

**Summary Report for Individual Task
052-204-1123
Secure Conductor to Insulator (De-energized)
Status: Approved**

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

Condition: As a Power Line Distribution Specialist in a tactical or nontactical environment when a conductor needs to be secured to an insulator after the lines have been properly sagged (de-energized), you are given a conductor, appropriately sized clips/ties for the conductors, applicable climbing and rigging equipment, safety standing operating procedures (SOPs), the Lineman's and Cableman's Handbook (LCH), hot-line tools, a voltage detector, grounding equipment, the applicable personal protective equipment (PPE), and a lockout and tagout kit. This task should not be trained in MOPP.

Standard: Secure the conductor to the insulator (de-energized). Ensure that phases are level and conductors are not stressed.

Special Condition: None

Safety Level: Low

MOPP: Never

Task Statements

Cue: None

DANGER

1. THIS TASK SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL KNOWLEDGEABLE IN THE INSTALLATION AND MAINTENANCE OF ELECTRICAL DISTRIBUTION SYSTEMS AND POWER EQUIPMENT, AND THE ASSOCIATED HAZARDS. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.
2. ENSURE THAT THE CIRCUIT IS COMPLETELY DE-ENERGIZED AND CORRECTLY GROUNDED BEFORE PERFORMING ANY WORK. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.
3. A VOLTAGE DETECTOR SHOULD BE USED TO ENSURE THAT THE CABLES ARE NOT ENERGIZED. MATERIAL (SUCH AS A LEAD SHEATH THAT ACTS AS A SHIELD) MUST NOT BE BETWEEN THE TESTER AND THE CONDUCTORS OF THE CIRCUIT BEING TESTED. FAILURE TO TEST THE CABLES MAY CAUSE PERMANENT INJURY OR DEATH.
4. REMOVE RINGS, NECKLACES, OTHER JEWELRY, AND LOOSE CLOTHING. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

WARNING
None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Perform switching, blocking and tagging procedures.
2. Ascend the pole to the required height if necessary.
3. Test phases to ensure that there is no voltage present.
4. Install personal protective grounds.
5. Determine the best tie method for each location.

- a. Use preformed tie wires if available.

Note: Preformed tie wires are not one size fits all. They must match the application and the conductor size.

- b. Use armor rod ties when applicable.

Note: Armor rod ties are used to protect conductors from damage due to vibration and are placed on the conductors the same way as preformed tie wires.

Never cross tie wires.

- c. Use a top tie when the conductor is in the top groove of the insulator.

(1) Center the tie wire on the top of the insulator, pulling one end toward you and one end away from you. (Both sides of the wire should be of equal length and positioned under the conductor.) Wrap both ends halfway around the insulator.

(2) Tighten both wire ties against the insulator; and wrap two close wraps, three spaced wraps, and two more close wraps around the conductor.

- (3) Bend the ends back, and cut off excess tie wire.

- d. Use a side tie when the conductor pulls against the side of the insulator.

(1) Center the tie wire on the back side of the insulator, pulling the ends toward you, forming a U. (Both sides of the wire should be equal in length and positioned under the conductor.)

(2) Tighten the wire ties against the insulator; and wrap two close wraps, three spaced wraps, and two more close wraps around the conductor.

- (3) Bend the ends back, and cut off excess tie wire.

6. Inspect the ties to ensure that conductors remain secure.
7. Ensure that the items listed in the conditions are properly cleaned and stored.

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Provide the Soldier with the items listed in the conditions. Give the Soldier a safety briefing before starting the test, and ensure that safety precautions are followed. Prepare the testing area and equipment in advance to ensure that task standards can be met.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Performed switching, blocking and tagging procedures.			
2. Ascended the pole to the required height if necessary.			
3. Tested phases to ensure that there was no voltage present.			
4. Installed personal protective grounds.			
5. Determined the best tie method for each location.			
6. Inspected the ties to ensure that conductors remained secure.			
7. Ensured that the items listed in the conditions were properly cleaned and stored.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	EM 385-1-1	Safety and Health Requirements.	No	No
	LCH	The Lineman's and Cableman's Handbook, 11th Edition, McGraw-Hill. 2007	Yes	No
	TM 5-682	Facilities Engineering: Electrical Facilities Safety.	No	No
	TM 5-684	Facilities Engineering - Electrical Exterior Facilities. NAVFAC MO-200/AFJMAN 32-1082.	No	No
	TM 5-811-1	Electric Power Supply and Distribution {AFJMAN 32-1080}	No	No
	TM 5-811-3	Electrical Design: Lightning and Static Electricity Protection. AFM 88-9, Chap 3.	No	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
052-204-1203	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
052-204-1125	Operate a Line Truck with Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1128	Interpret an Electrical One-Line Diagram	052 - Engineer (Individual)	Analysis
052-204-1117	Inspect Hot-Line Equipment	052 - Engineer (Individual)	Analysis

052-204-1114	Rescue an Injured Victim From a Utility Pole	052 - Engineer (Individual)	Approved
052-204-1124	Climb a Utility Pole	052 - Engineer (Individual)	Approved
052-204-1116	Rescue an Injured Victim From an Aerial-Bucket Truck	052 - Engineer (Individual)	Approved
052-204-1108	Inspect Safety Equipment	052 - Engineer (Individual)	Analysis Completed
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved
052-204-1119	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Line Truck With Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1201	Maintain Climbing Equipment	052 - Engineer (Individual)	Approved
052-204-1202	Maintain Rigging/Hoisting Equipment	052 - Engineer (Individual)	Approved
052-204-1212	Operate a Bucket/Material Handler Truck	052 - Engineer (Individual)	Analysis Completed
052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Analysis Completed

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-204-1203	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
052-204-2303	Perform Primary Voltage Live-Line Testing	052 - Engineer (Individual)	Analysis Completed
052-204-1117	Inspect Hot-Line Equipment	052 - Engineer (Individual)	Analysis
052-204-1215	Splice a Medium-Voltage Overhead Power Cable	052 - Engineer (Individual)	Approved
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved
052-204-1119	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Line Truck With Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1202	Maintain Rigging/Hoisting Equipment	052 - Engineer (Individual)	Approved
052-204-2301	Perform Switching, Blocking and Tagging Procedures	052 - Engineer (Individual)	Approved
052-204-2304	Perform Secondary Voltage Live-Line Testing	052 - Engineer (Individual)	Analysis Completed
052-204-1116	Rescue an Injured Victim From an Aerial-Bucket Truck	052 - Engineer (Individual)	Approved
052-204-1127	Perform Groundman Duties	052 - Engineer (Individual)	Approved
052-204-1126	Perform Crossarm Change Out (With Conductors)	052 - Engineer (Individual)	Reviewed
052-204-1212	Operate a Bucket/Material Handler Truck	052 - Engineer (Individual)	Analysis Completed
052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Analysis Completed

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-204-2304	Perform Secondary Voltage Live-Line Testing	052 - Engineer (Individual)	Analysis Completed
052-204-1127	Perform Groundman Duties	052 - Engineer (Individual)	Approved
052-204-2303	Perform Primary Voltage Live-Line Testing	052 - Engineer (Individual)	Analysis Completed
052-204-2214	Perform Live-Line Testing	052 - Engineer (Individual)	Approved

052-204-2301	Perform Switching, Blocking and Tagging Procedures	052 - Engineer (Individual)	Approved
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved
052-204-1124	Climb a Utility Pole	052 - Engineer (Individual)	Approved
052-204-1128	Interpret an Electrical One-Line Diagram	052 - Engineer (Individual)	Analysis

Supported Collective Tasks :

Task Number	Title	Proponent	Status
05-3-5725	Install Aerial Electrical Power Distribution Equipment	05 - Engineers (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data
12Q10, Power Line Distribution Specialist, skill level 1	Enlisted	MOS: 12Q, Skill Level: SL1