CFETP 3E0X1WG Parts I and II 1 Aug 2018

ELECTRICAL SYSTEMS

Wage Grade Series 2805/2810/ 2604/2606/2608/2610



CAREER FIELD EDUCATION AND TRAINING PLAN

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CAREER FIELD EDUCATION AND TRAINING PLAN

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WAGE GRADE SERIES 2805/2810/2604/2606/2608/2610

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OPR: Air Force Civil Engineer Functional Advisory Council Wage Grade Panel Certified by: Dave Perkins and Greg ZseDenny, Wage Grade Panel Chairs

PREFACE

This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements and training support resources for the Electrical Systems Wage Grade series. The CFETP will provide our wage grade personnel with a clear career path to success and instill rigor in all aspects of our Job Series training.

The CFETP consists of two parts used by the supervisor to plan, manage, and control training within the job series.

Part I provides information necessary for overall management of the job series.

- Section A provides general information about how the CFETP will be used.
- Section B identifies job series field progression information, duties and responsibilities, training strategies, and the job series path.

Part II includes the following:

- Section A identifies the Group Series Training Standard (GSTS) to include duties, tasks, and technical references to support civilian Wage Grade training programs.
- Section B identifies available support materials.
- Section C identifies a training course index supervisors can use to determine resources available to support training. Included here are both mandatory and optional courses, and exportable courseware.

Note: At unit level, supervisors and trainers must use Part II to identify, plan, and conduct training commensurate with the overall goals of this guide.

Using guidance provided in the CFETP will ensure individuals in these wage grade series receive effective and efficient training at the appropriate point in their careers. This plan will enable us to train today's work force for tomorrow's jobs. At the unit level, supervisors and trainers must use Part II to identify, plan, and conduct training commensurate with the overall goals of this guide.

ABBREVIATIONS/TERMS EXPLAINED

Advanced Distributive Learning (ADL). Anytime, anyplace learning within DoD consisting of instructional modules comprised of sharable content objectives in an Internet/Intranet environment.

Air Force Civilian Career Field Manager (AFCCFM). An individual on the Air Staff charged with the responsibility for overseeing all training and career field management aspects of an Air Force series or group of series.

Air Force Civil Engineer Center (AFCEC). The focal point for all Civil Engineer training development. All Force Development Managers (FDM) are located at AFCEC.

Air Force Institute of Technology (AFIT). Provides vital, relevant, and connected education that enables Airmen to be ready engineers and great leaders who know how to build sustainable installations to last while leading the change for the Civil Engineer career field. Course list can be accessed at http://www.afit.edu/cess/index.cfm.

Air Force Training Record (AFTR). Electronic training data base to document training and access is located at the CE-VLC.

Air Force Wage Grade Series Qualification Standard (AFWGSQS). A comprehensive task list that describes a particular series or duty position. Used by supervisors to document task qualifications. The tasks on the AFJQS are common to all persons serving in the described duty position.

Air Force Qualification Training Package (AFQTP). An instructional package designed for use as a training resource to qualify, or aid qualification, in a duty position or program, or on a piece of equipment. AFQTPs identify the Air Force's standardized method for performing the task. The AFQTP may be printed (paper-based), computer-based, in other audiovisual media formats, or all three.

Career Development Course (CDC). Self-paced, correspondence course published to provide the information necessary to satisfy the career knowledge component of on-the-job training (OJT). These courses are developed from references identified in the CFETP correlating with mandatory knowledge items listed in the Air Force Enlisted Classification Directory (AFECD). CDCs will contain information on basic principles, techniques, and procedures common to an AFSC. They do not contain information on specific equipment or tasks unless best illustrating a procedure or technique having utility to the entire AFSC.

CE Portal. The one-stop for all things Civil Engineering. Contains link to CE Force Development and Civilian Development Resource Center/Wage Grade Training Assets at: https://cs2.eis.af.mil/sites/10041/Pages/default.aspx.

Civil Engineer Virtual Learning Center (CE-VLC). Anytime, anyplace learning within the Civil Engineer Community consisting of instructional modules and skill-level awarding course material specific to the AFSC.

Commercial Off The Shelf (COTS). Commercially-procured training products.

Computer-Based Training (CBT). A self-paced stand-alone computer product used to deliver interactive subject and task knowledge.

Distance Learning (DL). Includes Video Tele-seminar (VTS), Video Tele-training (VTT), and CBT. Formal courses that a training wing or a contractor develops for export to a field location (in place of resident training) for trainees to complete without the on-site support of the formal school instructor. For instance, courses are offered by Air Force Institute of Technology, Air University, and Training Detachment.

Duty Position Tasks. Tasks identified by the workcenter supervisor as critical and common training tasks needed for the duty position and mission accomplishment.

Enlisted Professional Military Education (EPME). EPME provides a continuum of learning through progressive courses concentrated on developing airmanship and war-fighting skills. EPME plays a vital role in preparing Airmen for increased supervision, leadership, and management challenges. The three levels of Air Force EPME are Airman Leadership School, Noncommissioned Officer Academy and Air Force Senior Noncommissioned Officer Academy. EPME is available to Wage Grade civilians.

Functional Advisory Council Wage Grade Panel. The Wage Grade Panel is one of the three panels that make up the Civil Engineer Functional Advisory Council (FAC). The Wage Grade Panel charter is to work issues, develop policy, and provide recommendations to the FAC on matters related to civilian wage grade requirements. The Wage Grade Panel works through the FAC, in service to the CE Total Force community.

Just-in-Time (JIT) Training. Training required just prior to a selected deployment or tasking that delivers training necessary for mission accomplishment. It is typically predicated on hard-to-obtain contingency skill.

On-the-Job Training (OJT). Hands-on, over-the-shoulder training conducted to certify personnel in job qualification (duty position certification) training.

Proficiency Training. Additional training, either in-residence, advanced/supplemental training courses, or on-the-job training provided to personnel to increase their skills and knowledge beyond the minimum.

Regional Training Site (RTS). Total Force training centers managed by the Air National Guard.

Resource Constraints. Resource deficiencies, such as money, facilities, time, manpower, or equipment that precludes desired training from being delivered.

Wage Grade Series Training. A mix of formal training (technical school) and informal training (on-the-job) to maintain and enhance wage grade series specific technical skills.

Group Series Training Standard (GSTS). Describes skills and knowledge that Airmen in a particular job series need on the job and for future career development opportunities. It

further serves as the overall training requirements for a Wage Series taught in the resident and nonresident courses.

Total Force. All collective Air Force components (Active Duty, Reserve, Guard, and Civilian elements) of the United States Air Force.

Career Field Education and Training Plan (CFETP). A comprehensive, multipurpose document encapsulating the entire spectrum of education and training for various wage grade series. It outlines a logical growth plan that includes training resources and is designed to make job series training identifiable, to eliminate duplication, and to ensure this training is budget defensible.

PART I

SECTION A - GENERAL INFORMATION

- **A1. Purpose:** This CFETP provides a formalized tool for supervisors and managers of civilian wage grade employees to ensure required knowledge and skill levels are achieved, documented, and maintained. The CFETP also indicates training opportunities and methods for employee to gain leadership and management experience for career development.
- A1.1. The CFETP has several purposes:
- A1.1.1. Serves as a management tool to plan, manage, conduct, and evaluate a wage grade series training program. It is used to help supervisors identify training at the appropriate point in an individual's career.
- A1.1.2. Identifies task and knowledge training requirements for this wage grade series and recommends education/training throughout each phase of an individual's career.
- A1.1.3. Lists training courses available in this wage grade series and identifies sources of training and the delivery methods. It is used as a tool for collecting and demonstrating the need for training resources.
- **A2.** Uses. Managers and supervisors may use the plan at all levels to ensure comprehensive and cohesive training programs are available for each individual in the wage grade series.
- A2.1. Wage Grade Panel of the Functional Advisory Council will develop/revise formal resident, non-resident, field, and exportable training based on requirements established by the users and documented in Part II of the CFETP. They will also work with the Air Force Civil Engineer Center Force Development Division (AFCEC/COF) to develop acquisition strategies for obtaining resources needed to provide the identified training.
- A2.2. The Wage Grade Panel will ensure their training programs complement the CFETP training requirements and identify requirements that can be satisfied by OJT, resident training, contract training, or exportable courses.
- A2.3. Supervisors guide each individual through completion of training specified in this plan.
- A2.4. Each individual completes training requirements specified in this plan. The list of courses in Part II of this CFETP will be used as a reference to support training.
- **A3.** Coordination and Approval. The Wage Grade Panel Chairs are the approval authority for the CFETP. The Wage Grade Panel will identify and coordinate on wage grade series training requirements. Using the list of courses in Part II, they will eliminate duplicate training.

PARTI

SECTION B - WAGE GRADE SERIES PROGRESSION AND INFORMATION

- **B1.** Series Descriptions. See each individual's Core Personnel Document for the description.
- B1.1. Wage Grade Series Summary. Installs, inspects, maintains, troubleshoots, repairs, and modifies high and low voltage (above and below 600 volts), electrical distribution systems and components; airfield lighting systems; fire alarms and complies with environmental and safety regulations and practices.
- **B2. Skill and Career Progression.** Adequate training for progression from the apprentice to the mechanic level, and possibly into a supervisory position play an important role in the Air Force's ability to accomplish its mission. It is essential everyone involved in training do their part to participate in, plan, manage, and conduct effective training. The guidance provided in this part of the CFETP will identify viable training at appropriate points in an individual's career.
- B2.1. Apprentice/Helper (A/H).
- B2.1.1. Upon completion of initial skills training, an employee may work with a trainer to enhance their knowledge and skills to perform at the highest attainable level within their series.
- B2.1.2. Utilize the Career Development Course (CDC) and other exportable courses for subject and task fundamentals in the series.
- B2.1.3. Encourage apprentice/helpers to continue academic education and begin EPME by enrolling in Airman Leadership School either in-residence or by correspondence course.
- B2.2. Journeyman (J).
- B2.2.1. Journeymen may continue to advance their skills by completing additional training. Upon completing training, they may be assigned job positions such as team leader or trainer. Journeymen can pursue leadership training and skills in order to qualify for potential advancement to Work Leader or Work Supervisor positions.
- B2.2.1. Encourage journeyman to enroll in the Noncommissioned Officer Academy (NCOA) either in-residence or by correspondence course.
- B2.3. Craftsman (C).
- B2.3.1. Craftsmen may continue to advance their skills by completing additional training. They may be assigned job positions such as team leader or trainer. Craftsmen are encouraged to pursue leadership training and skills in order to qualify for potential advancement to Work Leader or Work Supervisor positions.
- B2.3.2. Encourage craftsmen to continue academic education and complete Noncommissioned Officer Academy (NCOA) either in-residence or by correspondence course.
- B2.3.3. A Master Craftsman is typically graded higher than WG-10 where skills, knowledge and

PART I

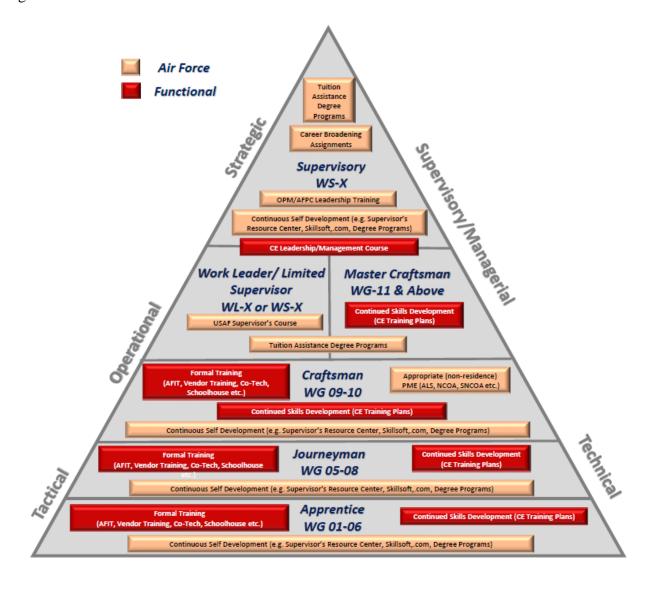
abilities require higher technical abilities than standard craftsmen. They are duty/location specific and not for all job series.

- B2.4. Work Leader (WL).
- B2.4.1. A Work Leader can be expected to perform limited functions of a First Line Supervisor or act as a Team Lead.
- B2.4.2. Completion of AFIT Civilian Supervisors Course (WMGT 571) is highly encouraged.
- B2.4.3. Should pursue increased knowledge of budget, manpower, resources, and personnel management.
- B2.4.4. Recommend pursuit of additional higher education and completion of courses outside of their job series for career broadening opportunities.
- B2.4.5. Encourage Work Leader to continue academic education and complete Noncommissioned Officer Academy (NCOA) either in-residence or by correspondence course.
- B2.5. First Line Supervisor.
- B2.5.1. A supervisor can be expected to fill positions such as the Element Chief or Special Projects Supervisor.
- B2.5.2. Completion of AFIT Civilian Supervisors Course (WMGT 571) is highly encouraged.
- B2.5.3. Should pursue increased knowledge of budget, manpower, resources, and personnel management.
- B2.5.4. Recommend pursuit of additional higher education and completion of courses outside of their job series for career broadening opportunities.
- B2.5.5. Encourage supervisors to continue academic education and complete Senior Noncommissioned Officer Academy (SNCOA) by correspondence.
- **B3.** Correspondence Course Directions. Nonresident attendance for professional military education courses is accomplished through the Air Force Portal.
 - B3.1. Login to the AF Portal (https://www.my.af.mil/).
 - B3.2. Copy and paste the URL https://www.my.af.mil/aurepmprod/auportal/welcome.AirUniversity into your browser.
 - B3.3. Create an account and/or login.
 - B3.4. Once logged in, "Distance Learning" on the left hand side.
 - B3.5. Select the appropriate course.

PART I

B4. Wage Grade Career Field Pyramid.

Figure 1.



PART II

SECTION A - GROUP SERIES TRAINING STANDARD

- **A1**. **Purpose.** The CFETP is designed to be a tool for supervisors to use in assessing the skill level of current and new employees. The CFETP may be used to document training and proficiency of the employee on associated task/s by the supervisor or certified trainer.
- A1.1. Column 1 (*Tasks, Knowledge, and Technical References*). Lists the most common tasks, knowledge, and supporting technical references (TR) necessary for Airmen to perform duties in the Apprentice, Journeyman, Craftsman, and Supervisor level.
- A1.2. Column 2 (*Tasks and Proficiency Codes*). Identifies duty position tasks (series training requirements) with a proficiency code and indicates training requirements. It shows the proficiency to be demonstrated on the job by the employee as a result of training on the task, knowledge and the career knowledge provided by formal courses, CDC, distance learning (DL) web-based training (WBT) and AFQTPs. CDC listing maintained by the unit education and training manager for current CDC listings.
- A1.3. **Column 3** (*Certification of Training*). Used to record completion of tasks and knowledge training requirements. Task certification requires the task to be trained by a trainer designated by the supervisor. The trainer can be either civilian or military. Use the automated training record application to document individual qualifications. The training start and completion date are documented, the task is signed by the trainee and either the workcenter supervisor, a Master Sergeant (or above) or the unit training manager. This action will complete the task certification.

Note: The "trainer" signing the record MUST be the workcenter supervisor, work leader, a Master Sergeant (or above) or the unit training manager. This person does not necessarily train the task, but will ensure the training is conducted by a qualified trainer prior to completing task certification.

Note: If a workcenter supervisor, work leader, a Master Sergeant (or above) or the unit training manager are not available in a shop or unit to certify a task, the Operations Flight deputy commander will designate a certifier within the flight and grant the UTM role in AFTR so as to certify training tasks in AFTR. This person does not necessarily train the task, but will ensure the training is conducted by a qualified trainer prior to completing task certification.

- A1.4. **Qualitative Requirements.** Contains the proficiency code key used to indicate the level of training and knowledge provided by WBT, resident training and career development courses.
- A1.5. **Job Qualification Standard (JQS).** The Group Series Training Standard (GSTS) becomes the JQS for OJT when entries are made in the GSTS. For OJT, the tasks in Column 1 are trained and qualified to the go/no go level. "Go" means the individual can perform the task without assistance and meets local requirements for accuracy, timeliness, and correct use of procedures. AFQTPs, when available, shall be used to identify Air Force standardized procedures. When used as a JQS, the following requirements apply:

PART II

- A1.5.1. **Documentation.** Document and certify completion of training.
- A1.6. Transcribing from previous versions to the new CFETP. Most items should transcribe automatically during the update of the new CFETP if AFTR is used to document training and certifications. The supervisor must conduct a review of the new GSTS to identify any new duty position tasks and add those tasks to their duty positions.
- A1.6.1. **Previous training certification not listed.** If previous training certification is not listed in the individual record, select the parent task to be transcribed, check the task title(s) block, and click on the transcribe button. Enter the date of the original certification and sign off the task(s). The trainee will then sign off the task(s) to finalize the transcription of previous training certification.
- A1.6.2. **Transcribing external training certification.** If a trainee attended a formal training course and received appropriate accreditation, select the 623 III section of the user's automated training record and locate the course title in the master task list, then enter the completion date. If the course title is not listed, contact the UTM to have it loaded from the master catalog. If it is not listed in the master catalog contact the Force Development Manager at AFCEC to have it loaded in the master catalog. Update MyBiz with additional training certificates through the self-certification process.
- A1.6.3. **Training Standard.** Tasks are trained and certified to the "go" level. Go means the individual can perform the task without assistance and meets the local requirements for accuracy, timeliness, and correct use of procedures. AFQTPs, when available, shall be used to identify Air Force standardized procedures.
- **A2. Recommendations.** This training plan is a living document. Comments and recommended changes are welcome. Recommendations for changes must be coordinated through the FDM and Functional Advisory Council (FAC) Wage Grade Panel for adjudication.

SECTION B - SUPPORT MATERIAL

- **B1.** Air Force Qualification Training Packages.
- B1.1. For a complete list of up-to-date AFQTPs applicable to the series, go to CE-VLC.
- B1.2. The UTM or supervisor can download paper-based AFQTP's. Paper-based AFQTP's can be found on the <u>CE-VLC</u> under the Library link and then by selecting Resources.
- B1.2.1. In addition to the paper-based AFQTPs there are web-based courses or assessments developed for certain tasks that are available on the <u>CE-VLC</u> under the Course List link and Group Series topic area.
- B1.3. CDC listings are maintained by the unit education and training manager for current CDC listings.

PART II

SECTION C - EDUCATION AND TRAINING COURSE INDEX

C1. Purpose. This section of the CFETP identifies training courses available for mechanical systems series. Refer to Education and Training Course Announcements (ETCA) web site for information on the Air Force in-residence and mobile courses. The web site address is https://etca.randolph.af.mil/.

J3AZR3E051 - 04AC CE Advanced Electrical Troubleshooting

J3AZR3E051 - 05AB Airfield Lighting Systems

J3ACR3E071 - 00AB Electrical Systems Craftsman

J3AZR3E051 - 07AC Electrical Distribution System Maintenance

J5AZB3E051 - 00AA Lightning Protection for AF Facilities

OFFICIAL

DAVID A. PERKINS, NH-04, DAF Wage Grade Panel Co-Chair GREGORY P. ZSEDENNY, WS-16, DAF Wage Grade Panel Co-Chair

- 1. Qualitative Requirements (Proficiency Code Key)
- 2. Wage Grade Group Series Training Standard (GSTS)
- 3. Locally Developed Training Supplement

This Block Is For Identification Purposes Only	
Name Of Trainee	
Printed Name (Last, First, Middle Initial)	Initials (Written)
	ner/Training Official And Written Initials
N/I	N/I
N/I	N/I
N/I	L N a
N/I	N/I
N/I	N/I
101	17/1
N/I	N/I
Explanations	
# - This mark is used to indicate training is provided in a formal cours	rse.

	Behavioral Statement GSTS Coding System
Code	Definition
K	Subject Knowledge Training - The verb selection identifies the individual's ability to identify facts, state principles, analyze, or evaluate the subject.
P	Performance Training - Identifies that the individual has performed the task to the satisfaction of the trainer/certifier; however, the individual may not be capable of meeting the field requirements for speed and accuracy.
pk	Performance Knowledge Training - The verb selection identifies the individual's ability to relate advanced facts, procedures, operating principles, and operational theory for the task.
-	Assumes element knowledge and/or proficiency at the higher level

Tasks, Knowledge and Technical References		•	tion Tas		3. (Certificat	ion of Tra	aining
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init

1. CIVIL ENGINEER (CE) COMMON								
CORE CONCEPTS COURSES TR: CE Virtual Learning Center (CE-								
VLC)								
1.1. Accomplish CE 5-Level Core								
Concepts Course	K	_	-	-				
Note: Must Complete WBT								
1.2. Accomplish CE 7-Level Core								
Concepts Course			K	-				
Note: Must Complete WBT 2. AFS SPECIFIC SAFETY								
STANDARD TR: AFIs 32-1064, 91-								
203; American Red Cross Adult CPR								
Handbook, American Heart								
Association; UFC 3-560-01; NFPA								
70E								
2.1. Electrical facilities safe clearance forms								
2.1.1. Use AF Form 979	K	pk	_	_				
2.1.2. Use AF Form 980	K	Pk	_	_				
2.1.2. Use AF Form 269:	K	1 K	-	-				
			_					
2.1.3.1. When switching	K	-	pk	-				
2.1.3.2. When blocking and tagging	K	-	pk	-				
2.1.4. Plan safe clearance	K	-	pk	-				
2.2. Confined space								
2.2.1. Identify	K	-	-	-				
2.2.2. Safe entry procedures								
2.2.2.1. Test		K	P	-				
2.2.2.2. Ventilate		K	P	-				
2.3. Perform rescue								
2.3.1. Pole top		K	P	-				
2.3.2. Manhole		K	P	_				
2.3.3. Aerial lift		K	P	-				
2.3.4. Electric Shock		K	P	_				
2.4.1. Maintenance of de-energized								
distribution system								
2.4.1.1. Over 600 volts		K	P	-				
2.4.1.2. Under 600 volts		K	P	-				
2.4.2. Maintenance of energized								
distribution system								
2.4.2.1. Over 600 volts		K	P	-				
2.4.2.2. Under 600 volts		K	P	-				
<u> </u>	•	•	•	•	•	•	•	•

Tasks, Knowledge and Technical References			ition Tas ncy Code		3.	aining		
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
2.4.3. Maintenance of equipment status boards or logs	K	P	pk	-				
2.5. Conduct safety inspections and maintain:								
2.5.1. Hot line tools	K	P	-	-				
2.5.2. Rubber personal protective equipment	K	P	-	-				
2.5.3. Protective equipment								
2.5.3.1. Polyethylene	K	-	-	-				
2.6. Perform cardiopulmonary resuscitation (CPR)	pk	-	-	-				
2.7. Conduct safety meeting/tail gate briefing		K	pk	-				
2.8. Determine PPE requirements (Arc Flash)		K	-	-				
3. AFS SPECIFIC PUBLICATIONS								
3.1. Standard publications	K	P	pk	-				
3.2. Technical orders	K	P	pk	-				
3.3. National Electrical Code (NFPA 70)	K	P	pk	-				
3.4. National Electrical Safety Code (NFPA 70E)	K	P	pk	-				
3.5. National Fire Alarm and Signaling Code (NFPA 72)	K	P	pk	-				
3.6. Electrical Safety, O&M (UFC 3-560-01)	K	P	pk	-				
3.7. Use technical publications to:								
3.7.1. Maintain		P	pk	-				
3.7.2. Operate		P	pk	-				
3.7.3. Troubleshoot		P	pk	-				
4. PLANNING AND SCHEDULING WORK TR: AFI 32-1001, AFI 32- 1032; AFMAN 32-1082, AFMAN 32- 1083; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E								
4.1. Planning job requirements								
4.1.1. Use wiring diagrams, schematics, specification sheets, drawings, staking sheets, and one line diagrams			Pk	-				
4.1.2. Determine the type and size of electrical system and material requirements								
4.1.2.1. Under 600 volts		pk	-	-				
4.1.2.2. Over 600 volts		Pk	-	-				
4.1.3. Determine proper protective		Pk	-	-				

A/H J C/WL S Tmg Tme Tmr	Tasks, Knowledge and Technical References	Duty Position Tasks and Proficiency Codes			3. Certification of Training				
devices		A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
4.1.4. Plan sequence and production priorities for work operation 4.2. Preventative Maintenance (PM) 4.2.1. Determine maintenance requirements 4.2.2. Use maintenance forms and automated products 4.2.3. Plan work assignments and priorities 5. ELECTRICAL FUNDAMENTALS TR. TO 31-141 Series; NPPA 70 Note: QTP required for UGT 5.1. Identify electrical terms and symbols 5.2. Electrical principles 5.2. LDC circuits K - -						Strt	Com	Init	Init
4.1.4. Plan sequence and production priorities for work operation 4.2. Preventative Maintenance (PM) 4.2.1. Determine maintenance requirements 4.2.2. Use maintenance forms and automated products 4.2.3. Plan work assignments and priorities 5. ELECTRICAL FUNDAMENTALS TR. TO 31-141 Series; NPPA 70 Note: QTP required for UGT 5.1. Identify electrical terms and symbols 5.2. Electrical principles 5.2. LDC circuits K - -								•	
A.2. Preventative Maintenance (PM) A.2. Preventative Maintenance (PM) A.2. Preventative Maintenance (PM) A.2. Location Pk A.2. Location A.2. Location Pk A.2 Location Pk A.2. Lo	devices								
4.2.1 Determine maintenance requirements pk - - requirements - - requirements - <td></td> <td></td> <td>pk</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>			pk	-	-				
Requirements									
A.2.2. Use maintenance forms and automated products A.2.3. Plan work assignments and priorities S. ELECTRICAL FUNDAMENTALS TR: TO 31-1-141 Series; NFPA 70 Note: QTP required for UGT S.1. Identify electrical terms and symbols S.2. Electrical principles S.2.1. DC circuits K - -			pk	-	-				
automated products 4.2.3. Plan work assignments and priorities 5. ELECTRICAL FUNDAMENTALS TR: TO 31-1-141 Series; NFPA 70 Note: QTP required for UGT Note: QTP required for UGT 5.1. Identify electrical terms and symbols K 5.2. Electrical principles S.2. Electrical principles 5.2. In DC circuits K 5.2. Construct basic electric circuits K 5.3. Construct basic electric circuits K 5.4. Compute for voltage, current, resistance, and power K 5.5. Measure electrical properties in circuits and components K 5.6. Transformer theory K 5.7. Compute load balance K 5.8. Fundamentals of electrical systems from primary generation to load K 6. SUBSTATION EQUIPMENT TR: AFI 32-1064, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Calbenan's Handbook; NFPA 70, NFPA 70. NFPA 70E 6.1. Fundamentals K - 6.1.1. Recloser K - 6.1.2. Circuit breakers K - 6.1.3. Potential transformers K - 6.1.4. Current transformers K - 6.1.5. Protective relays K <td></td> <td></td> <td>Pk</td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td>			Pk	_	_				
P -									
5. ELECTRICAL FUNDAMENTALS TR: TO 31-1-141 Series; NFPA 70 Note: QTP required for UGT S.1. Identify electrical terms and symbols 5.2. Electrical principles K 5.2. Electrical principles S.2. Electrical principles 5.2. Electrical principles S.2. Electrical principles 5.2. Lo circuits K 5.2. Construct basic electric circuits K K pk 5.3. Construct basic electric circuits K K pk 5.4. Compute for voltage, current, resistance, and power K 5.5. Measure electrical properties in circuits and components K 5.6. Transformer theory K K pk 5.7. Compute load balance K K pk 5.8. Fundamentals of electrical systems from primary generation to load K 6. SUBSTATION EQUIPMENT RR. 41 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1.1. Recloser K - 6.1.2. Circuit breakers K - 6.1.3. Potential transformers K -	4.2.3. Plan work assignments and			P	-				
TR: TO 31-1-141 Series; NFPA 70 Note: QTP required for UGT									
5.1. Identify electrical terms and symbols K -<	TR: TO 31-1-141 Series; NFPA 70								
symbols 5.2. Electrical principles 5.2.1. DC circuits K - <td< td=""><td></td><td>K</td><td>_</td><td>_</td><td>_</td><td></td><td></td><td></td><td></td></td<>		K	_	_	_				
5.2. Electrical principles K - </td <td></td> <td>14</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		14							
5.2.1. DC circuits K - - - 5.2.2. AC circuits K - - - 5.3. Construct basic electric circuits K pk - - 5.4. Compute for voltage, current, resistance, and power K pk - - 5.5. Measure electrical properties in circuits and components K pk - - 5.6. Transformer theory K pk - - - 5.7. Compute load balance K pk -									
5.3. Construct basic electric circuits K pk - - 5.4. Compute for voltage, current, resistance, and power K Pk - - 5.5. Measure electrical properties in circuits and components K pk - - 5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E -		K	-	-	-				
5.4. Compute for voltage, current, resistance, and power K Pk - - 5.5. Measure electrical properties in circuits and components K pk - - 5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E - - 6.1. Fundamentals K - - - 6.1. Recloser K - - - 6.1. Recloser K - - - - 6.1. Rocloser K - <t< td=""><td>5.2.2. AC circuits</td><td>K</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td></td><td></td></t<>	5.2.2. AC circuits	K	-	-	-				
5.4. Compute for voltage, current, resistance, and power K Pk - - 5.5. Measure electrical properties in circuits and components K pk - - 5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E -	5.3. Construct basic electric circuits	K	pk	-	-				
resistance, and power K pk - - 5.5. Measure electrical properties in circuits and components K pk - - 5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI F - - 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70. NFPA 70E NFPA 70. NFPA 70E - - 6.1. Fundamentals K - - - - 6.1. Fundamentals K - - - - 6.1. Fundamentals K - - - - - - - - - - - - - - - - - -	5.4. Compute for voltage, current,	K		-	-				
circuits and components K pk - - 5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E - - 6.1. Fundamentals K - - - 6.1.1. Recloser K - - - 6.1.2. Circuit breakers K - - - 6.1.3. Potential transformers K - - - 6.1.4. Current transformers K - - - 6.1.5. Protective relays K - - - 6.1.7. Insulating mediums K - - - 6.1.7.1. Air K - - -	resistance, and power								
5.6. Transformer theory K pk - - 5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E - - 6.1. Fundamentals K - - - 6.1.2. Circuit breakers K - - - 6.1.3. Potential transformers K - - - 6.1.4. Current transformers K - - - 6.1.5. Protective relays K - - - 6.1.7. Insulating mediums K - - - 6.1.7.1. Air K - - -		K	pk	-	-				
5.7. Compute load balance K pk - - 5.8. Fundamentals of electrical systems from primary generation to load K pk - 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E - - 6.1. Fundamentals K - - 6.1.2. Circuit breakers K - - 6.1.3. Potential transformers K - - 6.1.4. Current transformers K - - 6.1.5. Protective relays K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -		V	nk						
5.8. Fundamentals of electrical systems from primary generation to load 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser 6.1.2. Circuit breakers 6.1.3. Potential transformers K - 6.1.4. Current transformers K - 6.1.5. Protective relays K - 6.1.6. Voltage regulators 6.1.7. Insulating mediums 6.1.7.1. Air								1	
from primary generation to load 6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser K 6.1.2. Circuit breakers K 6.1.3. Potential transformers K 6.1.4. Current transformers K 6.1.5. Protective relays K 6.1.6. Voltage regulators K 6.1.7. Insulating mediums 6.1.7.1. Air K	_	K			-				
6. SUBSTATION EQUIPMENT TR: AFI 32-1062, AFI 32-1064, AFI 91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser K - 6.1.2. Circuit breakers K - 6.1.3. Potential transformers K - 6.1.4. Current transformers K - 6.1.5. Protective relays K - 6.1.6. Voltage regulators K - 6.1.7. Insulating mediums 6.1.7.1. Air K			K	рк	-				
91-203, AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser K 6.1.2. Circuit breakers K 6.1.3. Potential transformers K 6.1.4. Current transformers K 6.1.5. Protective relays K 6.1.6. Voltage regulators K 6.1.7. Insulating mediums 6.1.7.1. Air	6. SUBSTATION EQUIPMENT								
AFMAN 32-1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser K 6.1.2. Circuit breakers K 6.1.3. Potential transformers K 6.1.4. Current transformers K 6.1.5. Protective relays K 6.1.6. Voltage regulators K 6.1.7. Insulating mediums 6.1.7.1. Air K									
Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E 6.1. Fundamentals 6.1.1. Recloser 6.1.1. Recloser K 6.1.2. Circuit breakers K 6.1.3. Potential transformers K 6.1.4. Current transformers K 6.1.5. Protective relays K 6.1.6. Voltage regulators K 6.1.7. Insulating mediums K 6.1.7.1. Air K	AFMAN 32-1082; UFC 3-550-01,								
6.1. Fundamentals K - - 6.1.1. Recloser K - - 6.1.2. Circuit breakers K - - 6.1.3. Potential transformers K - - 6.1.4. Current transformers K - - 6.1.5. Protective relays K - - 6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - -	Lineman's and Cableman's Handbook;								
6.1.2. Circuit breakers K - - 6.1.3. Potential transformers K - - 6.1.4. Current transformers K - - 6.1.5. Protective relays K - - 6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -									
6.1.3. Potential transformers K - - 6.1.4. Current transformers K - - 6.1.5. Protective relays K - - 6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -	6.1.1. Recloser		K	-	-				
6.1.4. Current transformers K - - 6.1.5. Protective relays K - - 6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -	6.1.2. Circuit breakers		K	-	-				
6.1.5. Protective relays K - - 6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -	6.1.3. Potential transformers		K	-	-				
6.1.6. Voltage regulators K - - 6.1.7. Insulating mediums K - - 6.1.7.1. Air K - -	6.1.4. Current transformers		K	-	-				
6.1.7. Insulating mediums 6.1.7.1. Air K	6.1.5. Protective relays		K	-	-				
6.1.7.1. Air K	6.1.6. Voltage regulators		K	-	-				
	6.1.7. Insulating mediums								
6.1.7.2. Oil K	6.1.7.1. Air		K	-	-				
V-2	6.1.7.2. Oil		K	-	-			1	

Tasks, Knowledge and Technical References			ition Tas ency Code		3. Certification of Train			
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
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6.1.7.3. Vacuum		K	-	-				
6.1.7.4. Gas		K	-	-				
6.1.8. Capacitor banks		K	-	-				
6.1.9. Battery banks		K	-	-				
6.2. Install								
6.2.1. Potential transformers		P	-	-				
6.2.2. Current transformers		P	-	-				
6.3. Perform recurring maintenance (PM)								
6.3.1. Recloser		P	-	-				
6.3.2. Circuit breakers		P	-	-				
6.3.3. Power transformers		P	-	-				
6.3.4. Protective relays		P	-	-				
6.3.5. Voltage regulators		P	-	-				
6.4. Troubleshoot substation equipment		P	-	-				
7. OVERHEAD DISTRIBUTION SYSTEMS TR: AFIS 32-1062, AFI 32-1064, AFI 91-203; AFMAN 32- 1082; UFC 3-550-01, UFC 3-560-01; Lineman's and Cableman's Handbook; NFPA 70, NFPA 70E Note 1: QTP required for UGT Note 2: Climbing wooden poles using Gaffs is a base specific core task. 7.1. Climb wooden poles								
7.1.1. Using gaffs	K	P	pk	_				
7.1.2. Working on pole components	K	P	Pk	_				
7.1.3. Traversing obstacles	K	P	- 11					
7.2. Handle poles		-						
7.2.1. Load/Unload poles	K	P	pk	-				
7.2.2. Transport poles	K	P	pk	_	1			
7.2.3. Frame poles	K	P	pk	_				
7.2.4. Set utility poles	IX	P	pk	_				
7.2.4. Set utility poles 7.3. Install		r	PK	_				
7.3.1. Guys	K	P	pk	-				
7.3.2. Overhead line conductors	K	P		_	1			
7.3.3. Anchors	K	P	pk	-	-			
	V	r	pk	-				
7.3.4. Pole equipment		ъ	1					
7.3.4.1. Conductor support devices		P	pk	-				
7.3.4.2. Transformers		P	pk	-				

Tasks, Knowledge and Technical References			ition Tas ncy Code		3. Certification of Training				
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr	
					Strt	Com	Init	Init	
72.42 Day of a 1-2		D	1	ı		<u> </u>	1 1		
7.3.4.3. Protective devices		P	pk	-					
7.3.5. High voltage switches		P	pk	-					
7.3.6. Armor rod	K	P	pk	-					
7.3.7. Grounding set	K	P	pk	-					
7.3.8. Services									
7.3.8.1. Drop	K	P	pk	-					
7.3.8.2. Laterals	K	P	pk	-					
7.4. Inspect poles	K	P	pk	-					
7.5. Perform di-electric test of oil		P	pk	-					
7.6. Perform recurring maintenance on		P	pk	-					
overhead distribution equipment			1						
7.7. Isolate system faults		P	pk	-					
7.8. Splice de-energized overhead conductor	K	P	pk	-					
7.9. Splice energized overhead conductor		P	pk	-					
7.10. Replace conductor support on		P	pk	-					
energized conductors			1						
7.11. Replace conductor support on de-		P	pk	-					
energized conductors 7.12. Transfer de-energized conductors		P	nle						
from old pole to new pole		r	pk	-					
7.13. Transfer energized conductors		P	pk	-					
from old pole to new pole									
7.14. Perform transformer connections		P	pk	-					
7.15. Troubleshoot pole mount transformer		P	pk	-					
8. UNDERGROUND DISTRIBUTION SYSTEMS TR: AFI 32-1063, 32-1064, 91-203; AFMAN 32- 1082; Lineman's and									
Cableman's Handbook; NFPA 70, NFPA 70E; UFC 3-560-01 Note: QTP required for UGT 8.1. Install									
8.1.1. Direct burial cable		P	pk	-					
8.1.2. Underground duct systems		P	pk	_					
8.1.3. Underground cable in duct		P	pk	-					
8.1.4. Transformers			F -						
8.1.4.1. On pads		P	pk	-					
8.1.4.2. In vaults		P	pk	_					
8.1.5. Grounding set	K	P	pk	_					
8.2. Splice high voltage underground cable	K	r	ρĸ	-					

Tasks, Knowledge and Technical References	Duty Position Tasks and Proficiency Codes			3. Certification of Training				
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
8.2.1. Using tape	K	P	pk	_	1	1	<u> </u>	
8.2.2. Using pre-form kits	K	P	pk	_				
	K		-	-				
8.3. Terminate high voltage underground cable		P	pk	-				
8.4. Inspect								
8.4.1. Terminations		P	pk	-				
8.4.2. Underground splices		P	pk	-				
8.5. Perform high potential DC test on		P	pk	-				
underground cable								
8.6. Troubleshoot underground cables for faults		P	pk	-				
8.7. Trace underground cables with		P	pk	_				
cable test set			r					
8.8. Isolate system faults		P	pk	-				
8.9. Fabricate load break elbow		P	pk	-				
8.10. Troubleshoot pad mount transformer		P	pk	-				
8.11. Construct distribution systems		P	pk	-				
9. DISTRIBUTION SYSTEMS, 600 VOLTS AND LESS TR: AFI 32-1062, AFI 32-1064, AFI 91-203; AFMAN 32-1083; NFPA 70, NFPA 70E; UFC 3-530-01, UFC 3- 570-06, UFC 3-570-02A Note: QTP required for UGT								
9.1. Install								
9.1.1. Service entrance		P	pk	-				
9.1.2. Service equipment								
9.1.2.1. Meter base		P	pk	-				
9.1.2.2. Disconnect		P	pk	-				
9.1.3. Grounding								
9.1.3.1. System		P	pk	-				
9.1.3.2. Equipment		P	pk	-				
9.1.3.3. Bonding		P	pk	-				
9.1.3.4. Feeders		P	pk	-				
9.1.3.5. Distribution panels	1	P	pk	-				
9.1.3. 6. Branch circuits	1	P	pk	-				
9.1.4. Devices								
9.1.4.1. Switches		P	pk	-				
9.1.4.2. Receptacles	†	P	pk	-				
9.1.5. Fault protection			_					

Tasks, Knowledge and Technical References	Duty Position Tasks and Proficiency Codes			3.	Certification of Training			
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
9.1.5.1. Ground fault circuit interrupter (GFCI)								
9.1.5.1.1. Receptacle		P	pk	-				
9.1.5.1.2. Breaker		P	pk	-				
9.1.5.2. Arc fault circuit interrupter (AFCI)		P	pk	-				
9.1.6. Wiring methods								
9.1.6.1. Nonmetallic sheathed cable	K	P	pk	-				
9.1.6.2. Surface raceway	K	P	pk	-				
9.1.6.3. Conduit:								
9.1.6.3.1. Rigid metal	K	P	pk	-				
9.1.6.3.2. Electrical metallic tubing (EMT)	K	P	pk	-				
9.1.6.3.3. Flexible metal	K	P	pk	-				
9.1.7. Electrical systems in hazardous locations		P	pk	-				
9.1.8. Dry transformers		P	pk	-				
9.1.9. Overcurrent protection devices	K	P	pk	-				
9.1.10. Luminaries	K	P	pk	-				
9.2. Distribution systems								
9.2.1. Maintain		P	pk	-				
9.2.2. Troubleshoot		P	pk	-				
9.3. Read service meters	K	P	pk	-				
9.4. Maintain transformers		P	pk	-				
9.5. Electrical systems in hazardous locations								
9.5.1. Maintain		P	pk	-				
9.5.2. Troubleshoot		P	pk	-				
9.6. Electrical appliances								
9.6.1. Principles	K	-	-	-				
9.6.2. Install		P	pk	-				
9.6.3. Maintain		P	pk	-				
9.6.4. Troubleshoot		P	pk	-				
9.7. Cathodic Protection								
9.7.1. Principles	K	-	-	-				
9.7.2. Maintain		P	pk	-				
9.7.3. Troubleshoot		P	pk	-				
10. AIRFIELD LIGHTING SYSTEMS TR: AFI 32-1044; UFC 3-535-01; TO 35F5-3-12-1, TO 35F5-4-2-1								

Tasks, Knowledge and Technical References			ition Tas ncy Cod		3. Certification of Training			
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
10.1. Airfield lighting system configuration	K	-	-	-				
10.2. Replace								
10.2.1. Airfield lighting systems components		P	pk	-				
10.2.2. Condenser discharge components		P	pk	-				
10.2.3. Rotating beacon components		P	pk	-				
10.2.4. Airfield fixture lamps		P	pk	-				
10.2.5. Isolating (IL) transformers		P	pk	-				
10.3. Maintain airfield lighting systems								
10.3.1. Constant current regulator		P	pk	-				
10.3.2. Control components		P	pk	-				
10.3.3. Counterpoise components		P	pk	_				
10.3.4. Fixtures		P	pk	_				
10.3.5. Airport beacon		P	pk	_				
10.3.6. Obstruction lights	K	P	pk	_				
10.3.7. Condenser discharge light unit		P	pk	_				
10.3.8. Master sequence control timer		P	pk	-				
unit								
10.3.9. Approach path indicators		P	pk	-				
10.4. Isolate airfield lighting circuits or equipment		P	pk	-				
10.5. Test airfield lighting cable		P	pk	-				
10.6. Inspect								
10.6.1. Airfield beacon		P	pk	-				
10.6.2. Obstruction lights	K	P	pk	-				
10.7. Connect airfield lighting constant current regulator for emergency operation		P	pk	-				
10.8. Troubleshoot								
10.8.1. Airfield lighting circuits		P	pk	-				
10.8.2. Airfield lighting control circuits		P	pk	-				
10.8.3. Condenser discharge light unit		P	pk	-				
10.9. Repair airfield lighting cable								
10.9.1. Use connector splice kit		P	pk	-				
10.9.2. Use resin splice kit		P	pk	-				
10.10. Identify airdrome signals		P	pk	-				
10.11. Use radios		P	pk	_				

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Tasks, Knowledge and Technical References			ition Tas ncy Code		3. (Certificati	ion of Tra	aining
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
			•	_				
11. LIGHTING SYSTEMS (STREET,FACILITY, SECURITY, RECREATIONAL) TR: AFMAN 32-1082; Lineman's and Cableman's Handbook; NFPA 70								
11.1 . Install								
11.1.1. High intensity discharge (HID) light fixtures		P	pk	-				
11.1.2. LED fixtures		P	pk	-				
11.1.3. Lighting control components		P	pk	-				
11.1.4. Quartz fixtures		P	pk					
11.2. Adjust								
11.2.1. Controls		P	pk	-				
11.2.2. Fixtures		P	pk	-				
11.3. Relamp lighting system		P	pk	-				
11.4. Troubleshoot lighting systems		P	pk	-				
12. MOTORS AND MOTOR CONTROL CIRCUITS TR: AFMAN 32-1083; AFI 32-1063; NFPA 70 Note: QTP required for UGT								
12.1. Install								
12.1.1. Motors		P	pk	-				
12.1.2. Motor control circuits		P	pk	-				
12.2. Maintain								
12.2.1. Motors		P	pk	-				
12.2.2. Motor control circuits		P	pk	-				
12.3. Troubleshoot								
12.3.1. Motors		P	pk	-				
12.3.2. Motor control circuits								
12.3.2.1. Across-the-line starters		P	pk	-				
12.3.2.2. Reduced voltage starters								
12.3.2.2.2. Auto transformer		P	pk	-				
12.3.2.2.3. Resistor		P	pk	-				

P

P

P

pk

pk

pk

12.3.2.3. Solid state

12.3.2.4. Reversing starters

12.3.2.5. Frequency drive

Tasks, Knowledge and Technical References	Duty Position Tasks and Proficiency Codes			3. Certification of Training				
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init

	I .					
13. ELECTRICAL GROUND SYSTEMS TR: AFI 32-1065; NFPA 70; NFPA 77;						
NFPA 780; UFC 3-520-01, UFC 3-560-01, UFC 3-575-01, UFC 3-580-01; IEEE Standard 142 -						
Recommended Practice for Grounding of Industrial and Commercial Power Systems						
13.1. Principles						
13.1.1. Primary distribution system		K	-	-		
grounds						
13.1.2. Facility subsystem grounds		K	-	-		
13.1.3. Lightning protection systems	K	-	pk	-		
13.1.4. Static grounds		K	-	-		
13.1.5. Communication network system grounds		K	-	-		
13.1.6. Bonding		K	-	-		
13.1.7. Fuels facilities grounds		K	-	-		
13.1.8. Weapons Storage Area grounds	K	-	-	-		
13.1.9. Communications facilities grounds		K	-	-		
13.2. Install						
13.2.1. Primary distribution system grounds		P	pk	-		
13.2.2. Facility subsystem grounds		P	-	-		
13.2.3. Lightning protection system			P	pk		
13.2.4. Communication network system grounds		P	-	-		
13.2.5. Bonding		P	-	-		
13.2.6. Static grounds		P	-	-		
13.3. Maintain						
13.3.1. Lightning protection system			P	pk		
13.3.2. Primary distribution system grounds		P	-	-		
13.3.3. Facility subsystem grounds		P	-	-		
13.4. Test						
13.4.1. Lightning protection systems			P	pk		
13.4.2. Primary distribution system grounds		P	pk	-		
13.4.3. Facility subsystem grounds		P	pk	-		
13.4.4. Communication network system grounds		P	pk	-		
13.4.5. Static grounds		P	pk	-		

Tasks, Knowledge and Technical References			ition Tas ncy Code		3.	Certificati	ion of Tr	aining
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
13.4.6. Fuels facilities grounds		P	pk	-				
13.4.7. Weapons Storage Area grounds		P	pk	-				
13.4.8. Communications facilities grounds		P	pk	-				
13.5. Troubleshoot								
13.5.1. Primary distribution system grounds		P	pk	-				
13.5.2. Facility subsystem grounds		P	pk	-				
13.5.3. Communication network system grounds		P	pk	-				
13.5.4. Lightning protection			P	pk				
13.6. Determine Corrective Actions			P	pk				
14. LIFE SAFETY SYSTEMS TR: NFPA 70, NFPA 72, NFPA 101; AFI 32-2001, AFI 91-203; AFMAN 32-1083; UFC 3-600-1, UFC 3-601-02								
14.1. Principles								
14.1.1. Fire alarm systems		K	-	-				
14.1.2. Emergency lighting systems	K	-	-	-				
14.1.3. Mass Notification Systems (MNS)		K	-	-				
14.2. Install								
14.2.1. Fire alarm systems		P	pk	-				
14.2.2. Emergency lighting systems		P	pk	-				
14.2.3. Mass Notification Systems (MNS)		P	pk	-				
14.3. Maintain								
14.3.1. Fire alarm systems		P	pk	-				
14.3.2. Emergency lighting systems		P	pk	-				
14.3.3. Mass Notification Systems (MNS)		P	pk	-				
14.4. Troubleshoot								
14.4.1. Fire alarm systems		P	pk	-				
14.4.2. Emergency lighting systems		P	pk	-				
14.4.3. Mass Notification Systems (MNS)		P	pk	-				
15. TOOLS AND EQUIPMENT TR: AFI 24-301, AFI 32-1064; NFPA 70E; TOs 32-1-2 Note: QTP required for UGT								
15.1. Maintain								
15.1.1. Pole trailer		P	pk	-				

Tasks, Knowledge and Technical References			ition Tas ncy Code		3. Certification of Training				
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr	
					Strt	Com	Init	Init	
		•							
15.1.2. Reel jacks		P	pk	-					
15.1.3. Cable pulling guide		P	-	-					
15.1.4. Handline		P	-	-					
15.1.5. Block and tackle		P	-	-					
15.1.6. Chain hoist		P	-	-					
15.1.7. Climbing equipment		P	-	-					
15.2. Use electricians' hand tools	K	P	pk	-					
15.3. Use portable power tools	K	P	pk	-					
15.4. Use test equipment									
15.4.1. Multimeter	K	P	pk	-					
15.4.2. Clamp-on ammeter	K	P	pk	-					
15.4.3. Phase rotation meter	K	-	-	-					
15.4.4. Megohmmeter	K	-	-	-					
15.4.5. Circuit breaker tester	K	-	-	-					
15.4.6. Tachometer	K	-	-	-					
15.4.7. Frequency meter	K	-	-	-					
15.4.8. Cathodic protection set	K	-	-	-					
15.4.9. Recording meters	K	-	-	-					
15.4.10. Circuit tracer	K	-	-	-					
15.4.11. Infrared scanner	K	-	-	-					
15.4.12. Gas detector	K	-	-	-					
15.4.13 . Hot stick tester	K	-	-	-					
15.4.14. High voltage phase tester	K	-	-	-					
15.4.15. Relay tester	K	-	-	-					
15.4.16. Earth resistance tester	K	-	-	-					
15.4.17. Cable fault locator, low voltage	K	-	-	-					
15.4.18. Cable locator	K	-	-	-					
15.4.20. High voltage audible indicator	K	-	-	-					
15.5. Perform operators maintenance		P	pk	-					
on aerial lift truck with insulated									
15.6. Perform operators maintenance on line maintenance truck		P	pk	-					
15.7. Operate aerial lift truck controls		P	pk	-					
15.8. Operate line maintenance truck		P	pk	-					
controls 15.9. Use hand signals to direct line maintenance		P	pk	-					
truck operation									

Tasks, Knowledge and Technical References			ition Tas ncy Code		3.	Certificat	ion of Tr	aining
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
15.10. Di-electrically test aerial lift trucks		P	pk	-				
15.11. Di-electrically test line maintenance trucks		P	pk	-				
15.12. Operate other aerial lift equipment		P	pk	-				
15.13. Use conduit benders								
15.13.1. Manual	P	pk	-	-				
15.13.2. Hydraulic	P	pk	-	-				
15.13.3. Electric	P	pk	-	-				
15.14. Use manual conduit threaders	P	pk	-	-				
15.15. Use power conduit threaders	P	pk	-	-				
15.16. Use soldering equipment	P	pk	-	-				
15.17. Use hydraulic knockout	P	pk	-	-				
16. FOREIGN ELECTRICAL SYSTEMS TR: UFC 3-510-01								
16.1. Electrical terms and systems	K	-	-	-				
16.2. Electrical distribution systems								
16.2.1. Voltages	K	-	-	-				
16.2.2. Wiring color code	K	-	-	-				
16.2.3. Wire sizes	K	-	-	-				
16.2.4. Installation	K	-	-	-				
16.2.5. Wire or cable types	K	-	-	-				
16.3. Distribution panels	K	-	-	-				
16.4. Protective devices	K	-	-	-				
17. AFSC SPECIFIC EXPEDITIONARY RESPONSIBILITIES TR: AFI 10-209, AFI 10-210, AFI 10- 211; WMP-1 CE Supp; AFPAM 10- 219 Vol 2, 3, & 4								
17.1. Emergency Airfield Lighting System (EALS) TR: 35F5-3-17-1 Note: QTP required for UGT 17.1.1. Install								
17.1.1. Approach		P	pk	-				
17.1.1.2. Strobes		P	pk	-				
17.1.1.3. Runway		P	pk	_				
17.1.1.4. PAPI		P	pk	-				
17.1.1.5. Taxiway		P	pk	_				
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Tasks, Knowledge and Technical References			ition Tas ncy Code		3. Certification of Training			
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
17.1.1.6. Distance to go (DTG)		P	pk	-				
17.1.1.7. Regulator		P	pk	-				
17.1.1.8. Generator		P	pk	-				
17.1.1.9. Obstruction lights		P	pk	-				
17.1.2. Operate								
17.1.2.1. Regulator		P	pk	-				
17.1.2.2. Generator		P	pk	-				
17.1.2.3. Obstruction lights		P	pk	-				
17.1.3. Maintain								
17.1.3.1. Approach / Strobes		P	pk	-				
17.1.3.2. Runway		P	pk	-				
17.1.3.3. PAPI		P	pk	-				
17.1.3.4. Taxiway		P	pk	-				
17.1.3.5. Distance to go (DTG)		P	pk	-				
17.1.3.6. Regulator		P	pk	_				
17.1.3.7. Generator		P	pk	-				
17.1.3.8. Obstruction lights		P	pk	_				
17.1.4. Troubleshoot			1					
17.1.4.1. Approach / Strobes		P	pk	-				
17.1.4.2. PAPI		P	pk	-				
17.1.4.3. Regulator		P	pk	-				
17.1.4.4. Generator		P	pk	-				
17.1.5.1. Install		P	pk	-				
17.1.5.2. Troubleshoot		P	pk	-				
17.2. Electrical distribution system			-					
17.2.1. Primary distribution system								
17.2.1.1. Install			1					
17.2.1.1.1.1. Power source		P	pk	-				
17.2.1.1.1.2. Primary Distribution Center (PDC)		P	pk	-				
17.2.1.1.1.3. Secondary Distribution Center High Voltage (SDC-HV) section		P	pk	-				
17.2.1.1.4. High voltage cable		P	pk	-				
17.2.1.1.5. Primary Switching Center		P	pk	-				
(PSC) 17.2.1.2. Operate								
17.2.1.2.1. Power source		P	pk	-				
17.2.1.2.2. PDC		P	pk	-				
17.2.1.2.3. SDC-HV section		P	pk	-				
			P.					

Tasks, Knowledge and Technical References		Duty Position Tasks and Proficiency Codes			3.	Certificati	ion of Tra	aining
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init
			_					
17.2.1.2.4. PSC		P	pk	-				
17.2.1.3. Maintain								
17.2.1.3.1. PDC		P	pk	-				
17.2.1.3.2. SDC-HV section		P	pk	-				
17.2.1.3.3. PSC		P	pk	-				
17.2.1.4. Troubleshoot								
17.2.1.4.1. PDC		P	pk	-				
17.2.1.4.2. SDC-HV section		P	pk	-				
17.2.1.4.3. PSC		P	pk	-				
17.2.1.4.4. Isolate, block and tag equipment		P	pk	-				
17.2.1.5. Secondary distribution system TR: 35CA2-2-10-1, 35CA6-1-101								
17.2.1.5.1. Install								
17.2.1.5.1.1. Power source		P	pk	-				
17.2.1.5.2.1.2. Secondary Distribution Center Low Voltage (SDC-LV) section		P	pk	-				
17.2.1.5.2.1.3. Power Distribution Panel (PDP)		P	pk	-				
17.2.1.5.2.1.4. Low Voltage (LV) cables		P	pk	-				
17.2.1.5.2.2. Operate								
17.2.1.5.2.2.1. Power source		P	pk	-				
17.2.1.5.2.2. SDC-LV section		P	pk	-				
17.2.1.5.2.2.3. PDP		P	pk	-				
17.2.1.5.2.3. Maintain								
17.2.1.5.2.3.1. SDC-LV section		P	pk	-				
17.2.1.5.2.3.2. PDP		P	pk	-				
17.2.1.5.2.4. Troubleshoot								
17.2.1.56.2.4.1. SDC-LV section		P	pk	-				
17.2.1.5.2.4.2. PDP		P	pk	-				
17.2.1.5.2.4.3. LV cables		P	pk	-				
17.2.1.5.3. Grounding methods		P	pk	-				
17.2.1.5.4. Plan distribution system		P	pk	-				
18. AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM TR: AFI 91-203, AFI 91-202, AFI 91- 204								
18.1. Hazardous materials waste handling	K	-	-	-				
18.2. Lead-based paint (LBP) hazard	K	-	-	-				
18.3. Asbestos awareness	K	-	-	-				

Tasks, Knowledge and Technical References	Duty Position Tasks and Proficiency Codes				3. Certification of Training			
	A/H	J	C/WL	S	Trng	Trng	Trne	Trnr
					Strt	Com	Init	Init

19. AFSC SPECIFIC PUBLICATIONS TR: T.O. 00-5-1						
19.1. Technical Order system	K	P	pk	-		
19.2. Use technical orders	K	P	pk	-		
19.3. Technical order improvement reporting		P	pk	-		
19.4. Acquire technical orders		P	pk	-		
19.5. AFSC Technical Publications		K	pk	-		
20. CIVILIAN SUPERVISION REQUIREMENTS						
20.1. Civilian Supervisor Course				X		
20.2. WMGT 571 Course				X		
ANY ADDITIONAL REQUIREMENTS CAN BE ADDED HERE						

Locally Developed Training Supplement