



Technical Supplement

Control of Hazardous Energy – LOTOTO | FCX-HSX04 | Release Date 08/05/2019

OVERVIEW

Lockout Tagout Tryout (LOTOTO) is the preferred method of energy control in most situations.

Only Qualified Individuals may perform hazardous energy isolation.

Each Authorized Individual will place their personal lock on each energy isolation device or group lockout device.

When Authorized Individuals are not able to apply locks and tag to the energy-isolating device, an (Energy Control Coordinator/Process) ECC will be used.

Cord and plug equipment is excluded if plug is under direct control.

Follow non-routine lock removal procedures for abandoned locks.

Reference FCX-HS03 Electrical Safety, for de-energization and grounding information.

EFFECTIVE LOTOTO

LOTOTO Process

1. Plan the work
 - Understand the scope of work
 - Identify sources of hazardous energy
 - Identify Qualified Individuals
 - Select appropriate controls
2. Notify
 - Equipment/system owner
 - Affected individuals
3. Qualified Individual shutdown equipment/systems
4. Isolate/Eliminate hazardous energy sources
5. Lock and Tag
 - Individual/Group
 - ECC process
6. Release stored/residual energy
7. Verify effectiveness of controls
 - Verify zero energy from all sources **and**
 - Tryout- attempt to restart all locked aspects of the equipment

Restarting Equipment/Systems

1. Inspect the area
 - Persons, tools and equipment have been removed
 - Guards and other safety devices have been reinstalled
 - Equipment is operationally intact
2. Remove all locks
3. Notify
 - Equipment/system owner
 - Affected individuals
4. Qualified Individual restore energy according to procedures

LOCKS AND TAGS

Locks (LOTOTO)

- Uniquely identifiable for energy control
- Single keyed
- Only used for energy control
- Standardized within the facility
- Not easily defeated
- ECC locks will be single keyed

Tags

- Withstand 50lbs (23 kg) of force
- Identify the individual by first and last name
- **Include appropriate contact info/method**
- ECC tags will say ECC
- Legible
- Withstand exposure to conditions (acid, weather, etc.)
- Include a warning statement
- Standardized within the facility

Out of Service Locks and Tags

- Never used for the control of hazardous energy
- Applied when equipment is deemed unsafe
- Used to protect machines and equipment from damage due to accidental start-up
- Visibly different from LOTOTO
- Tags will have “out of service” or similar message

ROLES AND RESPONSIBILITIES

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Authorized Individual	Affected Individual	Qualified Individual
<ul style="list-style-type: none"> • Individual who locks and tags isolation devices for equipment to perform service or maintenance. • Performs work on the equipment that is locked out. • Must place their own locks and tags. • Must maintain control of the key to their lock. • Responsible for returning equipment to serviceable condition prior to removing any energy isolation device or lock. • Support ECC as needed. 	<ul style="list-style-type: none"> • Individual whose job requires them to use equipment that is being serviced or maintained under LOTOTO. • Do not perform work on the equipment that is locked out. • Includes personnel in the area who are not performing work on the equipment. 	<ul style="list-style-type: none"> • Individual who may or may not be working on the lock out, but has the qualifications to perform energy isolation for the specific system being de-energized. • Ensure safe procedures for shutdown, isolation, and energy release are followed. • Responsible for verifying effectiveness of energy isolation and conducting tryout. • Support ECC as needed.

Energy Control Coordinator (ECC) Process

Each person has the right and responsibility to verify control of hazardous energy with ECC, Qualified Individuals or supervision. When an Authorized Individual joins a group lockout in process, they must apply their personal locks and tags to the group lockout device and read and understand the ECC form and make contact with the ECC.

The ECC, along with the Qualified Individual isolates and locks all hazardous energy sources using ECC locks and tags.

ECC keys are placed in a group lockout device, along with another ECC lock and tag.

Only the ECC key for the group lockout device may be handed over using specific procedures for shift changes.

The ECC lock is not the same as the personal lock and the ECC must still apply their personal lock and tag to the group lockout device if they are performing work on the system/equipment.

Multiple ECCs may be necessary for complex work.

Energy Control Coordinator Will:

Be assigned by supervision and have full responsibility for the lockout process.

Be trained and competent in the ECC process and have a working knowledge of the system being isolated.

Lead hazardous energy source identification process with support from Qualified and Authorized Individuals.

Understand the plan for the shutdown and hazardous energy control.

Manage interactions with other affected groups/individuals.

Identify Qualified Individuals to conduct Control of Hazardous Energy, and understand the role of the ECC and others.

Maintain a list of energy control points and responsible parties, Qualified and Authorized Individuals.

Maintain integrity of hazardous energy control with support from Qualified and Authorized Individuals

Manage shift changes using specific, documented procedures.

Release system back to operations with support from Qualified and Authorized Individuals.

Place the first lock on, and remove the last lock from the group lockout device.

Energy Control Coordinator Transfers:

Incoming ECC will add their information to the ECC form.

Outgoing and Incoming ECC will verbally confirm details of the work and lockout, and may visually confirm lockout devices in use.

Incoming ECC will assume responsibility of the lockout process once they take possession of the key, and put their contact information on the ECC tag.

Outgoing ECC will remove their personal lock from the group lockout device before leaving the area.

The ECC form will be kept with the lockbox unless ECC is actively being transferred.

No new Authorized individuals will join the LOTOTO in process until the ECC transfer is complete and form has been returned.

Work can continue by Authorized Individuals who have already signed the Individual Lockout Roster while ECC transfer is in process.

Non-Routine Lock Removal

When the Authorized Individual is not available to remove a device or the owner of a lock out device cannot be identified, that device may be removed. Always follow the non-routine lock removal form.