SECTION 01 92 14
FACILITY OPERATION
LOCK OUT TAG OUT PROCEDURE & SIGNAGE REQUIREMENTS

INFORMATION ONLY. NOT IN CONTRACT

PART 1 – GENERAL-FOR

1.01 SCOPE OF WORK

Requirements for creating and installing graphical machine specific lockout procedures & signage.

The creation and submission of a Lockout-Tagout (LOTO) Procedure & Signage for Indiana University shall include the following to be in compliance with OSHA Regulation CFR 1910.147:

- Graphical machine-specific procedures depicting the means to establish a zero-energy state for any piece of equipment.
- Machine-mounted procedure placards installed with written instructions to safely and quickly control machinery, and prevent unexpected energization or start up.
- The machine-specific LOTO procedure is both a documented procedure and graphical design specific to the building equipment and location. It shall meet and exceed expectations defined in OSHA regulation CFR 1910.147.
- The LOTO procedure files shall be provided along with the Software template used to create procedures.
- Contractor shall provide training in creating and maintaining the written and graphical LOTO procedures.

PART 2 – PRODUCTS

The LOTO procedure development and signage shall be developed by Grainger/Brady. No substitutions. Grainger/Brady can be contacted as follows:

Doug Qua
Government Account Manager
W.W. Grainger, Inc.
317.373.7766 cell
doug.qua@grainger.com

PART 3 – EXECUTION

3.01 MACHINE-SPECIFIC PROCEDURES

The Lockout-Tagout standard (CFR 1910.147(a)(1)):

covers the servicing and maintenance of machines in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees.
where energy sources include (CFR 1910.147(b)):

*any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.*

Graphical machine-specific procedure placards are required for each procedure showing energy disconnects and control points on the placard. This graphical placard must be mounted prominently on the machine. Color-coded tags are also mounted onto each machine’s energy disconnects and control points corresponding to each hazard type.

### 3.02 PROCEDURE CREATION

The Contractor (or their subcontractor) shall create written and graphical LOTO procedures & signage as follows:

- All machines and related systems are examined to determine best of knowledge machine lockout steps. Digital images are taken for each procedure.
- Specific machines will then be reviewed by Indiana University representatives and the best available lockout method for each machine will be documented.
- Machine-specific procedures are created. Utilizing collected information, procedures are created outlining steps to achieve a zero energy state.
- A review of completed procedures with Indiana University staff.
- Procedure placards and graphical energy- and machine-control tags are then mounted prominently on the machine and associated electrical, valves, etc.

All procedures and signage are property of Indiana University. All electronic files used in procedure creation will be provided on CD-ROM in Microsoft WORD or EXCEL. In addition, the software template used to create the procedures and signage must be submitted.

Qualified IU employees will be trained in a single training session in use of the software. These personnel can then perform future basic modifications or create simple procedures.

### 3.03 DELIVERABLES

- Machine-specific LOTO procedures printed onto UV-resistant stock, durably laminated in heavy-weight laminate, and securely mounted onto machinery.
- Energy- and machine-control points labeled on machinery with visually instructive and durable graphical tags.
- Electronic files of all machine-specific LOTO procedures, and all associated files used to create the procedures.
- Software template in Microsoft WORD or EXCEL used to create the LOTO procedures.
- 1 training session on how to create and update LOTO procedures. Training session shall also include a system “double-check” to verify the equipment has been successfully locked out after tagging and all energy dissipated.
- 1 desk copy of all procedures mounted in 3-ring binder
- All deliverables, including training session, are required to be completed to the satisfaction of Indiana University prior to release of final payment.
An example of the style and format of the graphical placard that is required by the Contractor is found below:

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**LOCKOUT TAGOUT PROCEDURE**

<table>
<thead>
<tr>
<th>Description: Gas Furnace SF1</th>
<th>Asset:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building: 050 - Hutton Honors</td>
<td>Room/Location: Roof</td>
</tr>
</tbody>
</table>

| Revn: 0 | Revn Date: N/A | Origin Date: 10/07/11 |

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**LOCKS & TAGS NEEDED**

**CAUTION**

Thermal energy and burn hazard. Ensure heat has dissipated before proceeding.

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**East Side**

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**ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS**

<table>
<thead>
<tr>
<th>ID</th>
<th>Source</th>
<th>Location</th>
<th>Method</th>
<th>Check</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electrical</td>
<td>Disconnect is located on the North side of Unit.</td>
<td>Move E-1 disconnect to off.</td>
<td>Attempt restart at all Control Panels.</td>
<td>Lock and Hasp</td>
</tr>
<tr>
<td></td>
<td>Natural Gas</td>
<td>Valve is located on the North side of the unit.</td>
<td>Close G-1 valve. Lock out.</td>
<td>Verify line is isolated.</td>
<td>Ball Valve Lockout</td>
</tr>
</tbody>
</table>

**OPENING A GUARD DOES NOT CONSTITUTE A LOCKOUT**

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