and frame</td>
</tr>
<tr>
<td>11 Conveyors</td>
<td>Belt-driven, screw, roller</td>
</tr>
<tr>
<td>12 Filter Presses</td>
<td>Cal Hypo filter press, Silica filter press</td>
</tr>
<tr>
<td>13 DC Circuits</td>
<td>Rectifier equipment</td>
</tr>
<tr>
<td>14 Radiation sources</td>
<td>Level gauges, flow gauges</td>
</tr>
<tr>
<td>15 Railroad Tracks</td>
<td></td>
</tr>
<tr>
<td>16 Ventilation/air handling systems</td>
<td>Boiler exhaust equipment, hot/cold air returns</td>
</tr>
<tr>
<td>17 Cooling Towers</td>
<td></td>
</tr>
<tr>
<td>18 Robotic</td>
<td>Robotic stacking machine.</td>
</tr>
</tbody>
</table>