

# Training and Evaluation Outline Report

**Status: Approved**

**04 Dec 2014**

**Effective Date: 04 Dec 2014**

**Task Number:** 05-PLT-5725

**Task Title:** Install Aerial Electrical Power Distribution Equipment

**Distribution Restriction:** Approved for public release; distribution is unlimited.

**Destruction Notice:** None

**Foreign Disclosure: FD1** - This training product has been reviewed by the training developers in coordination with the Fort Leonard Wood MSCoE foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

## Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATP 5-19 (Change 001 09/08/2014 78 Pages)	RISK MANAGEMENT <a href="http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf">http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf</a>	Yes	No
	EM 385-1-1	Safety and Health Requirements.	Yes	No
	NESCA®	National Electrical Safety Code. 2012 Edition	Yes	No
	NETA?	Maintenance Testing Specifications for Electrical Power Distribution Equipment & Systems. 2007	Yes	No
	NFPA 70	National Electrical Code	Yes	No
	NFPA 70E	Standard for Electrical Safety Requirements for Employee Workplaces. 2004	Yes	No
	TM 3-34.45	ENGINEER PRIME POWER OPERATIONS	Yes	No
	TM 5-302-4	ARMY FACILITIES COMPONENTS SYSTEM: DESIGN (S&I, USAEDH, ATTN: HNDED-FD, HUNTSVILLE, AL 35807-4301)	Yes	No
	TM 5-682	Facilities Engineering: Electrical Facilities Safety.	Yes	Yes

**Conditions:** The element is directed to install an aerial (overhead) electrical power distribution system. A selected and prepared power line right-of-way, line construction plans, and specifications are available. All equipment, personnel and materials assigned by table of organization and equipment (TOE) are available. Work site security is provided by the supported unit.

Note: The Commander must still determine at what level of training they would want the element to perform. Crawl, walk or run. This can only be determined after consideration as to the units training level.

The Commander prior to evaluating an element in the conduct of the task must determine if it will be conducted in a Live, Virtual, or Constructive environment, additionally it must also be determined which condition as described below that the element will conduct the task. The selection made for this task is at a trained level of proficiency. The commander must determine which of the environments below will best suit the unit and the proficiency level at which the unit is. When conducting crawl or walk level training units should not increase the intensity until the unit has achieved the standards and then unit trainers should include variables that increase proficiency in all conditions.

Note: The condition statement for this task is written assuming the highest training conditions reflected on the Task Proficiency matrix required for the evaluated unit to receive a "fully trained" (T) rating.

Note: Condition terms definitions:

**Dynamic Operational Environment:** Three or more operational and two or more mission variables change during the execution of the assessed task. Operational variables and threat Tactics, Techniques, and Procedures (TTPs) for assigned counter-tasks change in response to the execution of Blue Forces (BLUFOR) tasks.

**Complex Operational Environment:** Changes to four or more operational variables impact the chosen friendly COA/mission. Brigade and higher units require all eight operational variables of Political, Military, Economic, Social, Infrastructure, Information, Physical environment, and Time (PMESII-PT) to be replicated in varying degrees based on the task being trained.

**Single threat:** Regular, irregular, criminal or terrorist forces are present.

Hybrid threat: Diverse and dynamic combination of regular forces, irregular forces, and/or criminal elements all unified to achieve mutually benefiting effects.

This task should not be trained in MOPP 4.

**Standards:** The element installs the distribution system according to the system design criteria and the approved procedures for installing aerial distribution systems and equipment.

Note: Leaders are defined as the Commander, Executive Officer, First Sergeant, Operations Sergeant, Platoon Leaders, Platoon Sergeants, Squad Leaders, Team Leaders.

**Live Fire Required:** No

**Objective Task Evaluation Criteria Matrix:**

Plan and Prepare		Execute					Assess		
Operational Environment	SQUAD & PLT	Training Environment (LW/C)	Training/Authorized % of Leaders Present at	% of Soldiers Present at	External Eval	% Performance Measures 'GO'	% Critical Performance Measures 'GO'	% Leader Performance Measures 'GO'	Task Assessment
Dynamic (Single Threat)	Day	IAW unit CATS statement.	>=85%	>=80%	Yes	>=91%	All	>=90%	<b>T</b>
			75-84%			80-90%		80-89%	<b>T-</b>
Static (Single Threat)	Night		65-74%	75-79%	No	65-79%	<All	<=79%	<b>P</b>
	Day		60-64%	60-74%		51-64%			<b>P-</b>
			<=59%	<=59%	<=50%		<b>U</b>		

**Remarks:** None

**Notes:** All required references and technical manuals will be provided by the local command.

Task Statements

Cue: None

## DANGER

Leaders have an inherent responsibility to conduct Risk Management to ensure the safety of all Soldiers and promote mission accomplishment.

1. THIS TASK SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL WHO ARE KNOWLEDGEABLE IN THE INSTALLATION, OPERATION, AND MAINTENANCE OF MEDIUM-VOLTAGE ELECTRICAL POWER GENERATION EQUIPMENT AND ITS ASSOCIATED HAZARDS. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.
2. REMOVE RINGS, NECKLACES, OTHER JEWELRY AND LOOSE CLOTHING. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.
3. DO NOT OPERATE THE GENERATOR SET UNLESS IT HAS BEEN PROPERLY GROUNDED. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

## WARNING

Risk management is the Army's primary decision-making process to identify hazards, reduce risk, and prevent both accidental and tactical loss. All Soldiers have the responsibility to learn and understand the risks associated with this task.

## CAUTION

Identifying hazards and controlling risks across the full spectrum of Army functions, operations and activities is the responsibility of all Soldiers.

NOISE LEVELS IN EXCESS OF 85 DECIBELS EXIST WITHIN A 50-FOOT RADIUS OF OPERATING EQUIPMENT. ALWAYS WEAR SINGLE HEARING PROTECTION WITHIN A 50-FOOT RADIUS OF OPERATING EQUIPMENT. FAILURE TO COMPLY MAY CAUSE INJURY.



**MOPP 4:** Never

**MOPP 4 Statement:** None

**NVG:** Never

**NVG Statement:** None

**Prerequisite Collective Task(s):**

Step Number	Task Number	Title	Proponent	Status
	05-CO-5750	Provide Prime Power Support	05 - Engineers (Collective)	Approved
	05-CO-8009	Provide Engineer Support to Civil Support Operations	05 - Engineers (Collective)	Approved

**Supporting Collective Task(s):**

Step Number	Task Number	Title	Proponent	Status
	05-2-0017	Plan for Engineer Augmentation Support	05 - Engineers (Collective)	Approved
	05-2-0018	Conduct Report Procedures	05 - Engineers (Collective)	Approved
	05-3-3006	Establish Work Site Security for a General Engineering Mission	05 - Engineers (Collective)	Approved
	71-CO-5100	Conduct Troop Leading Procedures for Companies	71 - Combined Arms (Collective)	Approved

**OPFOR Task(s):**

Task Number	Title	Status
71-2-9002	OPFOR Ambush(Company and below)	Approved
71-CO-9004	OPFOR Reconnaissance Attack (Company and below)	Approved

**Supporting Individual Task(s):**

Step Number	Task Number	Title	Proponent	Status
	052-204-1108	Inspect Safety Equipment	052 - Engineer (Individual)	Approved
	052-204-1114	Rescue an Injured Victim From a Utility Pole	052 - Engineer (Individual)	Approved
	052-204-1116	Rescue an Injured Victim From an Aerial-Bucket Truck	052 - Engineer (Individual)	Approved
	052-204-1117	Inspect Hot-Line Equipment	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
	052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved
	052-204-1121	Install High-Intensity Lights and Ballasts	052 - Engineer (Individual)	Approved
	052-204-1122	Install Distribution Equipment (De-energized)	052 - Engineer (Individual)	Approved
	052-204-1123	Secure Conductor to Insulator (De-energized)	052 - Engineer (Individual)	Approved
	052-204-1124	Climb a Utility Pole	052 - Engineer (Individual)	Approved
	052-204-1125	Operate a Line Truck with Auxiliary Equipment	052 - Engineer (Individual)	Approved
	052-204-1126	Perform Crossarm Change Out (With Conductors)	052 - Engineer (Individual)	Approved
	052-204-1127	Perform Groundman Duties	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
	052-204-1203	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
	052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Approved
	052-204-1206	Use a Line Truck with Trailer to Load and Unload Poles	052 - Engineer (Individual)	Approved
	052-204-1207	Install a Utility Pole	052 - Engineer (Individual)	Approved
	052-204-1209	String Single Phase and Three Phase Overhead Conductors	052 - Engineer (Individual)	Approved
	052-204-1210	Sag Single Phase and Three Phase Overhead Conductors	052 - Engineer (Individual)	Approved
	052-204-1211	Install Distribution System Protection and Equipment (De-energized)	052 - Engineer (Individual)	Approved
	052-204-1212	Operate a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
	052-204-1213	Splice a Medium-Voltage URD Power Cable	052 - Engineer (Individual)	Approved
	052-204-1214	Terminate a Medium-Voltage URD Power Cable	052 - Engineer (Individual)	Approved
	052-204-1215	Splice a Medium-Voltage Overhead Power Cable	052 - Engineer (Individual)	Approved
	052-204-2105	Perform a Power Pole Serviceability Inspection	052 - Engineer (Individual)	Approved
	052-204-2107	Connect an Overhead Sectionalizer, Recloser, or Circuit Breaker	052 - Engineer (Individual)	Approved
	052-204-2108	Connect an Overhead Voltage Regulator	052 - Engineer (Individual)	Approved
	052-204-2109	Connect an Overhead Transformer Bank	052 - Engineer (Individual)	Approved
	052-204-2114	Install an Overhead Air Switch	052 - Engineer (Individual)	Approved
	052-204-2207	Conduct a Safety Briefing	052 - Engineer (Individual)	Approved
	052-204-2208	Conduct a Safety Inspection	052 - Engineer (Individual)	Approved
	052-204-2209	Install Distribution Equipment (Energized)	052 - Engineer (Individual)	Approved
	052-204-2210	Secure Conductor to Insulator (Energized)	052 - Engineer (Individual)	Approved
	052-204-2211	Develop a Bill of Materials (BOM) List	052 - Engineer (Individual)	Approved
	052-204-2212	Energize an Electrical Distribution System	052 - Engineer (Individual)	Approved
	052-204-2215	Perform an Insulation-Resistance Test	052 - Engineer (Individual)	Approved
	052-204-2216	Perform Maintenance on Electrical Distribution Equipment	052 - Engineer (Individual)	Approved
	052-204-2217	Manage a Power Line Crew	052 - Engineer (Individual)	Approved
	052-204-2219	Supervise the Use of a Line Truck With Trailer to Load and Unload Utility Poles	052 - Engineer (Individual)	Approved
	052-204-2301	Perform Switching, Blocking and Tagging Procedures	052 - Engineer (Individual)	Approved
	052-204-2302	Install Distribution System Protection and Equipment (Energized)	052 - Engineer (Individual)	Approved
	052-204-2303	Perform Primary Voltage Live-Line Testing	052 - Engineer (Individual)	Approved
	052-204-2304	Perform Secondary Voltage Live-Line Testing	052 - Engineer (Individual)	Approved
	052-204-2305	Trouble Shoot Primary/Secondary Voltage Systems	052 - Engineer (Individual)	Approved
	052-204-2306	Supervise the Installation of a Utility Pole	052 - Engineer (Individual)	Approved
	052-204-2308	Design an Overhead Electrical Distribution System	052 - Engineer (Individual)	Approved
	052-204-3015	Supervise the Sagging of Overhead Conductors	052 - Engineer (Individual)	Approved
	052-204-3016	Supervise the Stringing of Overhead Conductors	052 - Engineer (Individual)	Approved
	052-206-3101	Produce an Electrical Schematic	052 - Engineer (Individual)	Approved
	052-207-2126	Produce an Electronic Schematic	052 - Engineer (Individual)	Approved

	052-210-1102	Develop a Power Plant Safety SOP	052 - Engineer (Individual)	Approved
	052-210-1103	Manage Installation of a Medium Voltage Non-Aerial Air Switch	052 - Engineer (Individual)	Approved
	052-210-1105	Manage the Installation of Distribution Equipment	052 - Engineer (Individual)	Approved
	052-210-1106	Perform Quality Assurance (QA) Quality Control (QC)	052 - Engineer (Individual)	Approved
	052-210-1110	Manage Load Assessment	052 - Engineer (Individual)	Approved
	052-210-1111	Manage Installation of an Overhead System Fuse or Fuse Link	052 - Engineer (Individual)	Approved
	052-210-1112	Manage the Manual Erection of a Utility Pole	052 - Engineer (Individual)	Approved
	052-210-1113	Manage the Mechanical Erection of a Utility Pole	052 - Engineer (Individual)	Approved
	052-210-1115	Manage the Installation /Stringing of Overhead Conductors	052 - Engineer (Individual)	Approved
	052-210-1117	Design a Temporary Medium Voltage Distribution System	052 - Engineer (Individual)	Approved
	052-210-1134	Manage Construction Survey Operations	052 - Engineer (Individual)	Approved
	052-210-1139	Manage the Installation of Aerial Electrical Power Distribution Equipment	052 - Engineer (Individual)	Approved
	052-210-1144	Manage Disaster Relief Operations	052 - Engineer (Individual)	Approved
	052-244-2112	Perform Lockout and Tagout Procedures	052 - Engineer (Individual)	Approved
	052-244-2144	Read a Schematic	052 - Engineer (Individual)	Approved
	052-244-3113	Supervise the Maintenance of Distribution Equipment	052 - Engineer (Individual)	Approved
	052-244-3114	Supervise an Automatic Transfer Switch (ATS) Service	052 - Engineer (Individual)	Approved
	052-244-3116	Design an Overhead Electrical Distribution System	052 - Engineer (Individual)	Approved
	052-244-4205	Perform Electrical Project Management	052 - Engineer (Individual)	Approved
	052-244-4206	Perform Quality Assurance (QA) and/or Quality Control (QC) Responsibilities	052 - Engineer (Individual)	Approved
	052-244-4209	Perform Quality Assurance (QA) and/or Quality Control (QC) Duties	052 - Engineer (Individual)	Approved
	052-244-4210	Supervise a Power Plant Installation	052 - Engineer (Individual)	Approved
	052-244-4211	Conduct Contract Officer's Technical Representative (COTR) Operations	052 - Engineer (Individual)	Approved
	052-264-2102	Install an Overhead System Fuse or Fuse Link	052 - Engineer (Individual)	Approved

**Supporting Drill(s):** None

**Supported AUTL/UJTL Task(s):**

Task ID	Title
ART 4.1.7.3	Provide Technical Engineer Support

**TADSS**

TADSS ID	Title	Product Type	Quantity
No TADSS specified			

**Equipment (LIN)**

LIN	Nomenclature	Qty
No equipment specified		

**Material Items (NSN)**

NSN	LIN	Title	Qty
No material items specified			

**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 the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card. .

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer 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. .