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Your Workplace Safety Partner



Who is Sotaris?

Sotaris was founded by dedicated professionals who shared a vision for bringing safety consulting to an unprecedented level. Having assisted numerous Fortune 500 clients with their safety protocols, and successfully completing hundreds of wide-ranging compliance projects, Sotaris personnel are uniquely positioned to amortize their experiences with all clients.

Sotaris is committed to the *profession* of safety. Our clients will receive objective and informed consultation, based upon our experience, knowledge of safety protocols **and an appreciation of our client's prevailing workforce demographics, budgets and ability to implement our recommendations effectively.** At all times, Sotaris shall function as an extension to our client's internal resources, and in so doing, constantly be focused on those issues most critical to our client and the protection of their workers and property.



Project Scope

The control of hazardous energy (lockout/tagout) is addressed within OSHA 29 CFR Part 1910.147. This standard sets forth directives for protecting individuals from harm due to the exposure to potentially hazardous energy. **Specifically, 1910.147 cites the need for machine specific written procedures, training and the review of your lockout/tagout program.**

OSHA has established the following guidelines to use in determining if a piece of equipment needs Lockout/Energy Control Procedure coverage. If any of the following statements are true of a particular piece of equipment, a Lockout/Energy Control Procedure is required.

1. The machine or equipment has potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees.
2. The machine or equipment has more than a single energy source which can be readily Identified and isolated.
3. The isolation and locking out of a single energy source does not completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is not isolated by a single energy source only.
5. A single lockout device will not achieve a locked-out condition.
6. The lockout device is not under the exclusive control of the authorized employee performing the servicing or maintenance.
7. The servicing or maintenance creates hazards for other employees.
8. The employer has had an accident involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

Lockout/Energy Control Project Outline

Utilizing the above criteria, Sotarís will audit your facility and determine which machines and how many require lockout/energy control coverage. During this audit we will document the following:

- Types of machines (Name, Manufacturer, Location, Asset #, etc)
- Quantity of similar and unique pieces of equipment and/or machining processes
- Hazardous energy sources present in the workplace
- Common types of isolation devices and are they lockable
- General notes on magnitudes of energy
- Approximate number of hazardous energy isolation points per machine

Once this audit is complete a summary report is completed and submitted to you for consideration and review. Based on the results of the summary report and subsequent review of this report, a final quantity of machine specific procedures will be determined.



Lockout/Energy Control Services

Data Gathering

Sotarís will visit your facility and review the overall machine configurations. Any necessary changes to any provided documentation will be marked up and any missing machine layouts can be detailed. Furthermore, Sotarís will document the types and locations of hazardous energies present, as well as the locations and types of isolation devices.

If Lockout Procedures currently exist on any of your systems, Sotarís will review their accuracy and if found to be incorrect note the necessary revisions that will need to be made in order to bring them back into compliance.

Field Verification

Sotarís can re-visit your facility and perform a zero mechanical state verification to insure the accuracy of the Lockout Procedures developed. This task will serve to insure that all energy sources/safety devices have been documented and “called-out” appropriately and that the means of isolating/dissipating that energy is effective and sequentially accurate based upon the information gathered. During this visit Sotarís it is most beneficial that key maintenance, electrician, pipefitters, and/or safety personnel be available and involved in the verification process.

Lockout/Energy Control Placards

Sotarís will be responsible for the development of Lockout/Energy Control Procedures (hereafter **Placards**), for the equipment defined as a result of our audit or equipment lists/layouts you provide.

The *Placards* will include photograph(s) of the respective machine/process and locations of specific energy isolation points. *Placards* will measure approximately 8.5” x 11” and only where necessary, the sizes will be modified. The *Placards* will be color laser printed and laminated to a

Lockout/Energy Control Project Outline

10mil thickness (due to certain environmental conditions, a more durable final product may need to be used).

LOCKOUT PROCEDURE		Machine Number: W2679
AFC End Former		
Location: Building 2		K7 Area
Purpose: For use by trained and authorized employees only. If you have questions contact your supervisor.		
Left Side View	Front View	
Energy Isolation Procedure - Always Perform Controlled Shutdown Before Locking Out - Steps 5		
Energy Tag and Description	Isolation Procedure and Lockout Devices	Method of Verification
E158 Electrical 480 VAC Backstop of Machine	Place equipment in the off position, attach lockout device(s) and lockout.	Test the equipment to ensure it cannot be moved to the "on" position. Attempt to activate system, no activity should occur.
A148 Main Supply Dump Valve Compressed Air 110 PSI Front Left Side of Machine	Push red valve to dump position, attach lockout device(s) and lockout.	Test the valve to be sure it cannot be moved to the "open" position. Verify gauge goes from operating PSI to zero PSI.
HYD Hydraulic 1000 PSI Forming Unit Hydraulic Pump Right Side of Machine	To service hydraulic system slowly crack open filter, fittings, or valves on pressure side of filter.	Visually confirm release of pressurized fluid.
DR Discrete Rotation Inside Machine	Allow sufficient time for motor and all rotation to come to a complete stop.	If applicable to work being performed, visually confirm that all rotation has completely stopped.
MG Vertical Cylinder Part Climb Gravity Front of Machine	Block, pin or otherwise support equipment that cycles vertically to prevent any unpredictable movement.	Insert block, pin or other support in intended properly and no unpredictable movement can occur.
<p>*Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the location 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 location of the equipment.</p> <p>This equipment is now locked out. Perform servicing and/or maintenance.</p> <p>Release of Lockout/Tagout - Restoring Equipment to Service:</p> <p>(1) COMMUNICATE to all Affected Employees (5) REMOVE your lock and tag (2) VERIFY the safety of the area (6) COMMUNICATE system re-energization (3) ENSURE the safety devices and guards are in place (7) RE-ENERGIZE and test equipment (4) RETURN system functions</p> <p>Developed For: Kastle/Teddon By: Sotaris, LLP 219-378-7652, www.sotaris.com Page 1 of 1 Print Date: 2/7/2007 Rev. 0</p>		

Placards will include the following information at a minimum:

- Equipment Manufacturer and Description
- Location (department and/or bay)
- Potentially Hazardous Energies Present (electrical, pneumatic, water, gas, chemical, hydraulic, etc.)
- Magnitudes of Energies Present (PSI, VAC, etc.)
- Digital Photograph of the equipment and machinery
- Sequential Method of Shutdown
- Lockout Hardware Required (i.e. ball valve lockouts, chains, locks, hasps, etc.)
- Method of Verification
- Release From Lockout Protocol
- **As an option to BJWSA, Sotaris may be able to incorporate existing arc flash data into the placards/tags. Additional charges for this service may apply.**

Energy Identification Tags

Sotaris will develop *Energy Identification Tags* for all energy-isolating devices "called-out" on the *Placards*. The *Tags* will aid your *authorized* employees in locating the physical isolation point relative to that particular piece of equipment. The *Tags* will be approximately 3" x 3" in size and include verbiage that identifies the equipment, magnitude of energy and type of energy it is isolating (i.e. E1; Sludge Pump #1, 480V Main Electrical Disconnect).

CAT#: HM2896		HOMAO 8500
A522		
Compressed Air	110 PSI	
Main Air Shutoff - Ball Valve		
Outfitted End of Machine		
ISOLATION PROCEDURE		
Turn valve handle to the closed position, attach lockout device(s) and lockout.		
VERIFICATION		
Test the valve to be sure it cannot be moved to the "open" position. Use air tool to bleed down residual air. Verify gauge goes from operating PSI to zero PSI.		

These *Tags* will be multi-color approximately 3" x 3" in size and be laminated to a 10mil thickness (due to certain environmental conditions, a more durable final product may need to be used). Each *Tag* will be uniquely numbered and no duplication of that tag number will exist within the plant.

Energy Tag and Lockout Procedure Installation

As part of these project Sotaris can provide the Energy Identification Tag installation services. During this task all Energy Tags will be hung and/or mounted at the physical energy isolation point for that particular system. Additionally the Lockout Procedures will be hung/mounted at a conspicuous location (main panel, operator console, or other location) on each respective system.

Lockout/Energy Control Authorized and Affected Persons Training

Sotaris can provide the necessary training for your Authorized and Affected employees as related to the Lockout/Energy Control Program. This training is comprised of both hands-on and in the classroom type training. We can facilitate this training at our location or come on-site to yours.

Annual Inspections

As part of this phase, Sotaris will first categorize your equipment/machines by similar types and then inspect a representative number of authorized employees implementing the Lockout Procedures within each category (We will work with you to determine those to be interviewed). Sotaris recommends that the persons selected be minimally of the following make-up; a relatively new hire, persons responsible for many types of machines, persons who have been employed at your company for a number of years and persons that have been found not to be performing lockout/tagout protocols appropriately. This approach will ensure that the persons most likely to have deficiencies are interviewed. Depending on size and needs of your company we can interview all employees

Sotaris will provide certification that the periodic inspections have been performed. The certification will identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

At the conclusion of our Authorized Employee Inspection, Sotaris will submit a report detailing the findings with recommendations to correct any deficiencies found.



Closing

To find out more about our services please contact us today to see how we can help!

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