

**Summary Report for Individual Task
052-204-1214
Terminate a Medium-Voltage URD Power Cable
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 during an initial installation of cables when power cables must be terminated or when an existing power cable termination is damaged beyond repair, you are given an electrician's tool kit, a lockout and tagout kit, grounding equipment, a megohmmeter test set, a voltage detector, an applicable termination kit with instructions, applicable tools specified in the termination kit instructions, applicable manufacturer's literature, and applicable personal protective equipment. This task should not be trained in MOPP.

Standard: Terminate a medium-voltage power cable so that the termination meets the rating of the original cable and does not cause an electrical hazard to personnel or damage to equipment. The cable must be able to transmit the maximum electrical load without undue heating, and it must be at the full mechanical load strength of the conductors.

Special Condition: None

Safety Level: Low

MOPP: Never

Task Statements

Cue: None

DANGER

A VOLTAGE DETECTOR SHOULD BE USED TO ENSURE THAT 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 COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

WARNING

1. THE SPLICER'S TOOLS, HANDS, AND TERMINATION MATERIALS MUST BE CLEAN DURING CONSTRUCTION. FAILURE TO COMPLY MAY CAUSE IMMEDIATE PERSONAL INJURY OR EQUIPMENT DAMAGE.
2. EMPLOY EVERY RESOURCE TO PREVENT MOISTURE (DRIPPINGS, CONDENSATION, PERSPIRATION) FROM ENTERING THE JOINT INSULATION. FAILURE TO COMPLY MAY CAUSE IMMEDIATE PERSONAL INJURY OR EQUIPMENT DAMAGE.

CAUTION

None

Remarks: None

Notes: There are several different types of termination kits available for use with a medium-voltage power cable. Each kit contains specific instructions on how to construct the termination. Always follow the manufacturer's guidelines for the particular kit used.

Performance Steps

1. Perform switching, blocking and tagging procedures.

Note: Some performance steps will be omitted when terminating an overhead, medium-voltage cable.

2. Inspect the termination kit.

a. Use the correct termination kit for the cable.

b. Inventory the kit to ensure that all components/parts are present.

3. Prepare the cable and termination according to the manufacturer's literature.

a. Measure and mark the cable.

b. Inspect the cable for carbon particles, and remove those that are found.

c. Inspect the primary cable insulation, and remove those that are found.

d. Cut the cable to the proper length.

4. Remove the jacket using the distance indicated in the manufacturer's literature, and ensure that the length required for the lug is added to the measure-back distance.

5. Remove the shield using the distance indicated in the manufacturer's literature.

6. Remove the semiconductor using the distance indicated in the manufacturer's literature.

7. Remove the high-voltage insulation layer using the distance indicated in the manufacturer's literature.

8. Install the termination lug using the correct compression tool.

a. Place two crimps on the lug, and rotate it approximately 90° between each crimp.

b. Remove sharp edges.

9. Clean surfaces using an approved solvent to remove carbon dust and residue.

10. Replace the high-voltage insulation layer according to the manufacturer's literature.

11. Apply a semiconductive layer according to the manufacturer's literature.

12. Recreate a shield layer according to the manufacturer's literature.

13. Attach a ground according to the manufacturer's literature, and ensure that it is long enough to reach the grounding point.

14. Apply a high-voltage insulation layer according to the manufacturer's literature.

15. Apply an outer jacket to prevent moisture from entering the power cable according to the manufacturer's literature.

16. Test the splice to ensure that it meets the cable rating.

17. Close out switching, blocking and tagging procedures by removing all devices.

(Asterisks indicates a leader performance step.)

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

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Performed switching, blocking and tagging procedures.			
2. Inspected the termination kit.			
3. Prepared the cable and termination according to the manufacturer's literature.			
4. Removed the jacket using the distance indicated in the manufacturer's literature and ensured that the length required for the lug was added to the measure-back distance.			
5. Removed the shield using the distance indicated in the manufacturer's literature.			
6. Removed the semiconductor using the distance indicated in the manufacturer's literature.			
7. Removed the high-voltage insulation layer using the distance indicated in the manufacturer's literature.			
8. Installed the termination lug using the correct compression tool.			
9. Cleaned surfaces using an approved solvent to remove carbon dust and residue.			
10. Replaced the high-voltage insulation layer according to the manufacturer's literature.			
11. Applied a semiconductive layer according to the manufacturer's literature.			
12. Recreated a shield layer according to the manufacturer's literature.			
13. Attached a ground according to the manufacturer's literature and ensured that it was long enough to reach the grounding point.			
14. Applied a high-voltage insulation layer according to the manufacturer's literature.			
15. Applied an outer jacket to prevent moisture from entering the power cable according to the manufacturer's literature.			
16. Tested the splice to ensure that it met the cable rating.			
17. Closed out switching, blocking and tagging procedures by removing all devices.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	EM 385-1-1	Safety and Health Requirements.	No	No
	FM 5-412	PROJECT MANAGEMENT	No	No
	LCH	The Lineman's and Cableman's Handbook, 11th Edition, McGraw-Hill. 2007	No	No
	TM 3-34.45	ENGINEER PRIME POWER OPERATIONS	No	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 5-686	Power Transformer Maintenance and Acceptance Testing.	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. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
052-204-1115	Rescue an Injured Victim From a Manhole	052 - Engineer (Individual)	Reviewed
052-204-1117	Inspect Hot-Line Equipment	052 - Engineer (Individual)	Reviewed
052-204-1108	Inspect Safety Equipment	052 - Engineer (Individual)	Reviewed
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Reviewed
052-204-1113	Prepare a Manhole for Safe Entry	052 - Engineer (Individual)	Reviewed
052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Analysis Completed

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-204-2209	Install Distribution Equipment (Energized)	052 - Engineer (Individual)	Approved
052-204-1122	Install Distribution Equipment (De-energized)	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)	Reviewed
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Reviewed
052-204-2301	Perform Switching, Blocking and Tagging Procedures	052 - Engineer (Individual)	Reviewed
052-204-2216	Perform Maintenance on Electrical Distribution Equipment	052 - Engineer (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-204-2212	Energize an Electrical Distribution System	052 - Engineer (Individual)	Reviewed
052-204-1211	Install Distribution System Protection and Equipment (De-energized)	052 - Engineer (Individual)	Reviewed
052-204-1205	Install Underground Cable	052 - Engineer (Individual)	Analysis Completed
052-204-1121	Install High-Intensity Lights and Ballasts	052 - Engineer (Individual)	Reviewed
052-204-2216	Perform Maintenance on Electrical Distribution Equipment	052 - Engineer (Individual)	Reviewed

052-204-2217	Manage a Power Line Crew	052 - Engineer (Individual)	Analysis Completed
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Supported Collective Tasks :

Task Number	Title	Proponent	Status
05-3-5702	Install Underground Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5704	Created from Template: Perform Nonorganic Equipment Power Distribution Maintenance Operations	05 - Engineers (Collective)	Analysis
05-3-5700	Install Nonstandard Low-Voltage, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5727	Install Underground Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5704	Perform Nonorganic Equipment Power Distribution Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5731	Perform Electrical-Power, Distribution Equipment Organizational Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5724	Install Expedient, Surface-Laid, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5729	Operate Power Generation and Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5700	Created from Template: Install Nonstandard Low-Voltage, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Analysis
05-3-5723	Install Prime Power Generation Equipment	05 - Engineers (Collective)	Approved
05-3-5701	Created from Template: Install Low-Voltage, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Analysis
05-3-5702	Created from Template: Install Underground Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Analysis
05-3-5730	Perform Electrical-Power Generation Equipment Organizational Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5707	Perform Nonorganic Power Generation System Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5703	Perform Electrical Safety Systems Testing and Maintenance	05 - Engineers (Collective)	Approved
05-3-5701	Install Low-Voltage, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5725	Install Aerial Electrical Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5732	Conduct Electrical-Power Generation Equipment Intermediate Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5700	Created from Template: Install Nonstandard Low-Voltage, Electrical-Power Distribution Equipment	05 - Engineers (Collective)	Analysis

ICTL Data :

ICTL Title	Personnel Type	MOS Data
MOS 12Q10 ICTL	Enlisted	MOS: 12Q, Skill Level: SL1