



# SOUTHERN COMPANY GENERATION

SCG-SH-0201

## LOCKOUT TAGOUT (LOTO) PROCEDURE

<b>Revision</b>	<b>Approval Date</b>	<b>Approved by</b>	<b>Title</b>
0	June 9, 2016		Executive Vice President and Chief Production Officer
1	January 1, 2018		Executive Vice President and Chief Operating Officer

## CONTENTS

1.0	PURPOSE AND SCOPE .....	2
1.1	Purpose .....	2
1.2	Scope .....	2
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions .....	3
2.2	References .....	10
3.0	RESPONSIBILITY .....	10
3.1	Plant Manager .....	10
3.2	Operating Area Manager.....	10
3.3	LOTO Administrator .....	11
3.4	Authorized List Administrator .....	11
3.5	Requestors .....	11
3.6	Operating Area Leader (OAL) .....	11
3.7	Primary Authorized Employee (PAE) .....	12
3.8	Operating Area Authorized Employee (OAAE).....	13
3.9	Verifier .....	13
3.10	LOTO Holder .....	13
3.11	LOTO Coordinator .....	14
3.12	Non-listed Worker .....	15
4.0	PROCEDURE .....	16
4.1	Routine Lockout/Tagout (LOTO) .....	16
4.2	Simple LOTO .....	16
4.3	Develop LOTO Record .....	17
4.4	Isolate Equipment .....	19
4.5	Verify Isolation .....	22
4.6	Perform Work.....	24
4.7	Maintenance Release .....	26
4.8	Work Completed .....	28
4.9	Release LOTO.....	29
4.10	Suspend Work .....	30
4.11	Testing.....	31
4.12	Modify Boundary .....	32
4.13	Non-listed/Visitor Lock .....	33
4.14	Lock Emergency Removal .....	34
5.0	TRAINING .....	35
5.1	LOTO Awareness Training.....	36
5.2	Authorized Worker Training .....	36
5.3	Department Training and Proficiency Requirements .....	37
5.4	Authorized List .....	37
6.0	Procedure Review .....	37
6.1	LOTO Periodic Inspection .....	38
6.2	Facility Active LOTO Review.....	38
7.0	KEY CONTACT .....	39
8.0	QUALITY RECORDS .....	39
9.0	ATTACHMENTS .....	39

## **1.0 PURPOSE AND SCOPE**

### **1.1 Purpose**

This procedure establishes a program, consisting of energy control, employee training, and periodic inspections, to ensure that before any worker performs any servicing or maintenance on equipment where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the equipment is isolated from the energy source and rendered inoperative.

NOTE: Failure to follow directives outlined in this procedure is considered sufficient cause for disciplinary action, up to and including discharge.

### **1.2 Scope**

This procedure applies to all persons (employees and contractors) working on equipment under the control and operation of Southern Company Generation facilities.

This procedure does not supersede procedures established for the orderly shut down of equipment. Those procedures must be followed to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

NOTE: This procedure does not apply to the following:

- Electrical energy sources less than 50V.
- Work on cord- and plug-connected equipment, where exposure to the hazards of unexpected energizing or startup of the equipment is controlled by unplugging the equipment from the energy source, and the plug is under the exclusive control of the individual performing the service or maintenance.
- Minor servicing, which includes performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).
- Work that does not involve plant-controlled equipment such as:
  - Equipment under the exclusive control of Transmission or Distribution.
  - Equipment identified as new construction that is under the exclusive control of E&CS Projects and has not been connected to the facility.

Generating facilities may develop site-specific procedures to supplement this procedure. Site-specific procedures do not replace material covered in this procedure.

When external maintenance or servicing personnel will be engaged in activities covered by the scope of this procedure, the authorized representatives of the Company and the contractors shall provide and coordinate their respective lockout or tagout procedures.

Details of the LOTO program will be covered as part of the Contractor Orientation Checklist. Southern Company LOTO Awareness Training is available under "Safety Orientation Requirements for Generation Contractors" at the following link: <http://southerncompany.com/about-us/suppliers/requirements-plant-access.cshtml>. It is the responsibility of each outside servicing employer to train and document their employees in the requirements of this procedure prior to the start of work.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**active LOTO** – A LOTO that has been issued, executed, and has an operating area lock (orange) secured to a master lockbox indicating the associated equipment is isolated and ready for service or maintenance activity.

**active LOTO file** – A designated file or location, such as master lockbox, that holds all LOTO records that have been issued and are considered to be active.

**affected employee** – Employee that is affected by a lockout; which means their work involves the equipment that is being locked out and their job will be affected during the lockout. An affected employee is not authorized to lockout equipment.

**authorized employee** – Employee who has had proper training on equipment isolation and the associated hazards and is allowed to use lockout devices. An authorized employee can be an affected employee.

Authorized employees are qualified by training and evaluation in the Southern Company Generation LOTO procedure in the following categories:

- **LOTO Holder** – A qualified employee/worker who may request LOTO and/or perform work on equipment or systems held by LOTO.
- **LOTO Coordinator** – A qualified employee/worker who may request LOTO and/or coordinate work on equipment or systems held by LOTO for non-listed workers or other authorized workers.
- **Operating Area Authorized Employee (OAAE)** – A person who can lockout or tagout equipment when servicing and/or maintenance is performed by crew, craft, department, or other group. An Operating Area Authorized Employee can perform the following duties:
  - Develop LOTO records.
  - Execute/Verify LOTO records.
- **Operating Area Leader (OAL)** – A person who has primary responsibility for a set number of employees working under the protection of a group lockout device (operating area lock (orange)); has the knowledge and authority to determine if a requested piece of equipment can be taken out of service based on operational conditions, personnel, unit commitments, worker and equipment safety, and any other factors that may impact system reliability; has been qualified to perform all roles of the OAAE; and has the authority to perform the following duties:
  - Accept requests

- Approve/reject requests
- Approve LOTO records
- Issue isolation/release LOTO records
- Approve boundary modifications
- Activate LOTO records
- Complete LOTO records
- Serve as primary authorized employee, as required (see 3.7, Primary Authorized Employee)

NOTE: Operating Area Leader and Operating Area Authorized Employee roles must be independently selected in Cool Compliance to grant permissions within TKPro.

**authorized list** – Roster maintained for the facility that identifies authorized workers by name and type of LOTO activity(ies) each worker is permitted to perform. Inclusion on the authorized list is determined at the discretion of the facility's management as approved in Cool Compliance.

**capable of being locked out** – Energy isolating device capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

**designated operating area (DOA)** – Area or department of the facility that has the exclusive control of issuing and executing LOTO in their specific area. Examples of designated operating areas:

- Operations
- Fuels
- Laboratory
- Environmental
- Individual hydro plants
- Combustion turbine plants
- Combined cycle plants
- Solar plants

**energy isolating device** – A device that physically prevents the transmission or release of energy, including but not limited to the following: an electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy.

NOTE: Push buttons, selector switches, and other control circuit type devices are not energy isolating devices. See Attachment B for an example of an Operational Control Tag when control devices require exclusive control of the operating area.

**energy source** – Any source of electrical (50V or greater), mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, or other energy.

**hasp** – A device that allows energy isolating devices to be locked with multiple locks.

**isolate** – Removal of all sources of energy from the equipment to be worked on.

**isolation test** – The method used to ensure all stored energy sources cannot create the potential for injury or accident while servicing or maintenance is being performed on the equipment. The test method is documented on the LOTO Record, as follows:

- **visual** – A visual inspection to ensure air gap exists or an installed voltage indicator determines absence of energy between energy sources and isolation devices.
- **test equipment** – Use of instrumentation to verify electrical energy sources are isolated. Voltage meters and noncontact voltage detectors that alarm in the proximity of voltage applications are acceptable, based on the skills and training of the qualified person. All devices must be properly rated for voltage.

Note: Proximity meters are not acceptable for shielded cables. DC circuits and shielded cables must be tested at termination points.

- **test/try** – Test performed by attempting to operate a piece of equipment either remotely or locally to ensure the equipment will not operate.
- **drain/de-pressurize** – Verification that a system or component is drained, depressurized, and safe for work.

**issued LOTO** – LOTO record identified in the software (TKPro) as in-progress by the OAL while the OAAE performs steps to isolate equipment for upcoming service or maintenance activities.

**lockbox** – Box with multiple locking points in which the key(s) to the lockout device(s) are placed and secured by authorized employees. Lockboxes are red or yellow, based on the following criteria:

- **master lockbox** – Red lockbox in which key(s) to red isolation locks are placed and secured by an operating area lock (orange). LOTO holders secure locks (individual (blue)/coordinator (green)) after the operating area lock (orange) is secured, to hold the LOTO for service or maintenance activity. The original completed LOTO documentation (LOTO records, LOTO test records, etc.) shall be maintained in an active LOTO file, and the LOTO cover sheet is attached to the master lockbox (red).
- **satellite lockbox** – Yellow lockbox that is an extension of the master lockbox (red). It may be located remotely in an area that provides convenient access for workers while under the exclusive control of the LOTO Coordinator. A

satellite lock (yellow) will be used in conjunction with the satellite box and is secured to the master lockbox; the associated key is secured in the satellite box with a coordinator lock. A copy of the LOTO documentation (LOTO records, LOTO test records, etc.) is attached to the satellite lockbox.

**lockout** – Placement of a lockout device on an energy isolating device, in accordance with an established procedure, to ensure the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**lockout device** – Device that employs a positive means (lock and key) to hold an energy isolating device in the safe position and prevent the energizing of equipment. See Attachment A for an example of lockout devices. Southern Company Generation approved lockout devices include the following:

- Isolation lock – Red in color, used to secure energy isolation devices. Always secured with an attached tagout device.
- Operating area lock – Orange in color, used for operating area continuity; indicates equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices have not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.
- Individual lock – Blue in color, assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose. Individual locks must display worker name and contact number.
- Coordinator lock – Green in color, used by departments to coordinate multiple work crews, ensure continuity and integrity of an active LOTO for the protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.
- Satellite lock – Yellow in color, used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox. Requires an attached LOTO information tag.
- Non-listed/visitor lock – Brown in color, used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Only used at the direction of a LOTO coordinator and after a coordinator lock (green) is secured. Non-listed/visitor locks are issued for temporary use at the discretion of plant management. Requires an attached LOTO information tag.
- Contractor lock – Lock provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker.

When securing to Southern Company lockout devices, contractor locks shall adhere to the following:

- Contain worker's name, contact number, and company.
- Not be manufactured by American Lock

- Shall be silver, gray, or black in color.

**lockout tagout (LOTO)** – A safety procedure used to ensure equipment is properly shut off and not able to be started up until the completion of maintenance or service work. It requires hazardous energy sources to be "isolated and rendered inoperative" before work is started on the equipment in question. Lockout tagout can be accomplished in the following ways:

- group LOTO – a LOTO executed by authorized workers within a designated operating area for other workers requesting to perform service or maintenance work on equipment.
- simple LOTO – a LOTO executed by authorized workers where personal-protection locks are applied directly to isolation devices when the below criteria is followed:
  - Workers have knowledge, training, skills, tools, and time to perform work safely.
  - Scope of work is of short duration (can be completed in one shift).
  - Isolation steps include five or fewer isolation devices.
  - Scope of work has no special conditions such as confined space, grounding, hydrogen, natural gas, or process safety management chemicals.
  - Parts are readily available.
  - Facility has defined acceptable equipment or type of equipment in site-specific procedures.
  - Permission of the designated operating area (DOA) to proceed exists.
  - Approved documented procedural steps exist and must be followed.

NOTE: Procedural steps are not required if the equipment has a single energy source that can be readily identified, isolated, and verified, and no prior accidents exist involving the unexpected activation or re-energization of equipment during service or maintenance.

**LOTO administrator** – Individual responsible for administration of the LOTO software. Each facility has LOTO administrator(s), who administers responsibilities, approves standards, and performs other local functions. There is also a corporate LOTO administrator, who is responsible for the overall administration and configuration of the LOTO software across all Southern Company Generation facilities.

**LOTO boundary** – Energy isolating devices required for a designated scope of work.

**LOTO information tag** – Tag that identifies the responsible person using a lockout device. Each tag is secured via the lock shackle and, at a minimum, contains the worker's

name and contact number. See Attachment B for an example of a LOTO information tag.

**LOTO record** – Instructional checklist of energy isolating devices needed for a LOTO boundary, used to place and secure equipment in a desired isolation or service position.

**minor servicing** – The act of performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).

**non-listed worker** – Person performing service or maintenance under the direction of a LOTO coordinator and who is not included on the facility's authorized list. These individuals may be unfamiliar with the equipment or lack the necessary experience or training to individually hold LOTO.

A non-listed worker may perform work under LOTO at the request of the LOTO coordinator in either of the following two ways:

- Individual accountability – By securing directly to an approved Southern Company LOTO device with the permission of the LOTO coordinator.
  - All non-listed workers shall secure a personal protective lock directly to the LOTO device. Under this system, a Southern Company LOTO coordinator shall be responsible for the non-listed group of individuals and assume responsibility for the accountability and notification of any changes to the LOTO.
  - Alternate accountability – A system where a contractor responsible person holds LOTO for other workers. This system can be used when approved by Southern Company plant management. The contractor responsible person, specified by the contractor, may be a contractor superintendent, crew foreman, project coordinator, or any other responsible individual associated with the group and shall be responsible for the following:
    - Communicating with all non-listed individuals who intend to work on plant equipment.
    - Securing a lock designated as an alternate accountability responsible person device behind a coordinator lock on either the hasp or the satellite box.
    - Ensuring each individual worker secures an individual personal protective lock to the appropriate lockout device per their employer's energy control program.
  - Under this system, a Southern Company LOTO coordinator shall hold the LOTO for the contractor responsible person and provide them all information, including limitations and boundaries associated with the scope of work and LOTO record.

**NOTE:** Contractors shall maintain an effective energy control program of accountability using locks for personnel that meets all requirements set forth in 29

CFR 1910.269(d), 1910.147, and this procedure. Program shall demonstrate controlled means to remove individual worker's lockout devices when not at the facility. Prior to using alternate accountability, contractor shall submit their site-specific alternate accountability system to plant management for approval.

**normal production operations** – Use of equipment to perform its intended production function.

**personal protective lock** – Lockout device used for the protection of individuals performing work under a LOTO. Personal protective locks can be individual, non-listed/visitor, or contractor locks.

**qualified person** – Person who is competent, by their electrical knowledge and skills, to safely work on energized circuits. Competence includes the demonstration of proper use of precautionary techniques, personal protective equipment, insulating materials, voltage detection devices, and insulated tools.

NOTE: Third-party qualified persons shall be trained and qualified by their respective employer.

**requestor** – Employee/worker on the authorized list who has requested a LOTO to have scheduled service or maintenance activity performed on a piece of equipment.

**servicing and/or maintenance** – Workplace activities such as constructing, installing, adjusting, inspecting, modifying, and servicing and/or maintaining equipment. These activities include lubrication, cleaning, or unjamming of equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment or release of hazardous energy.

**standards** – LOTO records, grouped by equipment, developed, approved, and saved for recurring maintenance activities. Standards for each facility are approved by a LOTO administrator at that facility.

**system break** – the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**tagout** – Placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed.

**tagout device** – Prominent warning device, securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed. See Attachment B for an example of a tagout device.

NOTE: When TPGs are installed as part of the LOTO record by the Southern Company Generation qualified person, two red tags shall be fastened to the TPGs.

Where a lockout device(s) cannot be affixed directly to the energy isolating device, a tagout device shall be located as close as safely possible to the energy isolating device in a position obvious to anyone attempting to operate the device.

Where tagout devices are used to control isolation devices, additional means shall include the implementation of additional safety measures, such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energizing.

NOTE: Tagout devices without a lock shall only be used on isolation devices until a permanent means to hang a lock can be designed and installed.

**temporary protective ground (TPG)** – Device installed by a qualified person for the purpose of grounding electrical equipment previously energized at a voltage greater than 600 V.

**temporary protective ground (TPG) tags** – Orange tags affixed to grounds by a qualified third party to control the installation and removal of the grounds.

**TKPro** – Software used to manage, document, and track activities within the LOTO process. It is the official repository of LOTO documentation, including standards.

**worker** – Person performing service or maintenance under LOTO.

## 2.2 References

- 29 CFR 1910.269, Electric power generation, transmission, and distribution
- 29 CFR 1910.147, The control of hazardous energy (lockout/tagout)
- SCG-SH-0230, Temporary Protective Grounds
- D-11, Design Functional Tags

## 3.0 RESPONSIBILITY

### 3.1 Plant Manager

Plant manager maintains overall responsibility for the administration of the LOTO program, and is responsible for implementing and strictly enforcing this procedure. The plant manager, or designee, also has responsibility and control of all spare and backup keys issued for removing locks of other employees or departments.

### 3.2 Operating Area Manager

The operating area manager ensures the LOTO procedure is correctly administered by all designated operating area employees and they are following the LOTO procedure and

performing their respective duties. Operating area manager also defines the process for assigning a single designated primary authorized employee per shift.

### **3.3 LOTO Administrator**

There are LOTO administrators for each facility, appointed by management, responsible for the following:

- Reviewing and approving standards at a facility.
- Interfacing with corporate LOTO administrators on software changes or improvements.
- Administration of LOTO training at a facility.

The corporate LOTO administrators will represent operating companies (Alabama Power, Georgia Power, Gulf Power, Mississippi Power, and Southern Power) and are responsible for the following:

- Administration of the LOTO software across the Southern Company Generation facilities.
- Gathering input on software changes or improvements.

The Southern Company Generation corporate LOTO administrator is the primary interface with the LOTO software provider and coordinates changes or improvements.

### **3.4 Authorized List Administrator**

The authorized list administrator is designated by the plant manager and is responsible for approving or denying permission requests for the plant's authorized list through Cool Compliance.

### **3.5 Requestors**

The requestor collaborates with the OAL to ensure the LOTO request record is appropriate for the work to be performed. The requestor works with the OAL to complete the LOTO request record. The LOTO request record populates the LOTO information section of the LOTO record and notifies affected workers of scheduled service or maintenance activity. The requestor is responsible for the following:

- Determining what equipment requires isolation for the purpose of servicing for maintenance activity.
- Reviewing with the OAL all applicable scopes of work, work orders, electrical or mechanical prints, and/or other relevant documents to ensure all energy isolations are properly identified.
- Confirming, in collaboration with the OAL, mutual understanding and agreement on energy isolation points are achieved.

### **3.6 Operating Area Leader (OAL)**

The OAL is identified as the person with authority to perform specific roles in the LOTO process. The OAL may be a supervisor, operator, or other designee as defined by management, and is responsible for the following:

- Implementing the LOTO procedure.
- Reviewing and understanding the LOTO Request Record.
- Ensuring the operating area (unit) can support and approves the request for LOTO.
- Developing or assigning an OAAE to develop the LOTO isolation record.
- Create standards for approval by the local LOTO administrator.
- Ensure the proper LOTO boundaries are established through reviewing scope and type of work, performing system walk downs, reviewing drawings, and ensuring the proper positioning of devices.
- Ensuring the LOTO record is appropriate for the scope of work and is completed before initiating the isolation process.
- Approving selected LOTO records.
- Assigning OAAE and issuing the LOTO record to execute.
- Resolving any LOTO boundary issues.
- Reviewing the completed LOTO record for accuracy and completeness.
- Authorizing placement or removal of third party grounds. Tracking (TKPro), issuing, and collecting TPG tags (orange).
- Ensuring all locking devices are accounted for and the number of locks/tags matches the number of entries on the LOTO record.
- Assigning a verifier to walk down and verify the execution of the LOTO record.
- Activating the LOTO by ensuring all isolation keys are placed inside the master lockbox and are secured with an operating area lock.
- Activating the LOTO record (TKPro).
- Notifying the requestor of an active LOTO.
- Controlling access to the master lockbox. Ensuring all LOTO holders have reviewed the LOTO information prior to locking on the appropriate lockbox or devices.
- Ensuring all locks are removed before any release or test, boundary reduction modification, or release.
- Removing the operating area lock on the master lockbox to support a release for test, boundary reduction modification, or final release.
- Assigning an OAAE to release the LOTO.
- Reviewing the completed LOTO documents and verifying the LOTO documents indicate the LOTO has been released and equipment is ready for operation.
- Completing the LOTO Record (TKPro) and storing the completed LOTO documents per the record retention schedule.

### **3.7 Primary Authorized Employee (PAE)**

When workers are servicing or maintaining equipment under a group LOTO, a single PAE is identified and documented in each designated operating area for every shift. Transfer of the PAE responsibilities may only be conducted during shift or personnel changes to ensure continuity. Responsibilities of the PAE include the following:

- Having overall job-associated lockout or tagout control responsibility when employees are working under the protection of a group lockout or tagout device(s).
- Coordinating affected work forces and ensuring continuity of protection.
- Providing oversight, ensuring the designated operating area follows provisions for each authorized employee to affix a personal lockout device to the group lockout device, group lockbox, or comparable mechanism, when he or she begins work, and

ensuring they remove those devices when he or she stops working on the equipment being serviced or maintained.

- Ensuring the designated operating area follows procedure for orderly shutdown and startup of equipment.
- Identifying the PAE in the turnover log system for each designated operating area when turnover review has been completed and responsibility has been transferred.

### **3.8 Operating Area Authorized Employee (OAAE)**

The OAAE is identified as the person with authority to perform specific roles in the LOTO process. The OAAE may be an operator or other designee as defined by management. The OAAE is responsible for the following:

- Developing a LOTO boundary on the LOTO record that is appropriate for the scope of work, eliminating hazardous energy
- Reviewing the LOTO record with the OAL.
- Placing isolation locks, associated locking devices, and tags on the isolation component, in the proper sequence as outlined on the LOTO record.
- Ensuring the appropriate energy sources to equipment being worked on is properly isolated by a visual, test try, test equipment, or drain/depressurize method.
- Completing each line item on the LOTO record to document the device position and test method used.
- Removing the locking devices and restoring the equipment to the desired position as determined on the LOTO release record.
- Visually verifying personnel are not exposed to equipment before re-energizing equipment.
- Creating standards for approval by the LOTO administrator.

### **3.9 Verifier**

The verifier validates (through review) completion of the LOTO. The verifier may not reposition or remove any lockout device placed on equipment. The verifier is responsible for the following:

- Verifying each device listed on the LOTO record is correctly tagged and locked per the LOTO record and the *Test Method* section is complete.
- Initialing and signing required sections of the LOTO record.
- Notifying the OAL immediately when any devices are discovered in conflict with the LOTO record.

### **3.10 LOTO Holder**

The LOTO holder is an authorized employee/worker who may request LOTO and/or perform work on equipment held by LOTO. The LOTO holder is responsible for the following:

- Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.

- Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using an individual lock (blue).
- Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.
- Before beginning a new shift, verifying the LOTO is still active.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.
- Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.
- Immediately removing personal protective locks when work is complete and safe to return to service or suspended.
- Prior to removing an individual lock, ensuring a coordinator lock is secured if work is not complete and safe to return to service.

### **3.11 LOTO Coordinator**

The LOTO coordinator is an authorized employee/worker who may request LOTO and/or coordinate work on equipment held by LOTO workers. The LOTO coordinator is responsible for the following:

- Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.
- Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using a coordinator lock (green).
- Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.
- Before beginning a new shift, verifying the LOTO is still active.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task as authorized by Maintenance Release LOTO.
- Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.
- Controlling access to the satellite lockbox. Providing information (including limitations and boundaries associated with the scope of work and LOTO record) to all workers performing service or maintenance under the coordinator lock (green).
- Managing the installation and removal of third-party TPGs.
- Working with the designated operating area to track the issue and return of TPG tags.
- Securing an individual lock prior to performing any maintenance, inspection, or service of equipment controlled by an active LOTO.
- Removing all locks immediately when work is complete or suspended.

- Completing a Coordinator Continuity Transfer Record prior to taking responsibility of a coordinator lock and either having full understanding of work scope status or obtaining permission of the current LOTO coordinator. Securing a coordinator lock and LOTO information tag before removing the prior coordinator lock.

NOTE: The LOTO coordinator attaches the Coordinator Continuity Transfer Record to the appropriate lockbox or active LOTO file for the duration of the work. At completion of work, the LOTO coordinator returns the record to the DOA, retaining per Southern Company Records Retention Schedule.

### 3.12 Non-listed Worker

A non-listed worker is a worker performing service or maintenance under the direction of a LOTO coordinator. The non-listed worker shall be responsible for the following:

- Successfully completing LOTO awareness training.
- Knowing that equipment is not safe for performing service or maintenance unless a LOTO has been established and workers are locked on to the appropriate lockbox or device.
- Understanding their role in the LOTO procedure and implementing methods to ensure compliance with this procedure.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Personally locking on and off the appropriate lockbox or device when required, but only after a coordinator lock (green) is secured. Only securing a personal protective lock to a hasp or yellow satellite box.
- Reviewing the LOTO information provided by the LOTO coordinator. Obtaining a copy of all requested LOTO documents.
- Knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device and performing work.
- Knowing they have the option, and are encouraged, to personally walk down the LOTO boundaries to ensure a safe work condition.
- Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.
- Stopping work when any deficiencies of the LOTO are identified or when concerns are noted with the LOTO boundaries or associated scope of work, and reporting immediately to the LOTO coordinator.
- Immediately removing personal protective locks when work is complete or suspended.

See *non-listed worker* definition for details on working under LOTO.

NOTE: Non-listed Workers shall always secure personal protective locks on a hasp or yellow satellite box behind a coordinator lock (green). Non-listed Workers shall not secure a lock directly to a master lockbox. Non-listed workers shall not secure a lock to any Southern Company LOTO device without the permission of the LOTO coordinator or additionally when a coordinator lock is not secured to that device.

## 4.0 PROCEDURE

### 4.1 Routine Lockout/Tagout (LOTO)

#### [Process Map](#)

Routine LOTO defines the overall process for isolating equipment for servicing and maintenance in which the unexpected energizing or startup of the equipment, or release of stored energy, could harm employees. This process establishes minimum performance requirements for the control of such hazardous energy.

NOTE: All LOTO records shall be created and issued via the TKPro software. In the event of an unscheduled software outage, each facility shall manually create and issue temporary LOTO records until the software returns to service. An index shall be kept of each record using a sequential log number for the designated operating area. All fields on each LOTO record shall be completed to include device descriptions and device number. Associated temporary LOTO tags shall contain at minimum the log number and date. See Attachment C for an example of temporary LOTO records.

Existing active LOTO records shall be completed and retained in a temporary folder until TKPro records are updated and documents can be filed per the record retention schedule.

### 4.2 Simple LOTO

#### [Process Map](#)

Simple LOTO defines the process for applying individual locks directly to isolation devices by authorized workers to maintain local control of equipment under LOTO.

NOTE: If the work has not been completed and/or the equipment is not ready to be placed in service at the end of shift, or when the authorized employee leaves the facility, the OAL shall be contacted immediately and proceed to 4.3, Develop LOTO Record.

1. OAL selects the Simple LOTO record for the scope of work in software (TKPro).
2. OAL assigns the authorized employee from the *LOTO Activated By* dropdown list (TKPro) to execute the LOTO.
3. LOTO holder receives the LOTO simple record and executes according to the execution steps, then places devices in the isolation position, and installs individual locks (blue) and tags. Each step is installed to document execution.

*Proceed to 4.5, Verify Isolation*

NOTE: When executing a Simple LOTO, the LOTO Holder performs the duties of the OAAE in the Verify Isolation process.

4. LOTO holder signs the simple LOTO record (in the LOTO Activated By field) to document execution of the LOTO steps.

5. LOTO holder performs prejob briefing.
6. LOTO holder performs maintenance activity.
7. LOTO holder determines if work is completed and equipment is safe to return to service.

*If yes, proceed to Step 8*

*If no, proceed to 4.3, Develop LOTO Record*

8. LOTO holder removes the locks from the isolation devices, positions, and initials each step according to the LOTO simple record (release).
9. LOTO holder signs the LOTO simple record (in the LOTO Released By field) to signify scope of work is complete and the equipment is released to Operations.
10. The OAL along with the LOTO holder, reviews the returned documentation with the LOTO holder for completeness and ensures the proper number of tags has been returned.
11. OAL completes the LOTO (TKPro) to document the simple LOTO is completed.
12. OAL files the original completed LOTO documents and retains per Southern Company Records Retention Schedule.

*End of process*

#### **4.3 Develop LOTO Record**

##### [Process Map](#)

Develop LOTO Record defines the process for requesting and developing LOTO records identifying procedural steps to develop, document, and control potentially hazardous energy when employees are engaged in service and maintenance activities.

Employees shall request LOTO when performing servicing and/or maintenance activity on equipment in which the unexpected energizing, startup, or release of stored energy from the equipment could cause injury to employees.

1. Requestor identifies equipment to be worked on.
2. Requestor submits a LOTO request record (TKPro) to outline the scope of work and equipment to be isolated for servicing or maintenance.

NOTE: If maintenance release or simple is required, begin Reason for LOTO field with "Maintenance Release" or "Simple LOTO".

3. OAL, along with the requestor, reviews the request and scope of work to ensure understanding. (TKPro)

4. OAL determines if the equipment can be removed from service without interrupting unit operation.

*If yes, proceed to Step 5*

*If no, proceed to Step 20*

5. OAL approves LOTO Request. (TKPro)
6. OAAE reviews the LOTO request record and defines the isolated boundaries to match the scope of work.
7. OAAE searches the LOTO standards in database to determine if a standard already exists.

*If yes, proceed to Step 8*

*If no, proceed to Step 9*

8. OAAE selects the standard (TKPro) to match the scope of work.

NOTE: If Maintenance Release, use satellite box and assign at least two additional separately keyed isolation locks.

9. OAAE creates the LOTO record and saves (TKPro).

10. OAAE modifies the LOTO record (TKPro)

NOTE: Indicate isolations on LOTO Isolation Record that will be used for Maintenance Release.

11. OAL reviews the LOTO record (TKPro) to confirm the isolation boundaries match the scope of work.

12. OAL determines if request is for Simple LOTO

*If yes, proceed to 4.2, Simple LOTO*

*If no, proceed to Step 13*

13. OAL determines whether to approve the LOTO for execution.

*If yes, proceed to Step 14*

*If no, proceed to Step 6*

14. OAL selects an available lockbox (TKPro)
15. OAL assigns the authorized employee selected from the LOTO Isolation Executed By dropdown list (TKPro) to execute the LOTO.
16. OAL assigns the authorized employee selected from the LOTO Isolation Verified By dropdown list (TKPro) to verify the LOTO.

NOTE: If using independent verification and the name of the authorized employee is not available, manually complete this section as assigned in the Isolate Equipment Process (Step 17).

17. OAL determines if a Maintenance Release is required.

*If yes, proceed to Step 18*

*If no, proceed to Step 19*

18. OAL issues two single locks for the isolation devices associated with the maintenance release.

19. OAL approves the LOTO (TKPro) and prints the forms and tags (issues) for the LOTO.

*Proceed to 4.4, Isolate Equipment*

20. OAL notifies the requestor unit operations cannot support the request.

*End of Process*

#### **4.4 Isolate Equipment**

##### [Process Map](#)

Isolate Equipment defines the process for isolating (device positioning, locking, tagging, grounding, etc.) equipment when servicing and/or maintenance is performed by a crew, craft, department or other group (Group LOTO). All hazardous energy sources shall be isolated in such a manner as to prevent their inadvertent activation. Only approved energy isolating devices specifically provided by the facility for the purpose of controlling hazardous energy shall be used. Operating Area Authorized Employees shall be responsible for isolating equipment per the LOTO record as issued by the Operating Area Leader.

NOTE: Southern Company Generation Qualified Persons shall install Temporary Protective Grounds (TPGs) per the identified steps on the LOTO record. TPGs shall be secured at minimum with an isolation lock on the ground side of the cable and tagged on both sides of the ground with a danger tag.

1. OAL determines if the concurrent verification is to be used per site-specific procedure.

*If yes, proceed to Step 2.*

*If no, proceed to Step 3*

2. OAL assigns a verifier to go with the LOTO executor (TKPro).

3. OAAE receives the LOTO record and executes according to the execution steps, then places devices in the isolation position, and installs locks and tags. Each step is initialed to document execution.

NOTE: If any device requires an isolation test to be performed prior to securing a lockout device, proceed to 4.5, Verify Isolation prior to securing isolation lock and tagout devices.

*Proceed to 4.5, Verify Isolation*

4. OAAE determines if internal grounds are required.

*If yes, proceed to Step 5*

*If no, proceed to Step 8*

5. OAL requests a qualified person to install internal grounds.
6. Prior to installing the grounds, the qualified person performs a walkdown and tests the conductor to verify absence of energy.

NOTE: Use device properly rated for voltage.

7. Qualified person, with guidance from the OAAE, installs the internal grounds.

Reference: SCHG-SH-0230 Temporary Protective Grounds

8. OAAE signs the Executed By section of the LOTO Isolation Record and returns to OAL for review.
9. OAL reviews the completed LOTO Record with the OAAE to ensure completeness of the record and all steps are executed.
10. OAL determines if concurrent verification was performed.

*If yes, proceed to Step 11*

*If no, proceed to Step 16*

11. OAL determines if LOTO is a maintenance release.

*If yes, proceed to 4.7, Maintenance Release*

*If no, proceed to Step 12*

12. OAL places the key(s) to the isolation devices in the master lockbox, then secures the master lockbox with an operating area lock.
13. OAL activates the LOTO Isolation Record (TKPro).

14. OAL attaches the cover page to the master lockbox and places the associated LOTO record(s) in the active LOTO file.

15. OAL notifies the requestor the LOTO is active.

*Proceed to 4.6, Perform Work*

16. OAL assigns a verifier for independent verification.

17. Verifier walks down the equipment per steps on the LOTO Isolation Record to confirm LOTO devices are properly installed on correct devices. The verifier initials that all devices are correct per LOTO Isolation Record.

NOTE: The verifier shall not reposition any devices as a part of this walkdown. If any portion of the LOTO record is in question, the verifier shall return to the OAL for resolution.

18. The verifier signs the LOTO Isolation Verified By field on the LOTO Isolation Record.

19. OAL reviews the completed LOTO Record with the verifier to ensure completeness of the record and all steps are verified.

*Proceed to Step 11*

20. OAL reviews the boundary issue with the OAAE.

21. OAL determines if the boundary can be modified to resolve the boundary issue.

*If yes, proceed to Step 22*

*If no, proceed to Step 24*

22. OAL reviews boundary issue with the LOTO with the OAAE and revises LOTO record to resolve the boundary issue.

23. OAL determines if the boundary modification record is approved.

*If yes, proceed to Step 1*

*If no, proceed to Step 24*

24. OAL notifies a requestor the unit cannot support the isolation request.

*Proceed to 4.9, Release LOTO*

## 4.5 Verify Isolation

### [Process Map](#)

Verify Isolation defines the process for ensuring the equipment is properly removed from service and that all stored and/or potentially hazardous or residual energy has been relieved, disconnected, or properly restrained.

The verifier shall not reposition or remove any lockout device placed on equipment. Any devices discovered in conflict with the LOTO record shall be identified and brought to the Operating Area Leader (OAL) for resolution.

The Operating Area Authorized Employee (OAAE) assigned to execute the LOTO record shall be responsible for verification of isolation.

1. OAAE determines if any isolation devices are electrical components.

*If yes, proceed to Step 2*

*If no, proceed to Step 13*

2. OAAE determines if it is possible to perform a visual inspection either through (1) ensuring an air gap exists between the source and equipment or (2) an installed voltage indicator to verify the absence of voltage.

NOTE: When an installed voltage indicator is used, the OAAE shall verify the voltage indicator is operating properly prior to performing the isolation step. If the voltage indicator is not working properly, it cannot be used as a verification method.

*If yes, proceed to Step 9*

*If no, proceed to Step 3*

3. OAAE determines if a test try will be performed.

*If yes, proceed to Step 10*

*If no, proceed to Step 4*

4. OAAE determines if test equipment can be used.

*If yes, proceed to Step 5*

*If no, proceed to Step 6*

5. The qualified employee will use test equipment to verify the absence of the energy and prove to the OAAE that hazardous energy is absent.

NOTE: Use a device properly rated for the voltage.

6. OAAE determines if hazardous energy is absent.

*If yes, proceed to Step 7*

*If no, proceed to 4.4, Isolate Equipment (Step 22)*

NOTE: If any required mechanical component by design cannot be tested for isolation, plant management will work with the appropriate personnel to establish safe work procedures for a system break prior to activating the LOTO.

Using a system break for an isolation test shall only be used until a permanent means for isolation test can be installed.

7. OAAE updates the Test Performed By section of LOTO Isolation Record to indicate the verification action performed.

NOTE: When isolation devices have an active LOTO in place (overlapping LOTO) it shall be assumed that the prior isolation test has not been compromised. The test method section shall be lined through and indicated as a visual test method. The test performed by section shall be initialed, and the prior active LOTO number shall be referenced in the notes section.

8. OAAE determines if a Simple LOTO record is used.

*If yes, proceed to 4.2, Simple LOTO (Step 12)*

*If no, proceed to 4.4, Isolate Equipment (Step 4)*

9. OAAE confirms absence of voltage by confirming a visual air gap exists or the voltage indicator validates an absence of voltage.

*If yes, proceed to Step 6*

*If no, proceed to 4.4, Isolate Equipment (Step 22)*

10. OAAE clears the area for the equipment that will be attempted to start.

NOTE: Ensure area around equipment is clear of hazards and all personnel in case the equipment should start inadvertently during the test try. Controls should be placed in the "stop" or "off" position following verification of a test try.

11. OAAE performs a test try by attempting to start the equipment using control devices.

NOTE: Attempt to start equipment. (Emergency stops and other interlocks should be checked to make sure they would not block the startup of the equipment.) If using a Start button for the try test, press the Stop button afterward.

12. OAAE determines if the equipment started.

*If yes, proceed to 4.4, Isolate Equipment (Step 22)*

*If no, proceed to Step 7*

13. OAAE verifies the system or device is drained, depressurized, and safe for work. Verification can be confirmed by using a pressure gauge, drain, vent, or equivalent method.

*Proceed to Step 6*

#### **4.6 Perform Work**

##### Process Map

Perform Work defines the process for all workers to ensure an energy isolating device remains in a safe position and prevents the energization of equipment while performing servicing or maintenance activities.

1. LOTO Holder selects the LOTO and verifies with DOA the selected LOTO matches the scope of work.
2. LOTO Holder secures the master lockbox with an individual or coordinator lock.
3. LOTO Holder determines if third-party grounds are required.

*If yes, proceed to step 4*

*If no, proceed to step 15*

4. LOTO Holder obtains TPG tags (orange) from the OAL.
5. OAL indicates (TKPro) the LOTO coordinator's name and time/date the tags were issued. The TPG Tag Tracking index remains in the electronic file as part of the LOTO documentation.

NOTE: The LOTO coordinator shall request TPG tags (orange) from the OAL in the designated operating area. The OAL shall prepare the appropriate number of TPG tags (orange) by writing the associated LOTO and tag number on the tag(s) in ink.

6. LOTO holder performs a prejob briefing with the third-party qualified person.
7. Third-party qualified person secures lockbox (hasp or satellite as needed) behind the coordinator lock with a non-listed (contractor or visitor) lock.
8. Third-party qualified person performs walkdown with the LOTO holder and verifies the absence of energy.

NOTE: Use device properly rated for voltage.

9. Third-party qualified person installs grounds and TPG tags (orange).
10. LOTO holder performs work with all workers.

11. LOTO holder determines if testing is required.

*If yes, proceed to 4.11, Testing*

*If no, proceed to Step 12*

12. LOTO holder determines if work is complete.

*If yes, proceed to 4.8, Work Completed*

*If no, proceed to Step 13*

13. LOTO holder determines if a boundary modification is needed.

*If yes, proceed to Step 14*

*If no, proceed to Step 10*

14. LOTO holder determines if a decreased boundary is needed.

*If yes, proceed to 4.10, Suspend Work*

*If no, proceed to 4.12, Modify Boundary*

15. LOTO holder performs a prejob briefing.

16. LOTO holder performs a walkdown.

17. LOTO holder determines if they will coordinate the LOTO for other workers.

*If yes, proceed to Step 18*

*If no, proceed to Step 10*

18. LOTO holder performs a prejob briefing with all workers involved in servicing and maintenance activity.

19. Non-listed worker secures lockout device behind the coordinator lock with a personal protective lock.

NOTE: Each worker may determine to his or her satisfaction the appropriate isolations are in place and the isolations are secure for the task in which he or she is involved. A copy of the LOTO record shall be provided when requested.

NOTE: If non-listed worker, follow 4.13, Non-Listed/Visitor Lock to obtain lock

*Proceed to Step 10*

## 4.7 Maintenance Release

### [Process Map](#)

Maintenance Release defines the process for when a LOTO coordinator needs local control to operate equipment under LOTO to perform an assigned maintenance activity such as jogging, rotating, or intermittently moving the equipment. Examples include rotating an air heater to replace baskets and rotating intake water screens to replace or repair them.

A maintenance release authorizes a LOTO coordinator holding stated equipment under LOTO to operate the equipment only when the following condition has been met:

A minimum of two isolation devices have been identified and shall be used to isolate and control equipment under the maintenance activity. The isolation devices shall remain under the exclusive control of the LOTO coordinator via independently keyed isolation locks and satellite box.

Only one person may hold a maintenance release on a piece of equipment or component at one time.

1. OAL secures all nonmaintenance release isolation keys in master lockbox with operations lock

NOTE: OAL restricts access to master lockbox ensuring other workers understand the LOTO boundary does not include the devices associated with the maintenance release.

2. OAL places maintenance release isolation keys in satellite lockbox.
3. LOTO coordinator secures coordinator lock to satellite lockbox.
4. OAL activates LOTO isolation record (TKPro).
5. OAL attaches the completed LOTO isolation record to lockboxes. OAL attaches original LOTO isolation record to the master lockbox and a copy of the record to the satellite box, then places a cover page for the LOTO on each lockbox.
6. OAL notifies requestor that LOTO is placed.
7. LOTO coordinator relocates satellite lockbox to work area. The satellite lockbox will remain in the maintenance release work area under the exclusive control of the LOTO coordinator for the duration of the job.
8. LOTO coordinator controls access to maintenance release work area.

NOTE: Use barricade procedure to secure the area and control access.

9. LOTO coordinator conducts prejob briefing with all workers involved in maintenance release activities.

NOTE: LOTO coordinator shall document and communicate process for securing and releasing locks during maintenance release.

A briefing with the immediate work group shall address:

- The person(s) who shall operate the controls. When working around the clock, a person shall be identified for each shift.
- The means of controlling access to the work area.
- The type of communication method that shall be used to notify others in his or her work group to clear the area prior to energizing the equipment.
- Each person's communication method to respond back that he or she has taken a safe position that shall prevent him or her from making or coming in contact with rotating or energized equipment.

10. Workers secure satellite lockbox with personal protective locks.

11. Workers perform maintenance activity with the LOTO coordinator.

12. LOTO coordinator determines if additional maintenance release activity is required.

*If yes, proceed to Step 13*

*If no, proceed to 4.8, Work Completed*

NOTE: If Maintenance Release activity is completed prior to other work on the associated LOTO, the isolation devices shall be placed in the position indicated on the Isolation Record and secured with isolation locks and tags. The keys shall be returned to the Designated Operating Area and placed in the master lockbox by the OAL until all work activity is complete and ready to return to service.

13. Workers remove personal locks from satellite box.

14. LOTO coordinator removes coordinator lock from satellite lockbox and obtains keys for maintenance release.

15. LOTO coordinator removes isolation locks and tags.

16. Worker repositions equipment for maintenance activity.

17. LOTO coordinator isolates, tags, and locks devices per LOTO Isolation Record.

18. LOTO coordinator places the keys to the maintenance isolation locks in satellite lockbox and secures with a coordinator lock.

*Proceed to Step 10.*

## 4.8 Work Completed

### [Process Map](#)

Work Completed defines the process for removing workers from an active LOTO following the completion of all servicing and maintenance activities.

1. Workers remove non-listed personal protective locks.
2. NOTE: If non-listed/visitor lock is used and no longer needed, follow 4.13, Non-Listed/Visitor Lock. LOTO holder determines if coordinating other workers.

*If yes, proceed to Step 3*

*If no, proceed to Step 11*

3. LOTO coordinator verifies all personal protective locks are removed.

NOTE: Excluding qualified person locks.

4. LOTO coordinator determines if third-party grounds are installed.

*If yes, proceed to Step 5*

*If no, proceed to Step 10*

5. Third-party qualified person removes grounds and TPG tags, and returns tags to LOTO coordinator.
6. LOTO coordinator returns TPG tags to the DOA.
7. OAL indicates each TPG tags returned in tool (TKPro).
8. Third-party qualified persons remove lock(s).
9. LOTO coordinator verifies all personal protective locks have been removed.
10. LOTO coordinator verifies all personnel are clear of work area.

NOTE: Collect tools from work area.

11. LOTO holder determines if equipment is safe to return to service.

NOTE: If any equipment is left in a condition not safe to return to service, all LOTO holders shall remain locked to the master lockbox until a LOTO coordinator responsible for the servicing or maintenance activities can maintain continuity by securing a coordinator lock.

NOTE: The LOTO Holder shall assign a coordinator associated with the specific scope of work.

*If yes, proceed to Step 12*

*If no, proceed to Step 13*

12. LOTO holder removes individual lock and/or LOTO coordinator removes coordinator lock from lockbox.

*Proceed to 4.9, Release LOTO*

13. LOTO coordinator installs coordinator lock.

14. LOTO coordinator determines if work should be suspended for testing.

*If yes, proceed to 4.10, Suspend Work (step 2)*

*If no, proceed to 4.6, Perform Work*

#### **4.9 Release LOTO**

##### [Process Map](#)

Release LOTO defines the process for restoring equipment to normal production operations.

1. OAL determines if all LOTO holder locks are removed.

*If yes, proceed to Step 2*

*If no, proceed to 4.14, Lock Emergency Removal*

2. OAL releases LOTO (TKPro).
3. OAL assigns OAAE to release LOTO (TKPro).
4. OAL issues LOTO Release Record (TKPro).
5. OAL removes operating area lock from lockbox and issues keys for items to release.
6. OAL determines if internal grounds require removal.

*If yes, proceed to Step 7*

*If no, proceed to Step 9*

7. OAL requests electrician to remove internal grounds.
8. Qualified person removes internal grounds with OAAE.
9. OAAE removes locks and tags, and repositions and initials each step per LOTO record.

10. OAAE signs *LOTO Released By* section of LOTO Release Record.
11. OAAE verifies all locks returned and stores lockbox.
12. OAL accounts for and disposes of all tags.
13. OAL completes LOTO (TKPro).
14. OAL files original completed LOTO documents and retains per Southern Company Records Retention Schedule.

*End of process*

#### **4.10 Suspend Work**

##### [Process Map](#)

Suspend Work defines the process for removing workers from an Active LOTO to support testing or a reduced boundary.

1. LOTO coordinator determines if third party TPGs are installed.

*If yes, proceed 4.8, Work Completed (Step 6)*

*If no, proceed to Step 2*

2. LOTO coordinator verifies all workers have removed locks.
3. LOTO holder verifies all personnel are clear of work area.

NOTE: Collect tools from work area.

4. LOTO holder removes lock from lockbox.
5. OAL places lockbox(es) in a secure area to prevent access by workers.

NOTE: Place in designated secure area; remove all locks except operation area lock.

6. OAL determines if all locks are removed.

*If yes, proceed to Step 7*

*If no, proceed to 4.14, Lock Emergency Removal*

7. OAL determines if work is suspended for testing.

*If yes, proceed to 4.11, Testing*

*If no, proceed to 4.12, Modify Boundary*

## 4.11 Testing

### [Process Map](#)

Testing defines the process for temporary releasing a portion of a LOTO boundary to perform an operational check, servicing, or repositioning of equipment under an Active LOTO. All workers shall suspend servicing or maintenance activity on any system or equipment when a test is performed. Access to the group master lockbox shall be prevented.

Any LOTO holder may request a test release of the equipment and must be on site during the time of the test. Only one person may request a test release on the same equipment at one time.

NOTE: A test release shall not be required for tests such as meggering, motor evaluation tests, or resistance where LOTO is not released.

1. LOTO holder reviews scope of testing with OAL.
2. OAAE creates the LOTO Test Release Record (TKPro).

NOTE: If TPGs are part of the LOTO record, a review should be performed to determine if removal is required prior to issuing Test Release.

3. OAL reviews isolation boundaries.
4. OAL determines if the LOTO Test Release Record can be approved

*If yes, proceed to Step 5*

*If no, proceed to Step 2*

5. OAL assigns employee to release isolation (TKPro).
6. OAL issues LOTO Test Release Record (TKPro).
7. OAL removes operating area lock from lockbox and issues key(s) for items to release.
8. OAL determines if internal ground removal is required.

*If yes, proceed to Step 9*

*If no, proceed to Step 11*

9. OAL requests qualified person for ground removal.
10. Qualified person removes internal grounds with OAAE.
11. OAAE removes locks, tags, and LOTO devices; repositions devices.

12. OAAE initials each item repositioned on the LOTO Test Release Record.

NOTE: Verify all equipment is in the correct position.

13. OAL receives locks, tags, devices, and LOTO Test Release Record.

14. OAL activates LOTO Test Release Record (TKPro).

15. LOTO holder performs a prejob briefing with OAL and OAAE.

16. LOTO holder performs testing with support from the DOA.

17. LOTO holder determines if work is complete.

*If yes, proceed to 4.8, Work Completed*

*If no, proceed to Step 18*

18. OAL initiates Test Restore Record

*Proceed to 4.3, Develop LOTO Record (step 15)*

#### **4.12 Modify Boundary**

##### [Process Map](#)

Modify Boundary defines the process for making changes to the LOTO boundaries including increasing and decreasing isolation devices.

NOTE: If any device of the active boundary is decreased, work must be suspended prior to releasing any isolation device.

When isolation devices are added to increase the boundary, LOTO holders may remain on the active LOTO. New LOTO holders must review and understand the entire boundary prior to performing service or maintenance activity. When a LOTO boundary is increased, all workers shall review the associated LOTO documents and isolation devices per the new boundary modification prior to working beyond the scope original boundary.

1. LOTO holder identifies the isolation needs and requests boundary change.
2. OAL reviews LOTO request and scope of work with the LOTO holder.
3. OAL determines if the unit can support a boundary modification.

*If yes, proceed to Step 5*

*If no, proceed to Step 4*

4. OAL notifies the requestor that the unit cannot support LOTO request.

*End of process*

5. OAAE defines the isolation boundaries.
6. OAAE determines if the request is an increased boundary change.

*If yes, proceed to Step 8*

*If no, proceed to Step 7*

7. OAAE determines if work has been suspended.

*If yes, proceed to Step 8*

*If no, proceed to 4.10, Suspend Work*

8. OAAE creates a boundary change record (TKPro).
9. OAL reviews isolation boundaries.
10. OAL determines if the boundary change record is approved.

*If yes, proceed to 4.4 Isolate Equipment*

*If no, proceed to Step 5*

NOTE: If boundary decrease, remove Operating Area Lock to access isolation lock key

#### **4.13 Non-listed/Visitor Lock**

##### [Process Map](#)

Non-listed/Visitor Lock defines the process for temporarily issuing a visitor lock to workers who are not on the plant authorized list that require protection under LOTO while performing service or maintenance activity. See Attachment D for an example [Non-listed/Visitor Lock index](#).

At the discretion of plant management, each DOA can issue non-listed/visitor locks to workers.

1. Non-listed Worker/Visitor requests non-listed/visitor lock.
2. LOTO coordinator determines if LOTO Awareness Training has been completed.

*If yes, proceed to Step 4*

*If no, proceed to Step 3*

3. Worker completes LOTO Awareness Training as coordinated by the LOTO coordinator.

4. LOTO coordinator verifies training is completed and communicates to OAL.

NOTE: It is the non-listed worker's (visitor or contractor) responsibility to prove to the LOTO coordinator that LOTO Awareness Training has been completed. Training records, sign in sheets, or verbal confirmation from the worker's employer are examples of acceptable means of verification.

5. OAL issues non-listed/visitor lock and information tag.

NOTE: The Non-Listed Visitor Lock Index can be used to track issued locks.

6. Worker uses lock as required by LOTO coordinator.
7. Worker returns non-listed/visitor lock to DOA.
8. OAL returns lock to secure location.

#### **4.14 Lock Emergency Removal**

##### [Process Map](#)

Lock Emergency Removal defines the process for removing a personal protective lock when the lock owner cannot remove the lock. All reasonable efforts shall be made to contact the lock owner and have the individual return to remove their own personal protective lock. If it is not reasonable for the worker to return or the worker cannot be reached, only the plant manager or designee may remove a lock for the worker.

1. OAL makes all reasonable effort to contact worker.
2. OAL determines if the worker is an authorized worker.

*If yes, proceed to Step 5*

*If no, proceed to Step 3*

3. LOTO coordinator determines if the contractor responsible person available.

*If yes, proceed to Step 4*

*If no, proceed to Step 5*

4. LOTO coordinator requires implementation of contractor lock removal policy.

*End of Process*

5. OAL determines if employee can be contacted to remove lock.

*If yes, proceed to 4.8, Work Completed*

*If no, proceed to Step 6*

6. Employee's supervisor verifies for LOTO holder or LOTO coordinator verifies for non-listed worker is not at facility and takes steps to control the employee's access to facility.
7. Employee's supervisor or LOTO coordinator verifies all personnel clear of work area.
8. Employee's supervisor or LOTO coordinator verifies all tools and equipment are clear and equipment is configured to return to service.
9. OAL issues Lock Emergency Removal Record (TKPro).
10. OAL determines if the LOTO holder is an authorized worker.

*If yes, proceed to Step 11*

*If no, proceed to Step 16*

11. Employee's Supervisor or LOTO Coordinator completes Emergency Lock Removal Record with Plant Manager or designee and obtains spare key.
  12. Employee's supervisor or LOTO coordinator removes lock and provides it to plant manager or designee.
  13. Plant manager or designee notifies LOTO holder of actions and returns lock.
- NOTE: Following discussion, plant manager can remove restriction to facility access.
14. LOTO Holder signs and records *Date* and *Time* fields of the LOTO Lock Emergency Removal Record.
  15. OAL files LOTO Lock Emergency Removal Record with original LOTO documents and retains per Southern Company Records Retention Schedule.
  16. LOTO Coordinator cuts lock.

Proceed to Step 14.

*End of Process*

## **5.0 TRAINING**

All Southern Company Generation employees and other personnel working under the requirements of this procedure shall be trained in the use of this procedure.

## 5.1 LOTO Awareness Training

Each employee whose work operations are or may be in an area where energy control procedures may be used, shall be instructed during site orientation or annual compliance training (as applicable) on the LOTO procedure; instruction shall include training about the prohibition related to attempts to restart or re-energize equipment that are locked out or tagged out. Each affected employee shall be instructed in the purpose and use of the energy control procedure. Any worker not on the plant's authorized list shall complete LOTO Awareness Training prior to working on equipment as a non-listed worker.

## 5.2 Authorized Worker Training

Initial training shall be classroom training conducted by a qualified instructor as deemed by management.

- At minimum, employees shall be trained annually to ensure the purpose and function of the energy control program are understood and the knowledge and skills necessary for the safe application, usage, and removal of the energy controls are required.
- Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- When tagout systems are used, employees shall also be trained in the following limitations of tags:
  - Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint, provided by a lock, on those devices.
  - When a tag is attached to an energy isolating means, it shall not be removed without authorization of the authorized person responsible for it; and it shall never be bypassed, ignored, or otherwise defeated.
  - Tags shall be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area.
  - Tags and their means of attachment shall be made of materials that withstand the environmental conditions encountered in the workplace.
  - Tags may evoke a false sense of security, so their meaning needs to be understood as part of the overall energy control program.
  - Tags shall be securely attached to energy isolating devices so they cannot be inadvertently or accidentally detached during use.

Site-specific training shall be conducted at each facility, and shall include any local requirements of the plant or designated operating areas and identify employees having specific roles and responsibilities at that facility. Each facility shall have a unique SHIPS number for site-specific training.

Refresher training shall be classroom training, and include a review of both initial and site-specific training. Refresher training shall be conducted annually or when:

- Periodic inspections reveal, or when the employer has reason to believe, there are deviations from, or inadequacies in, the employee's knowledge or use of the energy control procedures.

The retraining shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

NOTE: Approved employee training (Initial/Site Specific/Refresher) shall be documented in SHIPS prior to requesting access on any authorized list in Cool Compliance. Completion of authorized worker training shall be acceptable training for workers that are required to work at other facilities as a non-listed worker.

### **5.3 Department Training and Proficiency Requirements**

In addition to the LOTO training outlined in this procedure, each employee's supervisor shall ensure department training has been completed, and evaluate each employee, specific to their position, on the following:

- Understanding of general plant knowledge, such as plant orientation, system design, and system operation.
- Proficiency to safely perform assigned job responsibilities.
- Understanding of limitations of the LOTO program.

NOTE: Required department training is defined by plant management. Additional training may be required for specific LOTO roles, such as LOTO coordinators.

### **5.4 Authorized List**

Cool Compliance governs permissions for all roles in the LOTO process. Inclusion on any facility authorized list shall be approved or denied in Cool Compliance by the employee's supervisor and the plant authorized list administrator. The supervisor's approval in Cool Compliance certifies the employee has met the requirements of 5.3, Department Training and Proficiency Requirements and is proficient to hold all selected roles. The plant authorized list administrator's approval in Cool Compliance grants final permission and inclusion on the plant's authorized list.

- Authorized list permission will expire at 1 year + 60 days after the most recent training completion date, or as revoked by management.
- TKPro automatically integrates with Cool Compliance to govern permissions in the software according to the authorized list.
- For permissions not integrated with TKPro, the employee's supervisor shall collect lockout devices (locks, keys, etc.) when permissions have expired in Cool Compliance.

NOTE: With permission of the DOA, employees who have not been approved on the facility authorized list may work under the guidance of a coordinator only after completion of annual LOTO Awareness training and issuance of a non-listed/visitor lock (brown).

## **6.0 PROCEDURE REVIEW**

Southern Company Generation management shall ensure a review of the Southern Company Generation LOTO Procedure is conducted at least annually to ensure the procedure and the provisions of 29 CFR 1910.269(d) and 29 CFR 1910.147 are being followed.

## 6.1 LOTO Periodic Inspection

A periodic inspection of LOTO records will be conducted at least annually at each facility to ensure the procedure is being followed. Each facility, having similar equipment by system and the same or similar types of control measures, shall group LOTO records for the purpose of inspection. An authorized employee shall interview a representative number of available employees implementing and/or holding an active LOTO within each system.

NOTE: If an active LOTO is not available, an authorized employee shall conduct at minimum a periodic inspection for each system using completed LOTO records annually.

The [LOTO Periodic Inspection Record](#) shall be completed by an authorized employee not utilizing the LOTO record being inspected. The inspection shall identify and require correction of any deviations or inadequacies.

NOTE: If significant deviations or inadequacies are discovered during the periodic inspection, an additional inspection of a LOTO record shall be performed within the same system.

The [LOTO Periodic Inspection Record](#) shall certify:

- The equipment on which the energy control was used.
- The date of the inspection.
- The employees included in the inspection.
- The person performing the inspection.

A copy of the LOTO Periodic Inspection Record shall be retained per the record retention schedule. The Facility Management, LOTO Coordinator and Safety & Health manager shall develop corrective actions to address any procedure inadequacies. When the inspection reveals any inadequacies in employee knowledge, plant management shall conduct a more detailed review to address responsibilities. Employees found to have significant inadequacies shall be removed from the facility authorized list and retrained.

## 6.2 Facility Active LOTO Review

Each facility shall inspect all active LOTO records annually from the date they became active.

Active LOTO records shall be inspected annually by an employee from the designated operating area to ensure the following:

- The status of the equipment has not changed.
- The LOTO record is still valid.
- The locks and tags are intact and legible.
- Following each review, the employee from the designated operating area indicates the review on the LOTO record, identifying any actions required, noted, and/or performed.

## **7.0 KEY CONTACT**

For questions regarding the content and implementation of this document, contact your safety and health representative.

## **8.0 QUALITY RECORDS**

The following records are official records and shall be retained in accordance with the Southern Company Records Retention Schedule:






- LOTO Isolation Record
- LOTO Maintenance Release Record
- LOTO Release Record
- LOTO Test Release Record
- LOTO Test Restore Record
- LOTO Boundary Increase Record
- LOTO Boundary Decrease Record
- LOTO Simple Record
- LOTO Lock Emergency Removal Record
- LOTO Annual Procedure Review Record
- Coordinator Continuity Transfer Record



## **9.0 ATTACHMENTS**

- Attachment A, Example Lockout Devices
- Attachment B, Example LOTO Tag
- Attachment C, Example Temporary LOTO Records
- Attachment D, Example Non-listed/Visitor Lock Index

### Attachment A, Example Lockout Devices

**lockout device** – Device that utilizes a positive means such as a lock and key, to hold an energy isolating device in the safe position and prevent the energizing of equipment. Southern Company Generation approved lockout devices are as follows:

<b>Isolation locks</b>		<p>Red locks are used to secure energy isolation devices.</p> <ul style="list-style-type: none"> <li>• Keyed in groups (lock sets)</li> <li>• Used to secure/isolate equipment</li> <li>• Always secured with an attached tagout device.</li> </ul>
<b>Operating area locks</b>		<p>Orange locks are used for operating area continuity indicating equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices have not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.</p> <ul style="list-style-type: none"> <li>• “Operations Lock”</li> <li>• Keyed in groups by Designated Operating Area (DOA)</li> <li>• All Operating Area Leaders are issued keys</li> <li>• Indicates the position of isolation devices has not been altered equipment hasn't changed</li> </ul>
<b>Individual locks</b>		<p>Blue locks are assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose.</p> <ul style="list-style-type: none"> <li>• Keyed in groups (lock sets)</li> <li>• Each worker has 5 locks and 1 key</li> <li>• Emergency key held by Plant Manager or Designee</li> <li>• Can lock on any LOTO with DOA permission</li> <li>• Shall display worker name and contact number</li> </ul>
<b>Coordinator locks</b>		<p>Green locks are used by departments to coordinate multiple work crews, ensure continuity and integrity of active LOTO and for the protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.</p> <ul style="list-style-type: none"> <li>• Keyed in groups by department</li> <li>• Used to coordinate work crews</li> <li>• Requires an attached LOTO information tag and: <ol style="list-style-type: none"> <li>1. Hasp on master lockboxes (red)</li> <li>or</li> <li>2. First lock on a Satellite lockbox (yellow)</li> </ol> </li> </ul>
<b>Satellite lock</b>		<p>Yellow locks are used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox.</p> <ul style="list-style-type: none"> <li>• Placed on master lockbox</li> <li>• Shows satellite lockbox in use</li> <li>• Keyed individually (to corresponding yellow box)</li> <li>• Requires an attached LOTO information tag</li> </ul>

<b>Non-listed/visitor lock</b>		<p>Brown locks are used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Non-listed/visitor locks are issued for temporary use at the discretion of plant management. Requires an attached LOTO information tag.</p> <ul style="list-style-type: none"><li>• Issued by DOA (1 lock and 1 key)</li><li>• Requires LOTO Awareness Training annually</li><li>• Can only lock behind a coordinator (Green Lock)</li><li>• Requires an attached LOTO information tag</li></ul>
<b>Contractor lock</b>		<p>Contractor locks are provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker.</p> <p>When securing to Southern Company lockout devices, contractor locks shall adhere to the following:</p> <ul style="list-style-type: none"><li>• Contain worker's name, contact number, and company.</li><li>• Not be manufactured by American Lock</li><li>• Shall be silver, gray, or black in color.</li></ul>

Attachment B, Example LOTO Tag

Example of Tagout devices



Example of TPG Tags


**SOUTHERN COMPANY GENERATION**

**TEMPORARY PROTECTIVE  
GROUND TAG**

**LOTO number** \_\_\_\_\_

**TPG tag number** \_\_\_\_\_

5-6794 11/16

 Southern Company

**CAUTION**

Do **NOT** Remove This Grounding Device  
Unless Authorized By The LOTO Holder

Example of LOTO Information Tag

<div><p style="text-align: center;"><b>LOTO INFORMATION TAG</b></p><p><b><u>LOTO ROLE:</u></b>    <input type="checkbox"/> <i>LOTO COORDINATOR (GREEN LOCK)</i>                                  <input type="checkbox"/> <i>3rd Party Grounds Installed (TPG's)</i>                                  <input type="checkbox"/> <i>SATELLITE BOX (YELLOW LOCK)</i>                                  <input type="checkbox"/> <i>NON-LISTED/VISITOR</i>                                  <input type="checkbox"/> <i>Alternate Accountability Responsible Person</i></p><p><b><u>NAME:</u></b></p><p><b><u>CONTACT #:</u></b></p><p><b><u>DEPARTMENT/LOCATION:</u></b></p><p>5-8795 Rev 1/2017</p></div>
--


Example of Operational Control Tag



Attachment C, Example Temporary LOTO Records

**Southern Company Generation**

**LOTO REQUEST Record**




Request #:	Equipment:	Equipment #:	
<b>LOTO Information</b>			
Plant:	Requested By:	Designated Operating Area:	Date/Time Needed:
Reason for LOTO:			
Special Instructions:			
<b>Comments</b>			
Approved By: (Print)	Signature:	Date:	Time:

Page 1 of 1

**Southern Company Generation**

**LOTO ISOLATION Record**




LOTO #:	Equipment:	Equipment #:	
<b>LOTO Information</b>			
Plant:	Requested By:	Date/Time Needed:	
Reason for LOTO:			
Special Instructions:			
<b>Issued By:</b>			
		Lock Box #:	Single Locks:
Executed By:	Signature	Verified By:	Signature

Boundary					Operating Area					
Tag #	Device	Device #	Position	Tag Type	Locking Device	Executed By	Test Method	Test Perf By	Verifier	Notes

Page 1 of 3



Southern Company Generation		 Southern Company	
LOTO Coordinator Continuity Transfer Record			
LOTO #:	Equipment:	Equipment #:	
<b>LOTO Information</b>			
Plant:	Requested By:	Date/Time Needed:	
Reason for LOTO:			
Special Instructions:			
Original LOTO Coordinator:			
Transfer Records			
LOTO Coordinator	Signature	Date	Time
Comments			

Page 1 of 1

 Southern Company[illegible]