

**Worker's Protection Assurance
and Three-Way Communication**

Jan 2019

A photograph of a male worker in a yellow safety helmet with the Ameren logo, safety glasses, and a high-visibility yellow vest. He is looking off to the side with a focused expression. In the background, there are utility poles and power lines, and another worker is visible on a structure.

Worker's Protection Assurance (WPA)

Purpose: Safety of personnel

- WPA is an operating authority's assurance to a qualified worker that a given piece of equipment will be held in a required status in order for that person to safely perform their duties on that specific equipment.
- **A promise to our qualified workers that our equipment won't jeopardize your safety.**

Operating Authority

Jurisdictional and Functional Authority groups are responsible for the proper direction, coordination, and operation of system equipment.

Jurisdictional Authority is in charge of directing and coordinating the operation of system equipment. They have complete authority of switching, voltage control, equipment loading, and any other activities necessary for proper operation.

- The DCO has Jurisdictional Authority for all three-phase overhead backbone circuits, all UG circuits, and all two-phase and single-phase **that tie** with another circuit.
- If a Truck Hold-Off is allowed, Jurisdictional Authority belongs to the crew in the field (also known as Truck Jurisdiction).

Operating Authority

Functional Authority specifically directs another qualified person to perform switching operations as authorized by the Jurisdictional Authority.

- Only the Functional Authority can issue WPA and can order to place or remove tags.
- In most cases, the DSOS is both Jurisdictional and Functional Authority.
- In the case of Truck Jurisdiction, the crew in the field assumes Jurisdictional and Functional Authority.

Responsibilities



Operating Authority (Jurisdictional/Functional) Responsibilities:

- To maintain the required equipment status.
- To notify, by tagging or oral communications, that WPA has been issued.
- To issue WPA only on equipment where that person exercises authority.

Qualified Worker or Supervisor Responsibilities:

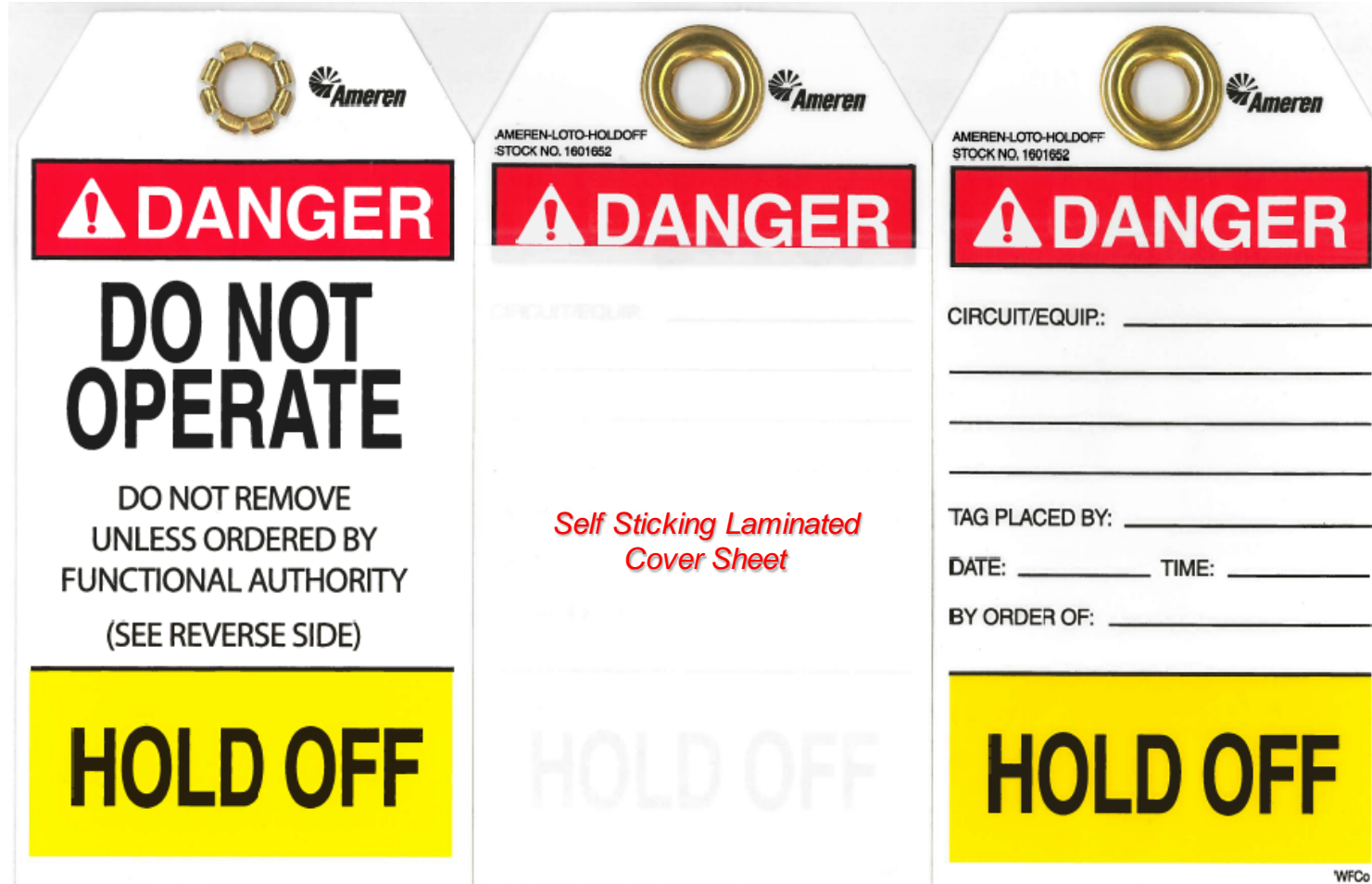
- To maintain strict observance of WPA procedures and rules.
- To keep the Operating Authority informed of all pertinent equipment, personnel, and protection information.

Note: *WPA does not take the place of the employees own Safe Work Practice or relieve them of the responsibility of making prescribed tests to determine if safe working conditions exist.*



Hold-Off Tags

Distribution Control Office (DCO) Hold Off Tag



Definition

- A Hold-Off (symbolized by a Hold-Off Tag) is an order of the Functional Authority that the position of an isolating device, which it is intended to cover, must be held open. The position of the device must not be changed unless ordered by the Functional Authority, and then only if the Hold-Off tag is first ordered to be removed.

Use of Hold-Off

- When a Hold-Off tag is placed on an isolating device, the Operating Authority is said to have a Hold-Off on that device.
- The presence of a Hold-Off tag does not assure that the equipment is completely isolated.
- The Hold Off tag only indicates that the equipment in question has been opened and will not be operated.

Establish Hold-Off

The Operating Authority can state that equipment is held off ONLY after equipment is:

- Electrically opened.
- Has no electrical connection that can pass current or voltage between the equipment's terminals.
- All isolating or control points are tagged with Hold-Off tags.

The Hold-Off tag must physically be placed in close proximity to the isolating or control point to which the Hold-Off is issued.

Note: Use Hold-Offs when issuing a Clearance, Restraint, or Out-of-Service

Note: On equipment that is capable of establishing a visual open, the visual open must be fully opened and visually verified before placing a Hold-Off.

Hold-Off

- The Hold-Off tag is the Distribution Control Office's (DCO) tag. They are the Functional Authority.
- Only the DCO can order to place or remove Hold-Off tags.

Truck Hold-Off Tag

Truck Hold Off Tag is being updated



Truck Hold-Off

- A Truck Hold-Off can be used on in-service portions of the Distribution System (15kV and below).
- Once a crew is assigned an outage order number, they assume Jurisdictional & Functional Authority by placing a Truck Hold-Off.
- The Truck Hold-Off Tag must be physically placed in close proximity to the isolating point to which Truck Hold-Off is issued.

The Truck Hold-Off must have the following information:

- Outage order number to which the crew is assigned
- Crew number
- Name and phone number of the employee responsible for clearance
- Date and time the Truck Hold-Off tag was installed

Only use the Truck Hold-Off for the following isolating points:

- For overhead portions of single-phase or multi-phase radial taps that have only a single isolation point (i.e. taps that do not tie between feeders).
 - *For example: lifting jumpers, opening fuses, opening switches.*
- Ameren MO only: Underground portions of single or multi-phase radial taps having one isolation point. (i.e. taps that do not tie between feeders).
 - *For example: lifting jumpers, opening fuses, opening switches, pulling elbows*
- Multi-phase isolation points must have all phases isolated.
- Overhead transformer or transformer bank.
- Fused capacitor bank does not require an outage order.

Truck Hold-Off

- DO NOT use the Truck Hold-Off in substations.
- Only a Clearance can be issued under a Truck Hold-Off.
- No other WPA can be issued on a section of line or piece of equipment while the Truck Hold-Off is in effect.
- Out-of-Service and Restraint require a Hold-Off tag from DCO.

The person holding Truck Hold-Off must:

- Remain in the general area of job.
- Release Truck Hold-Off at end of workday.

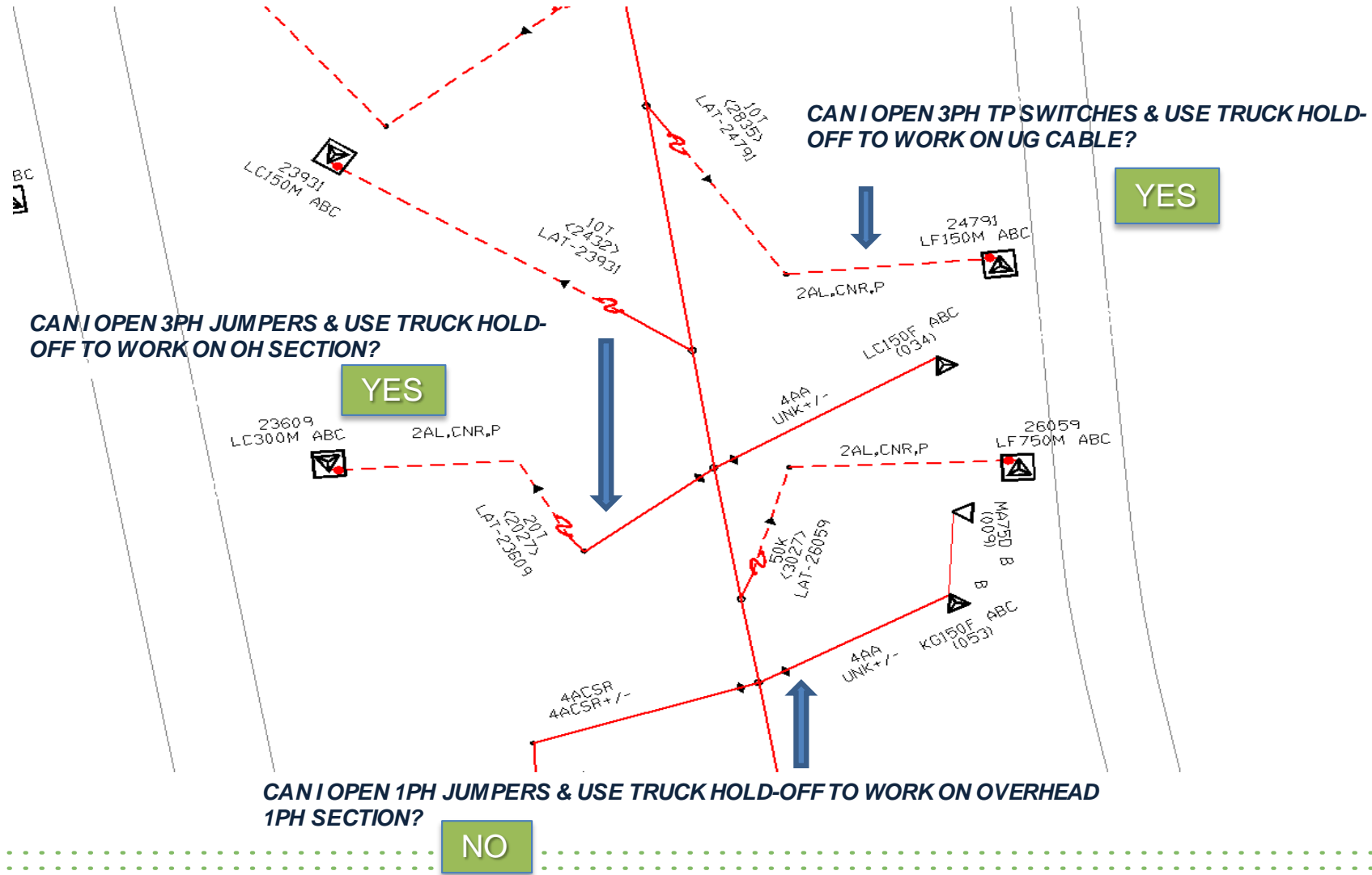
On Underground, the person holding the Truck Hold-Off must verify that the cable does not tie to another source by checking the last section of cable.

Truck Hold-Off

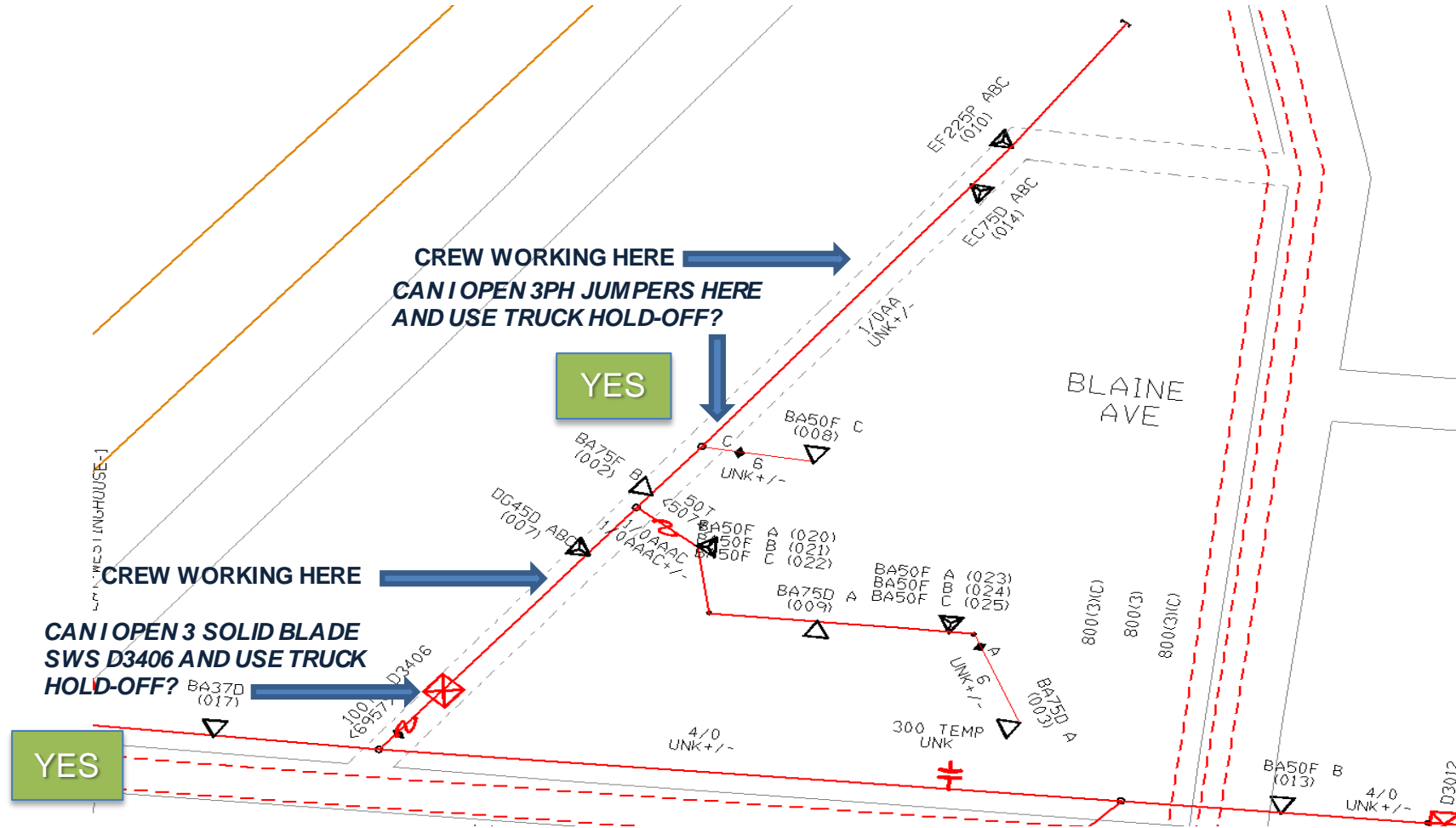


- The Truck Hold-Off tag is your tag. You are the Operating Authority (Jurisdictional and Functional).
- Only you can place or remove the tag.
- You must be assigned to an OAS or OMI outage order.
- Crews working independently on the same equipment must hang their own Truck Hold-Off tags.


Truck Hold-Off



Truck Hold-Off



Racking Hold-Off Tag

 	  FORM 5502 (2/02) STOCK NO. 37-22-154
	
<p>DO NOT RACK CIRCUIT BREAKER ONTO THE BUS</p> <p>DO NOT REMOVE UNLESS ORDERED BY FUNCTIONAL AUTHORITY (SEE REVERSE SIDE)</p>	<p>CIRCUIT/EQUIP: _____ _____ _____ _____</p> <p>TAG PLACED BY: _____</p> <p>DATE: _____ TIME: _____</p> <p>BY ORDER OF: _____</p>
<p>RACKING HOLD OFF</p>	<p>RACKING HOLD OFF</p>

Racking Hold-Off Tag

- The Racking Hold-Off tag is used specifically in substation applications for circuit breakers that can be racked off the bus.
- Hold-Off Tag states, “DO NOT OPERATE.”
- Racking Hold-Off tag states, “DO NOT RACK THE CIRCUIT BREAKER ONTO THE BUS.”
- By order of the DSO, the Racking Hold-Off tag must be placed on a circuit breaker control switch with the circuit breaker racked off the bus or in the test position. The circuit breaker can be closed and opened for testing/maintenance, as long as the breaker is not racked onto the bus. The Hold-Off isolation issued is the isolation created by having the breaker racked off the bus.
- If DSOS wants assurance that circuit breakers are not opened/closed, then a Hold-Off tag must be used on the racked off breaker

Fives Types of WPA



1. CLEARANCE
2. OUT OF SERVICE
3. RESTRAINT
4. LOCAL CONTROL
5. HAZARD

Clearance

Clearance:

- Ensures that the equipment covered is isolated from all known electrical energy sources.
- Is issued to a qualified worker or supervisor
- Covers any number of persons working under his/her direction.
- Hold-Off tags are placed and this isolation is maintained while the Clearance is in effect.
- Test voltage may not be applied under a Clearance, with only the following exception:

Note: *The use of a Phase ID Buzzer, using 9VDC battery or less, is allowed under a Clearance or Out-of-Service for the purpose of identifying phases on UG cables. Prior to use of the Phase ID Buzzer, a qualified worker or supervisor must verify that no other crews or personnel are working on or near any cables that are to be Phase ID.*

- The person holding the Clearance must remain in the general area of the job.
- The Clearance must be released at the end of the workday.
- Multiple Clearances or Out-of-Services can be issued on the same equipment, but no other types of WPA may be issued.

Out of Service

- The Out-of-Service ensures that the equipment covered remains isolated from all known energy sources.
- Out-of-Service is issued to an Ameren Supervisor with the intent that the equipment remains in the Out-of-Service status for an extended period of time.
- The person holding the Out-of-Service does not need to remain in general area of the job.
- The Out-of-Service does not need to be released at the end of the workday.
- Persons working under an Out-of-Service must be under the supervision of the person who owns the Out-of-Service.
- Test voltage may not be applied under an Out-of-Service. See the note exception on the previous slide.
- Multiple Clearances or Out-of-Services can be issued on the same equipment, but no other types of WPA may be issued.

Restraint

- The Restraint ensures that the equipment covered remains isolated from all known energy sources.
- No other WPA can be issued while the Restraint is in effect.
- Only one Restraint may be issued on any piece of equipment at a time.

- Test voltage may be applied under a Restraint.

***Note:** As long as no other WPA is issued, a Restraint is not needed for a Shorts and Grounds Test. This test can be done under orders from the DCO, who has Jurisdictional Authority.*

- The person holding the Restraint must remain in the general area of the job.
- The Restraint must be released at the end of the workday.

Grounds can be installed/removed under a Restraint.

Local Control

- With the Local Control, a person can operate or direct the operation of a section of circuit or piece of equipment.
- Local Control ensures that no other operations are performed on that same section of line or piece of equipment.
- Local Control allows the energizing and de-energizing of a normal source.
- The person holding the Local Control must remain in the general area of the job.
- The Local Control must be released at the end of the workday.
- No other WPA may be issued while the Local Control is in effect.

DO NOT install Grounds under the Local Control.

Note: *Ameren MO only: Local Control is permitted for testing UG cable with Mark V, Phase-mate, or Underground Cable Tester (UCT).*

Note: *Hold-Off tags cannot be placed/removed under a Local Control unless ordered by the Functional Authority (DCO).*

Hazard

- The Hazard ensures that a circuit protective device will not be reclosed after it automatically opens.
- The Hazard is not a guarantee that a circuit will be de-energized upon contact. Fault currents must be sufficient to cause operation of a protective device for that circuit.
- In the field, a Hazard tag must be physically placed on the reclosing disable switch/button of the protective device that will be placed on Hazard.
- The person holding the Hazard must remain in the general area of the job.
- The Hazard must be released at the end of the workday.
- No other WPA can be issued while the Hazard is in effect.

Hazard Tag

The Hazard tag must be placed on the reclosing device before the Hazard is issued.



WPA Quick Reference Guide



TYPE OF WPA	VOLTAGE APPLIED	TIME LIMITATION	LOCATION LIMITATION	TYPE OF TAGS	OTHER WPA ALLOWED
TRUCK CLEARANCE	NO KNOWN VOLTAGE	DURATION OF THE JOB	JOB SITE	TRUCK HOLD OFF	TRUCK CLEARANCE
CLEARANCE	NO KNOWN VOLTAGE	DURATION OF THE JOB	JOB SITE	HOLD OFF	CLEARANCE OUT OF SERVICE
OUT OF SERVICE	NO KNOWN VOLTAGE	NONE	NONE	HOLD OFF	CLEARANCE OUT OF SERVICE
LOCAL CONTROL	SOURCE VOLTAGE*	DURATION OF THE JOB	JOB SITE	N/A	NONE
RESTRAINT	TEST VOLTAGE**	DURATION OF THE JOB	JOB SITE	HOLD OFF	NONE
HAZARD	SOURCE VOLTAGE	DURATION OF THE JOB	JOB SITE	HAZARD	HAZARD

*Ameren MO only: Local Control is permitted for testing UG cable with Mark V, Phase-mate, or Underground Cable Tester (UCT).

**As long as no other WPA is issued, a Restraint is not needed for a Shorts and Grounds Test on UG cable. This test can be done under orders from the DCO, who has Jurisdictional Authority.



Three-Way Communication
Purpose: Safety of personnel

Three-Way Communication

- Three-Way Communication is critical for safe switching and successful WPA.
- Due to its importance, we shall always use Three-Way Communication.

Use Three-Way Communication to issue clear, concise orders:

1. State the order.
 - *“Open and Hold-Off 3 switches D12127.”*
2. Require the recipient of the order to repeat back the information correctly.
 - *“At this time, I understand I can open & Hold-Off 3 switches D12127.”*
3. Acknowledge the response as correct.
 - *“That is correct.”*

If necessary, repeat the original statement to resolve any misunderstanding.

Switchman Record

The employee receiving the orders must:

- Record operating orders in their *Switching Order Book*,
- Read the orders back, and
- Receive acknowledgement to verify correctness before performing them.

Note: *In Ameren Missouri at the discretion of the DCO, the switchman may use a Faxed Switching Order to read back, in lieu of Switching Order Book, but verbal three-way communication must still be used before any switching.*

Issuing/Obtaining WPA

WPA issued by a Functional Authority must be clear, concise, and completed by including:

- The type of WPA.
- The circuit along with the equipment covered by the WPA.
- The time that the WPA is issued.

Use Three-Way Communication to issue WPA:

1. State the order:
 - *“I can give you a Clearance on the WAT-80 between CO123 and CO456 at 19:00.”*
2. The Recipient must repeat:
 - *“I understand that you are giving me a Clearance on the WAT-80 between CO123 and CO456 at 19:00.”*
3. Acknowledge the response as correct:
 - *“That is correct.”*

If necessary, repeat the original statement to resolve any misunderstanding.

Use Three-Way Communication when DSOS issues WPA to a switchman and when switchman turns WPA back to DSOS



Thank You

A large orange target graphic consisting of three concentric semi-circular arcs and a central solid orange circle, positioned behind the text.

Focused on Safety