American Railway Engineering and Maintenance of Way Association
Letter Ballot

1. **Committee and Subcommittee:**
   Committee 27, Subcommittee 5

2. **Letter Ballot Number:** 27-22-6

3. **Assignment:** 2.8

4. **Ballot Item** Approval of 2.8 Lockout Tagout (LOTO) During Maintenance of Roadway Machines

5. **Rationale:** Update

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SECTION 2.8 LOCKOUT/TAGOUT (LOTO) DURING MAINTENANCE OF ROADWAY MACHINES

Reviewed and approved 07-20-22

2.8.1 GENERAL (2012)

Lockout/Tagout (energy isolating) devices shall be used to ensure that the machine or equipment is shut down and isolated from all potential hazardous energy sources and locked out before employees perform any servicing or maintenance where the "unexpected" activation or start-up of the machine or equipment or release of stored energy may cause injury.

Reference OSHA https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.147 for further documentation

2.8.2 DEFINITIONS (2012)

a. *Affected employee.* An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under Lockout/Tagout, or whose job requires him/her to work in an area in which servicing is being performed.

b. *Authorized employee.* A person trained in performing Lockout/Tagout on machines or equipment to perform servicing or maintenance on that machine or equipment.

c. *Capable of being locked out.* An energy isolating device is 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.

d. *Energized.* Connected to an energy source or containing residual or stored energy.

e. *Energy isolating device.* A mechanical device that physically prevents the transmission or release of energy. These include disconnect switches, ignition switches, circuit breakers, valves, and block outs. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

f. *Energy source.* Any source of electrical, mechanical, chemical, hydraulic (pressurized liquid), pneumatic (pressurized gas or air), gravity, thermal (heat and cold), and radiation energy; and others such as gas, steam, and water.

g. *Lockout.* The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

h. *Lockout device.* A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

i. *Normal procedure operations.* The utilization of a machine or equipment to perform its intended production function.

j. *Servicing and/or maintenance.* Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These

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activities include lubricating, cleaning or un-jamming of machines or equipment and adjusting or tool changes, where the employee may be exposed to the unexpected activation or startup of the equipment or release of hazardous energy.

k. *Setting up.* Any work performed to make a machine or equipment to perform its normal production operation.

l. *Tagout.* The 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 may not be operated until the tagout device is removed by the Authorized Employee.

m. *Tagout device.* A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

2.8.3 REQUIREMENTS (2012)

a. Employer/Employee requirements:

(1) The employer should establish a program consisting of energy control procedures, employee training, periodic inspections, and to determine if the Lockout/Tagout policy applies for the machine to be worked on.

(2) All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout/tagout. The authorized employees are required to perform the lockout/tagout in accordance with established procedures. All employees, upon observing a machine or piece of equipment that is locked out or tagged out for the purpose of servicing or maintenance should not attempt to start, energize, or use that machine or equipment.

b. Manufacturer's requirements:

(1) All machines will be equipped with the means to lockout/tagout energy isolating devices.

(2) Manufacturers will be responsible for pointing out energy sources, energy isolating devices, and any other locking mechanisms on the equipment and provide sequence for putting these in a non-energy state. This will be used by the individual railroads in establishing their own lockout/tagout procedures.

2.8.4 PROCEDURES (2012)

The following simple Lockout/Tagout procedure is provided as a guideline for procedure development.

a. Lockout/Tagout Sequence

(1) Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out and tagged out to perform servicing or maintenance.

(2) Identify the type and magnitude of energy the machine or equipment utilizes, should understand the hazards of the energy, and should know the methods to control the energy.

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(3) Properly secure all working components by either locking them in their stored/travel positions, or by lowering to the ground, repositioning, or blocking the component so it will not move during the planned service or maintenance procedure.

(4) If the machine or equipment is operating shut it down by the normal stopping procedure.

(5) Position the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s). In multiple units consists, deactivate, or remove connections to isolate the unit. Apply appropriate working mechanism locks and blocks plus secure machine so that movement is **NOT** possible (i.e., parking brake, wheel chocks, etc.).

(6) Lockout/Tagout the energy isolating device(s) with assigned individual lock(s)/tag(s).

(7) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air systems/reservoirs, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

(8) Ensure that the equipment is disconnected from the energy source(s) by first checking that personnel are not exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. Verify that all locks, hooks, pins, etc., are properly in place and energy sources (i.e., Hyd., Air, Electrical that control workheads, rail clamps, etc.) are resting on locks, blocked or grounded. **CAUTION!** Return operating control(s) to the neutral or "OFF" position after verifying the isolation of the equipment.

(9) The machine or equipment is now locked out and tagged out.

NOTE: Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered if they are routine, repetitive, do not expose the employee to the
unexpected activation or startup of the equipment or release of hazardous energy, and integral to the use of the equipment for normal production.

b. Restoring Equipment to Service

When the service or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the Authorized Personnel should take the following steps:

(1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items (i.e., tools, parts, etc.) have been removed and that the machine or equipment components are operationally intact, including safety devices and machinery guards.

(2) Check the work area to ensure that all affected employees have been safely positioned or removed from the area. Notify of pending removal of isolating devices.

(3) Verify that the controls are in neutral or in the "OFF" position.

(4) Remove the lockout device(s) and re-energize the machine or equipment. Note: The removal of some forms of blocking may require reactivation of the machine before safe removal.

(5) Verify through tests that the machine or equipment functions properly.

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(6) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for service.

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