Duer/Carolina Coil, Inc.
Work Instructions
W20804.Lock Out – Tag Out

Purpose: This work instruction:

1. *Establishes the guidelines all employees not authorized to lock out equipment should follow when a piece of equipment* is being locked out and what they are allowed to do when performing a minor tool change or adjustment, clearing a jam, or other minor servicing activity.
2. Shall be used in any work at Duer/Carolina Coil to ensure that the machine or equipment is stopped, isolated from all potentially hazardous sources and locked out before an authorized employee performs any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Scope:

1. This work instruction shall be used in any work at Duer/Carolina Coil to ensure that the machine or equipment is stopped, isolated from all potentially hazardous 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.
2. *Minor tool changes and adjustments and other minor servicing activities, which take place during normal production operation,* are not covered by this instruction if they are routine, repetitive and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection.
3. The scope of this program includes: energy control procedure, sequence of lockout, outside contractors, lock control, lock removal, lock identification, means of lockout by machine, periodic program assessment, and employee training.

Remarks:

1. This work instruction is derived from Occupational Safety and Health Standards for General Industry (29 CFR part 1910.147).
2. Affected employee Training:
    a. All affected employees will be given an overview of the program explaining why lockout/tagout is necessary and their responsibility in complying with lockout rules.
    b. The training is documented and retained as a training record.
    c. A normally affected employee may be trained as an authorized employee to assist with maintenance. If there is a need for that employee to help an authorized employee on a piece of equipment that has been locked out, the affected employee must have had the authorized employee training within the last year to be eligible to help the authorized employee and must put another set of locks on for him/herself for which only they have the key to.
3. Authorized Employee Training:
    a. Authorized employees must complete training for both authorized and affected employees before being permitted to lockout equipment.

b. All authorized employees shall be given refresher training annually.
c. The training is documented and retained as a training record

Definitions:

1. Authorized employee **-** A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this work instruction.
2. Affected employee. - An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
3. For additional definitions see 29 CFR part 1910.147(b)

Responsibilities:

1. Only authorized employees are permitted to lockout equipment. Authorized employees must complete training for both authorized and affected employees before being permitted to lockout equipment.
2. Affected employees are allowed to perform minor tool changes or adjustments, clear jams, and other minor servicing activities, which take place during normal production operation and that if being one of these activities is routine, repetitive, and integral to the use of the equipment or production, provided that the work is performed using alternative measures which provide effective protection.
3. While an authorized employee is performing maintenance or service on a piece of equipment, all affected employees in the area should refrain from disturbing or distracting the authorized employee. This includes congregating or loitering in the area where the maintenance or service is taking place. They should instead ask their supervisor where to relocate for the extent of the repair or service. Causing a distraction to the authorized employee while he is working on the machine may result in himself or somebody else being seriously injured in addition to causing damage to a piece of machinery.
4. All 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.
5. Only the Maintenance Supervisor, Process/Assistant Process Engineer, Production Manager, Manufacturing Manager, or the Production Supervisor is authorized to effect the removal of a lockout when the authorized employee who applied the lock is not available. The authorizing manager must:
    a. Ensure that the authorized employee who applied the lockout is no longer on site.
    b. Make all reasonable efforts to contact the authorized employee who applied the lockout to inform them that their lockout has been removed.

c. Ensure that the authorized employee has specific knowledge that the lockout was removed before the employee resumes work at the facility.

Task Description:

1. Affected Employees:
    a. The employee should notify all other employees in the area that he is about to perform a minor tool change or adjustment, clear a jam, or other minor servicing activity.
    b. *To perform minor tool changes or adjustments*, the employee must follow work instructions or machine manuals and have control of the machine operating panel.
    c. If an employee needs to clear a jam or perform a minor service:
        i. They need to have two safety devices engaged on the machine. These devices can be proximity switches, limit switches, E-stops, or some other device that is in the operator's control.
        ii. Once the employee has engaged both safety devices then they must try and start the machine to make sure it is not operational.
        iii. When the employee has established the machine cannot operate and the two safety devices have been engaged then he/she may clear the jam.
        iv. If the jam cannot be cleared by the operator by the use of a simple tool or by hand and an authorized maintenance employee must be called to clear the jam through cutting or burning the spring out of the machine then he must follow the procedure for locking out a machine.
2. Authorized Employees:
    a. The authorized employee shall notify all affected employees that servicing or maintenance is required on a machine or equipment in their area and that the machine must be shut down and locked out to perform the servicing or maintenance.
    b. If the machine or equipment is operating, shut it down by the normal stopping procedure. Once the machine is stopped, engage the emergency stop to achieve a safe condition.
    c. The authorized employee shall identify the type and magnitude of the energy that the machine utilizes by consulting the list of Lock Out – Tag Out Points on the machine listing for F10101.Maintenance System.
        i. Each piece of equipment has at least a single energy isolating device to shutoff the main source of energy.
        ii. The main shutoff for each energy isolating device is identified by a red dot with the machine number of the piece of equipment it is associated with along with which number out of the total that isolation point represents. (for example: Point 2 of 4). These sources of energy can include electricity, air, hydraulics, gas, gravity, springs, water, and other potential sources of energy.

d. The authorized employee shall lockout each main energy isolation device before doing maintenance/service.
e. An authorized employee may be permitted to isolate an energy source other than the main via a satellite shutoff or choose not to isolate an energy source (main or satellite) on a piece of equipment ONLY if *any* of the following conditions are met:
    i. There is no possible way for the authorized employee or any affected employee to be injured by not locking out that particular energy isolating device.
    ii. Isolating the energy source at the main will shut down other pieces of equipment that are not needed for maintenance/service which will unnecessarily disrupt production **OR** it will prevent the originally intended maintenance or service activity from being done.
    iii. When a repair ONLY requires replacing parts inside of a machine's electrical cabinet it will be acceptable to lock out only the main electrical isolation device to the electrical cabinet that is being worked on. If at any time, the repair needs to move outside of the electrical cabinet for any reason then the lock out requirements for the other energy sources for that machine must be followed.
    iv. If an exception is needed and above requirements in steps 2.e.i or 2.e.ii are met then the authorized employee(s) must fill out F10191.Lock Out – Tag Out Temporary Exception Form. This form should be signed by a manager or supervisor. If a manager or supervisor is not available, then another authorized employee can sign it. After the form has been signed, maintenance/service can commence.
    v. This form will be turned into the maintenance supervisor. Once this exception is approved as a safe way to conduct a repair on this piece of machinery it shall be documented under the machine number in the Maintenance System as a permanently approved way to conduct a repair for that particular situation.

3. Once all appropriate energy isolating devices have been identified, de-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy sources.
4. Stored energy or residual energy, such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air systems, gas systems, water pressure, or residual heat must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down or cooling, etc. When there is doubt as to the location of the energy isolating device(s), the Maintenance Supervisor shall be contacted to ensure that the proper isolating device(s) are identified and locked/tagged out to de-energize the system or equipment.
5. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to

make certain the equipment will not operate. Caution: Return operating control(s) to neutral or off position after verifying the isolation of the equipment.

6. Lock out the machine with your locks. Each energy isolation device should have a tag on it with the owner's name and date. Each authorized employee who is working on the machine shall put their locks on it as well. Once this has been done Maintenance/Service may commence.
7. If work cannot be completed by the original authorized employee who locked out the machine, that employee is responsible to notify the next successive authorized employee that the machine was locked out by him. At each exchange of authorized employees, the previous authorized employee will witness the successive authorized employee locking out the machine. This will maintain the integrity of the lock out process.
8. If multiple authorized employees work on the same machine at the same time, each must attach his lock out device to the appropriate energy isolating devices. When this is not feasible, due to a large number of people working on the equipment, the supervisor of each group shall place a department lock/tag on the energy isolating device. When multiple locks are required, use a multiple lock device, not a "lock daisy chain."
9. Restoring equipment to service: When the servicing or maintenance is complete and the machine is ready to return to normal operating condition, the following steps shall be taken:
    a. Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
    b. Check the work area to ensure all employees have been safely positioned or removed from the area.
    c. Verify the controls are in neutral.
    d. Remove the lockout devices and reenergize the machine or equipment. Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.
    e. Cycle machine as needed to ensure proper working performance.
    f. If after cycling the machine it is found that additional maintenance or service is needed the lock out – tag out procedure must be repeated from the beginning.
    g. Notify all affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.
10. Lockout Procedure for Outside Contractors: When it is necessary for outside contractors to lockout or tagout equipment, the following shall be required:
    a. The Maintenance Supervisor, Process Engineer, or any other manager assigned to the project shall follow the procedure outlined in this policy and lock or tag the equipment.
    b. The contractor shall accompany the supervisor or his/her representative while the lockout/tagout procedure is being performed and attach their locks or properly filled out tags.

c. The supervisor of the project and contractor shall be responsible for removing their own locks or tags when the work is complete.

Related Documents:

1. F10191.Lock Out – Tag Out Exception Form
2. F10101.Maintenance System

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