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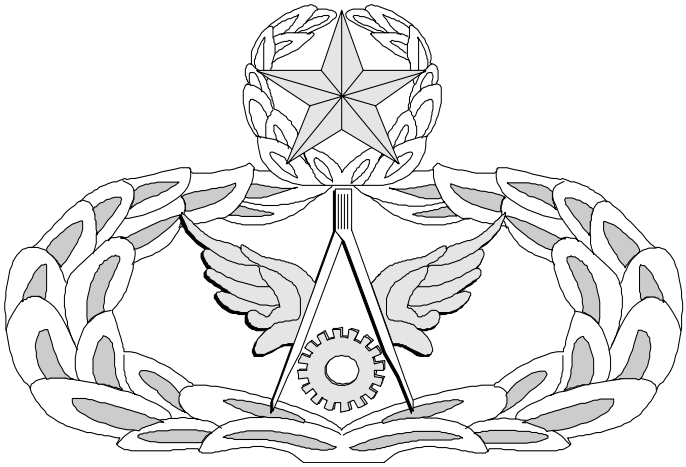
ELECTRICAL SYSTEMS



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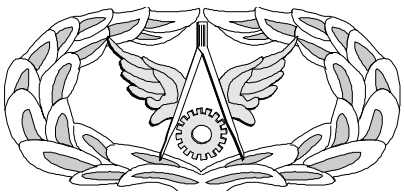

BASIC

SENIOR

CAREER FIELD
EDUCATION AND TRAINING PLAN

CAREER FIELD EDUCATION AND TRAINING PLAN
ELECTRICAL SYSTEMS SPECIALTY
3E0X1

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PREFACE

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements, training support resources, and minimum core task requirements for this specialty. The CFETP will provide personnel a clear career path to success and instill rigor in all aspects of career field training.

2. The CFETP consists of two parts used by supervisors to plan, manage, and control training within the career field.

2.1. Part I provides information necessary for overall management of the specialty.

2.1.1. Section A provides general information about how the CFETP will be used.

2.1.2. Section B identifies career field progression information, duties and responsibilities, training strategies, and career field path.

2.1.3. Section C associates each skill level with specialty qualifications (knowledge, education, and training).

2.1.4. Section D indicates resource constraints.

2.1.5. Section E identifies transition training guide requirements for SSgt through MSgt.

2.2. Part II includes the following:

2.2.1. Section A identifies the Specialty Training Standard (STS) to include duties, tasks, and technical references to support Air Education and Training Command (AETC)-conducted training, wartime course, and correspondence course requirements.

2.2.2. Section B contains the course objective list and training standards supervisors will use to determine if airmen satisfy training requirements.

2.2.3. Section C identifies available support materials. Air Force Qualification Training Packages (AFQTPs) and CerTests support both Upgrade Training (UGT) and qualification training.

2.2.4. Section D 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.

2.2.5. Section E identifies MAJCOM-unique training requirements supervisors can use to determine additional training required for the associated qualification needs.

2.2.6. Section F identifies home station training references and courses material required for this specialty in support of contingency/wartime training.

3. Using guidance provided in the CFETP will ensure individuals in this specialty 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 unit level, supervisors and trainers will 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.

Advanced Training (AT). A formal course which provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career airmen at the advanced level of the AFS.

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

Air Force Job Qualification Standard/Command Job Qualification Standard (AFJQS/CJQS). A comprehensive task list that describes a particular job type or duty position. Used by supervisors to document task qualifications. The tasks on the AFJQS/CJQS are common to all persons serving in the described duty position.

Air Force Qualification Training Package (AFQTP). An instructional package designed for use at the unit 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, or in other audiovisual media.

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

Certification and Testing (CerTest). A multi-media evaluation program used to test an individual's knowledge of principles and procedures in their career field.

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.

Continuation Training. Additional training exceeding requirements with emphasis on present and future duty assignments.

Core Task. A task Air Force Career Field Managers (AFCFMs) identified as a minimum qualification requirement within an Air Force specialty or duty position. These tasks exemplify the essence of the career field.

Course Objective List (COL). A publication derived from initial/advanced skills course training standard, identifying the tasks and knowledge requirements, and respective standards provided to achieve a 3-, 5-, and 7-skill level in this career field. Supervisors use the COL to assist in conducting graduate evaluations in accordance with AFI 36-2201, Developing, Managing, and Conducting Training.

Critical Task. Tasks that have been identified by the work center supervisor as having a detrimental effect on mission accomplishment if not performed correctly. Critical tasks may or may not be the same as core tasks but are mandatory if identified as 'critical' to the individual's position by the supervisor or work center.

Diamond Tasks (♦). Diamond tasks are extremely important to the career field. Diamond tasks are the same as core tasks with one exception--equipment shortfalls at most locations have created problems with the actual hands-on certification of these tasks. In instances where required equipment is not available for instruction, completion of the task's AFQTP and passing the corresponding CerTest is all that is required for upgrade and qualification training. Hands-on certification should be accomplished at the first opportunity when equipment is available.

Distance Learning (DL). Includes Video Teleseminar (VTS), Video Teletraining (VTT), and Computer-Based Training (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 Task. The tasks assigned to an individual for the position currently held. These include as a minimum all core tasks, critical tasks, and any other tasks assigned by the supervisor.

Enlisted Specialty Training (EST). A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade airmen in each skill level of a specialty.

Exportable Training. Additional training via computer-assisted, paper text, interactive video, or other necessary means to supplement training.

Field Technical Training (Type 4). Special or regular on-site training conducted by a Field Training Detachment (FTD) or by a Mobile Training Team (MTT).

Initial Skills Training. AFS-specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Normally, this training is conducted by AETC at one of the technical training wings.

Instructional System Development (ISD). A deliberate and orderly, but flexible, process for planning, developing, implementing, and managing instructional systems. It ensures personnel are taught in a cost-efficient way the knowledge, skills, and attitudes essential for successful job performance.

Mission Ready Airmen (MRA) Training. Initial skills training allowing airmen to perform select tasks unsupervised equal to 3-levels with one year of experience.

Occupational Survey Report (OSR). A detailed report showing the results of an occupational survey of tasks performed within a particular AFS.

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

Optimal Training. The ideal combination of training settings resulting in the highest levels of proficiency on specified performance requirements within the minimum time possible.

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

Qualification Training (QT). Actual hands-on task performance training designed to qualify an individual in a specific duty position. This portion of the dual channel on-the-job training program occurs both during and after the upgrade training process. It is designed to provide the performance skills required to do the job.

Readiness Training Package (RTP). Establishes standard levels of knowledge and proficiency for common Disaster Preparedness and Readiness subject areas by providing instructors with training references, materials, and lesson objectives used in teaching and evaluating the course subject matter.

Representative Sites. Typical organizational units having similar missions, weapon systems or equipment, or a set of jobs, used as a basis for estimating average training capacities and costs within the Training Impact Decision System (TIDES).

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

Skills Training. A formal course resulting in the award of a skill level.

Specialty Training. A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade airmen in the award of a skill level.

Specialty Training Standard (STS). Describes skills and knowledge that airmen in a particular AFS need on the job. It further serves as a contract between the Air Education and Training Command (AETC) and the user to show the overall training requirements for an AFS taught in the resident and nonresident courses.

Spin-up Training. Training required just prior to a select deployment that delivers training necessary for mission accomplishment. It is typically predicated on hard to attain contingency skills.

Standard. An exact value, a physical entity, or an abstract concept, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, establishing practices or procedures, or evaluating results;. a fixed quantity or quality.

Supplemental Training. Training for a portion of an AFS without a change in AFSC. Formal training on new equipment, methods, and technology that are not suited for on-the-job training.

Total Force. All collective Air Force components (active duty, Reserve, Guard, and civilian elements) of the United States Air Force.

Training Capacity. The capability of a training setting to provide training on specified requirements, based on the availability of resources.

Training Impact Decision System (TIDES). A computer-based decision support technology designed to assist Air Force Career Field Managers (AFCFMs) in making critical judgments relevant to what training should be provided to personnel within career fields, when training should be provided (at what career points), and where training should be conducted (training setting). A TIDES template is used Air Force-wide for standardization and formatting of CFETPs.

Training Planning Team (TPT). Comprised of the same personnel as a U&TW; however, TPTs are more intimately involved in training development and the range of issues is greater than is normal in the U&TW forum.

Training Requirements Analysis. A detailed analysis of tasks for a particular AFS to be included in the training decision process.

Upgrade Training (UGT). Identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 5-, 7-, and 9-skill levels.

Utilization and Training Workshop (U&TW). A forum of the AFCFM, MAJCOM Functional Managers (MFMs), Subject Matter Experts (SMEs), and AETC training personnel that determines career ladder training requirements.

PART I

SECTION A - GENERAL INFORMATION

1. Purpose. This CFETP provides information necessary for the Air Force Career Field Managers (AFCFMs), MAJCOM functional managers (MFMs), commanders, education and training managers, supervisors/trainer, and certifiers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training individuals require to develop and progress throughout their careers. It identifies initial skills, upgrade, qualification, advanced, and proficiency training.

1.1. Initial skills training. Is the AFS-specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Normally, this training is conducted by AETC at one of the technical training wings.

1.2. Upgrade training. Identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 5-, 7-, and 9-skill levels.

1.3. Qualification training. Is actual hands-on task performance training designed to qualify an airman in a specific duty position. This training program occurs both during and after the upgrade training process. It is designed to provide the performance skills/knowledge required to do the job.

1.4. Advanced training. Is a formal course that provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career airmen at the advanced level of the AFS.

1.5. Proficiency training. Is additional training, either in-residence, exportable advanced training courses, or on-the-job training, provided to personnel to increase their skills and knowledge beyond the minimum required for upgrade.

2. The CFETP has several purposes:

2.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. It is used to help supervisors identify training at the appropriate point in an individual's career.

2.2. Identifies task and knowledge training requirements for each skill level in the specialty and recommends education/training throughout each phase of an individual's career.

2.3. Lists training courses available in the specialty and identifies sources of training and training delivery methods.

2.4. Identifies major resource constraints that impact full implementation of the desired career field training process.

3. Uses. MFMs and supervisors will use the plan at all levels to ensure comprehensive and cohesive training programs are available for each individual in the specialty.

3.1. AETC training personnel will develop/revise formal resident, nonresident, 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 AFCFM, Air Force Civil Engineer Support Agency Force Development Division (HQ AFCESA/CEOF) to develop acquisition strategies for obtaining resources needed to provide the identified training.

3.2. MFMs will ensure their training programs complement CFETP mandatory initial, upgrade, and proficiency requirements and identify requirements that can be satisfied by OJT, resident training, contract training, CerTest, or exportable courses. MAJCOM-developed training to support this AFS must be identified for inclusion into the plan.

3.3. Unit Education and Training managers and supervisors must ensure each individual completes the mandatory training requirements (including MAJCOM supplemental requirements) for the upgrade training specified in this plan.

3.4. Each individual will complete the mandatory training requirements specified in this plan. The lists of courses in Part II in this CFETP will be used as a reference to support training.

4. Coordination and Approval. The AFCFM is the approval authority for the CFETP. MAJCOM representatives and AETC personnel will identify and coordinate on the career field training requirements. The AETC training manager for this specialty will initiate an annual review of this document by AETC and MFMs to ensure currency and accuracy. Using the list of courses in Part II, they will eliminate duplicate training.

SECTION B - CAREER FIELD PROGRESSION AND INFORMATION

5. Specialty Descriptions. Electrical Systems Apprentice, Journeyman, Craftsman, and Superintendent.

5.1. 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 intrusion detection systems; and complies with environmental and safety regulations and practices. Related DoD Occupational Subgroup: 721

5.2. Duties and Responsibilities for Apprentice, Journeyman, and Craftsman.

5.2.1. Installs, maintains, and repairs energized and de-energized electrical distribution systems and components.

5.2.1.1. Installs, maintains, and repairs high and low voltage, overhead and underground, electrical power distribution systems and components such as capacitor banks, vacuum and air break switches, breakers, transformers, fuses, lighting fixtures, receptacles, and motors.

5.2.1.2. Climbs utility poles and operates special purpose vehicles and equipment (including line maintenance and high reach trucks) to inspect, maintain, and repair overhead distribution systems.

5.2.1.3. Inspects power line poles for pest damage, deterioration, and loose hardware.

5.2.1.4. Inspects, tests, and services overhead line conductors, direct buried cables and those in underground ducts and conduits.

5.2.1.5. Troubleshoots malfunctions using technical orders, manufacturer's handbooks, local procedures, codes, and directives.

5.2.1.6. Test air samples in manholes for dangerous concentrations of combustible or toxic gases and oxygen deficiency.

5.2.1.7. Maintains proficiency in first aid, cardiopulmonary resuscitation (CPR), pole top, aerial lift, and manhole rescue.

5.2.1.8. Complies with safety and environmental regulations and practices.

5.2.2. Gives advice on electrical power distribution and special purpose electrical systems installation and repair problems

5.2.2.1. Solves complex maintenance problems by studying layout drawings, wiring and schematic diagrams, and by analyzing construction and operating characteristics.

5.2.2.2. Uses meters, testing devices, indicators, and recorders to locate equipment, distribution, and motor controller malfunctions and faults.

5.2.2.3. Diagnoses malfunctions and recommends repair procedures necessary to correct defective equipment.

5.2.2.4. Develops and establishes maintenance and operating procedures to ensure maximum efficiency.

5.2.2.5. Supervises and manages people and resources.

5.2.3. Performs planning activities.

5.2.3.1. Performs facility surveys.

5.2.3.2. Surveys proposed work to determine resources requirements.

5.2.3.3. Prepares cost estimates for in-service work.

5.2.3.4. Applies engineered performance standards to plan and estimate jobs.

5.2.3.5. Coordinates plans and other activities with other civil engineer sections and base units.

5.2.4. Performs inspection activities.

5.2.4.1. Attends site visits.

5.2.4.2. Performs pre-acceptance inspections of Electrical systems.

5.3. Duties and Responsibilities for Superintendent. Manages resources and activities devoted to installation, operation, maintenance, and repair of high and low voltage power distribution systems, electrical power generating and control systems, fire alarms, intrusion detection systems, airfield lighting systems, and aircraft arresting systems. Related DoD Occupational Subgroup: 721.

5.3.1. Plans and organizes electrical activities.

5.3.1.1. Programs and coordinates electrical power outages, maintenance, and repair requirements with users.

5.3.1.2. Performs planning activities and facility surveys. Determines resources requirements by conducting on-site investigations of proposed work.

5.3.1.3. Prepares cost estimates for in-service work requests.

5.3.1.4. Applies engineered performance standards in planning and estimating jobs.

5.3.1.5. Coordinates plans with civil engineering and other agencies as required.

5.3.2. Manages functions in electrical systems and power production activities.

5.3.2.1. Directs the installation/removal, operation, maintenance, and repair of electrical power distribution systems, above and below 600 volts and electrical power generating and control systems activities including overhead and underground distribution systems, power plant operations, fire alarms and intrusion detection systems, airfield lighting systems, and aircraft arresting systems.

5.3.2.2. Identifies and controls requisitioning of systems, parts, fuels, lubricants, bench stock, and technical publications.

5.3.2.3. Ensures productivity and work compliance.

5.3.2.4. Monitors electrical generating unit records and analyzes for organization, intermediate, or depot level maintenance, and preparation of maintenance forms, reports, and records.

5.3.2.5. Issues and logs safe clearance procedures for all crafts that maintain electrical systems and power production equipment.

5.3.2.6. Ensures compliance with environmental and safety regulations and practices.

5.3.3. Inspects and evaluates electrical systems and power production activities to ensure compliance with policies and regulations.

5.3.3.1. Assists in solving maintenance, supply, and personnel problems.

5.3.3.2. Interprets inspection findings and initiates corrective action.

5.3.3.3. Ensures certification of personnel as required

6. Skill/Career Progression. Adequate training and timely progression from the apprentice to the superintendent skill level play an important role in the Air Force's ability to accomplish its mission. It is essential that everyone involved in training do his or her part to plan, manage, and conduct an effective training program. The guidance provided in this part of the CFETP will ensure individuals receive viable training at appropriate points in their careers.

6.1. Apprentice (3-Level).

6.1.1. Upon completion of initial skills training, a trainee will work with a trainer to enhance their knowledge and skills.

6.1.2. Utilize the Career Development Course (CDC), Air Force Qualification Training Packages (AFQTPs) and other exportable courses for subject and task fundamentals in the career field. Successfully complete applicable CerTests.

6.1.3. Once trained and task certified, a trainee may perform the task unsupervised.

6.1.4. After all upgrade training requirements are completed, supervisors and Unit Education and Training Managers (UETMs) coordinate upgrade procedures.

6.1.5. NOTE: All trainees are automatically enrolled in the Community College of the Air Force (CCAF) when awarded their primary AFSC.

6.2. Journeyman (5-Level).

6.2.1. Enter into continuation training to broaden experience base.

6.2.2. 5-Levels may be assigned job positions such as team leader and shift supervisor.

6.2.3. Will attend the Airman Leadership School (ALS) after serving 48 months in the Air Force (active duty only). Either the in-residence or correspondence course is required for Air Reserve Component (ARC) personnel.

6.2.4. Will use CDCs and other reference material to prepare for Weighted Airman Performance Systems (WAPS) testing.

6.2.5. Should continue pursuing a CCAF degree.

6.2.6. After all upgrade training requirements are complete, supervisors and UETMs coordinate upgrade procedures.

6.3. Craftsman (7-Level).

6.3.1. Completion of Read-Ahead Material (RAM), 100% core/diamond task completion, and resident graduation from the 7-level resident course are basic prerequisites for award of the 7-level.

6.3.2. A craftsman may expect to fill various supervisory and management positions such as shift leader, mobility team chief, production supervisor, or task certifier.

6.3.3. Seven-levels should take continuation training courses or obtain additional knowledge on management of resources and personnel.

6.3.4. Continued academic education through CCAF and higher degree programs is encouraged.

6.3.5. Will attend the Noncommissioned Officer Academy (NCOA) after promotion to TSgt (active duty only). Either the in-residence or correspondence course is required for ARC personnel.

6.3.6. After all upgrade training requirements are complete, supervisors and UETMs coordinate upgrade procedures.

6.4. Superintendent (9-Level).

6.4.1. Must be a SMSgt for award of the 9-skill level.

6.4.2. A 9-level can be expected to fill positions such as flight chief, zone superintendents, and various staff positions.

6.4.3. Should pursue increased knowledge of budget, manpower, resources, and personnel management.

6.4.4. Recommend the pursuit of additional higher education and completion of courses outside of their career AFS.

6.5. Civil Engineer Manager.

6.5.1. Must be selected for CMSgt and possess qualifications in a feeder specialty (3E090, 3E191, 3E291, 3E391, 3E490, 3E591, or 3E691).

6.5.2. Will work in a variety of similar jobs and functional areas where general managerial and supervisory abilities can be most effectively used and challenged.

6.5.3. Resident graduation of the USAF Senior NCO Academy (SNCOA) is a prerequisite for CMSgt sew-on (active duty only). In residence or correspondence course required for ARC personnel.

7. Training Decisions. The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Electrical Systems career field. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The following decisions were made at the career field Utilization & Training Workshop (U&TW) held at Sheppard AFB, TX in Nov 1999.

7.1. Initial Skills Training. The initial skills course was reviewed for content. Additions, deletions, and modifications were made to the course. Wartime training tasks were identified. Additional contingency training was also identified.

7.2. Five-Level Upgrade Training Requirements. Existing CDCs were reviewed and scrubbed to ensure only current material remained and new technology information was added.

7.3. Seven-Level Upgrade Training Requirements. Seven-level training requirements were reviewed.

7.4. Proficiency Training.

7.4.1. Any additional knowledge and skill requirements that were not taught through initial skills or upgrade training are assigned as continuation training.

7.4.2. Purpose of continuation training is to provide training exceeding minimum upgrade training requirements with emphasis on present and future duty positions.

7.4.3. MAJCOMs must develop a continuation-training program that ensures individuals in the Electrical Systems career field receive the necessary training at the appropriate point in their careers.

7.4.4. The training program will identify both mandatory and optional training requirements.

7.5. Supplemental Training. Subject Matter Experts (SMEs) and the Training Committee reviewed supplemental training courses for technical accuracy and identified training that was no longer required. They revalidated the remaining courses as necessary to fully support career progression in the AFS.

7.6. CerTest. Originally, the CerTest program was developed to support transition training, and meet DoD certification requirements. Now, it is also the singular platform to launch AFQTP tests and supplement the evaluation of OJT.

8. Community College of the Air Force (CCAF) Academic Programs. Airmen are automatically enrolled in CCAF upon completion of basic military training. CCAF provides the opportunity to obtain an Associates in Applied Sciences Degree. In addition to its associates degree program, CCAF offers the following:

8.1. Occupational Instructor Certification. Upon completion of instructor qualification training (consisting of the Instructor Methods course and supervised practice teaching), CCAF instructors possessing an associates degree or higher may be nominated by their school commander/commandant for certification as an occupational instructor.

8.2. Trade Skill Certification. When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The College uses a competency-based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman/Supervisor, or Master Craftsman/Manager. All are transcribed on the CCAF transcript.

8.3. The Mechanical and Electrical Technology Associates Degree (4VGA) applies to AFSC 3E0X1.

8.3.1. Degree Requirements. Prior to completing an Associates Degree, the individual must be awarded a 5-level and the following requirements must be met:

Course	Semester Hours
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Elective Technical Education; Leadership, Management, and Military Studies; or General Education	15
Total	**64**

8.3.2. Technical Education. (24 Semester Hours) A minimum of 12 semester hours of Technical Core subjects/courses must be applied and the remaining semester hours applied from Technical Core/Technical Elective courses.

Technical Core Requirements	Semester Hours
CCAF Internship	16
Electrical Power Production	20
Electrical Systems	20
Heating Systems	20
Refrigeration and Air Conditioning	20

Technical Electives	Semester Hours
AF Enlisted Professional Military Education	12
Air Distribution and Filtering Systems	3
Alternate Heating and Cooling	3
Blueprint Reading/Schematic Diagrams	6
Building Codes and Ordinance	3
Computer Science	6
Control Systems/Maintenance	6
Electronics	6
Engine Principles	3
Environmental Awareness	3
Environmental Compliance	3
Industrial Management	3
Industrial Safety	3
Motor, Starter, and Control Devices	6
Quality Assurance	3
Technical Mathematics (College Algebra or Higher)	3
Technical Physics	4
Technical Writing	3
Welding and Pipefitting	3

8.3.3. Leadership, Management, and Military Studies (6 Semester Hours). Professional military education and civilian management courses accepted in transfer. Credit is also earned by testing.

8.3.4. Physical Education (4 Semester Hours). This requirement is satisfied by completion of PHE 1000- Basic Training.

8.3.5. General Education (15 Semester Hours). Applicable courses must meet the criteria for application of courses to the General Education Requirements (GER) and be in agreement with the definitions of applicable general education subjects/courses as provided in the CCAF General Catalog.

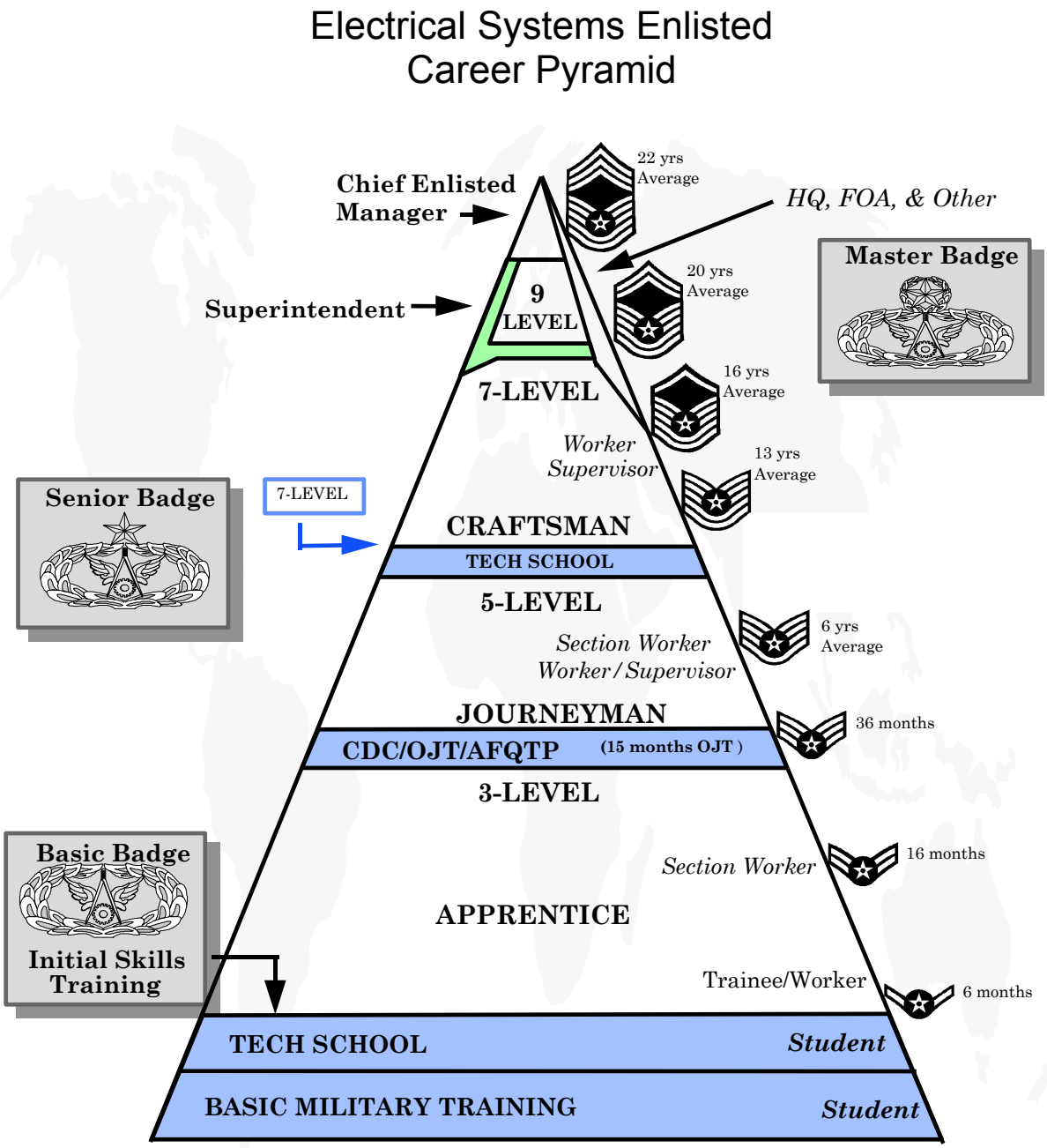
General Education	Semester Hours
Oral Communication Speech	3

Written Communication English Composition	3
Mathematics An intermediate algebra or a college-level mathematics course that satisfies the delivering institution's . mathematics requirement for graduation. If an acceptable mathematics course is applied as a Technical or Program Elective, a natural science course may be substituted for mathematics.	3
Social Science Anthropology, Archaeology, Economics, Geography, Government, History, Political Science, Psychology, Sociology	3
Humanities Fine Arts (criticism, appreciation, historical significance), foreign language, literature, philosophy, religion	3

8.3.6. Program Elective (15 Semester Hours). Courses applicable to the technical education; leadership, management, and military studies; or general education requirements. Natural science courses that meet the general education requirement (GER) application criteria. Foreign language credit earned at the Defense Language Institute or through the Defense Language Proficiency Test. A maximum of six semester hours of CCAF degree-applicable technical course credit otherwise not applicable to this program of enrollment. See the CCAF General Catalog for details regarding the Associates of Applied Science for this specialty.

9. Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an AETC Instructor should actively pursue an Associates Degree. A qualified faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

10. Career Field Path. The following chart depicts this specialty's career path.



10.1. Enlisted Career Path.

Table: Enlisted Career Path				
Education and Training Requirements	**GRADE REQUIREMENTS**			
	Rank	Average Sew-On	Earliest Sew-On	High Year Of Tenure (HYT)
Basic Military Training school				
Apprentice Technical School (3-Skill Level)	Amn A1C	6 months 16 months		
Upgrade To Journeyman (5-Skill Level) - Complete all core and duty-related tasks identified in CFETP. - Minimum 15 months on-the-job training (9 months for retrainees) - Complete appropriate CDC if/when available.	SrA	3 years	28 months	10 Years
Airman Leadership School (ALS) - Must be a SrA with 48 months time in service or be a SSgt Selectee. - Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only).	**Trainer** - Trainer must be qualified and certified on tasks to be trained. - Must attend formal AF Training Course and be appointed by Commander in writing.			
Upgrade To Craftsman (7-Skill Level) - Complete all core and duty-related tasks identified in CFETP - Minimum rank of SSgt - 12 months OJT - Complete appropriate CDC if/when available. - Attend 7-level Craftsman Course (may attend prior to completion of 12 months UGT) - Must complete Read-Ahead Material (RAM) prior to attending.	SSgt	6 years	3 years	20 Years
Retrainee - Minimum 9 months for 5-level - Minimum 12 months for 7-level UGT	**Certifier** - SSgt with 5-skill level or civilian equivalent. - Attend formal AF Certifier Course and appointed by Commander in writing. - Be a person other than the trainer (for core and critical tasks only).			
Noncommissioned Officer Academy (NCOA) - Must be a TSgt or TSgt Selectee - Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only).	TSgt MSgt	13 years 16 years	5 years 8 years	20 Years 24 Years
Upgrade To Superintendent (9-Skill Level) - Minimum rank of SMSgt	SMSgt	20 years	11 years	26 Years
Civil Engineer Manager (CEM) -USAF Senior NCO Academy (SNCOA) resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only)	CMSgt	22 years	14 years	30 years

10.2. CE Occupational Badge. The Civil Engineer badge reflects a great history and tradition. By wearing it, you will be recognized by your fellow airmen as having achieved an expected level of competence. The multitude of engineers before you established this expectation through excellent service in both peace and war. Eligibility criteria for award and wear of AF occupational badges can be found in AFI 36-2923 (Aeronautical, Duty, and Occupational Badges), on the AFEPL, Air Force Electronic Publications Library (AFEPL).

10.2.1. CE Badge Heraldry. The gear wheel and compass have historically been used to represent the engineering profession, in both the military and civilian sector. The gear represents the essence of engineering: applying scientific principles and technology to practical ends. To Air Force engineers, the gear symbolizes an element (representing the built environment) that meshes with other environments (weapon systems and trained personnel) to enable the Air Force to perform its mission. The compass is a precision tool historically used by engineers in designing and constructing facilities and equipment. The gear and compass together symbolize all the diverse specialties within Air Force civil engineer. Finally, the wings help to portray the fundamental linkage between the engineering and aviation components; and that the built environment is the foundation supporting Air Force mission and people.

10.2.1.1. Basic Badge. The basic badge is awarded upon successful completion of the apprentice course.

10.2.1.2. Senior Badge. The senior badge adds a star to the top of the badge. This is awarded after the member successfully completes the 7-level awarding course.

10.2.1.3. Master Badge. The master badge adds a wreath around the star. It's awarded to master sergeant or above with 5 years in the specialty from award of the 7-skill level.

SECTION C – SKILL-LEVEL TRAINING REQUIREMENTS

11. Purpose. The various skill levels in the career field are defined in terms of tasks and knowledge requirements for the Electrical Systems career ladder. They are stated in broad, general terms and establish the standards of performance. An all-encompassing core task list has been developed for this specialty because of the diversity of the missions supported and the equipment installed to meet mission requirements. Core tasks (and diamond tasks as applicable), knowledge items, and skill requirements for this specialty are identified in the STS. Completion of the mandatory 3-level awarding course, the mandatory completion of CDCs, the mandatory completion of applicable AFQTPs and CerTests, and the mandatory 7-level Craftsman course, comprise Air Force requirements.

12. Skill-Level Training Requirements.

12.1. Apprentice (3-Level) Training Requirements.

12.1.1. Specialty Qualifications.

12.1.1.1. Knowledge. Completion of the Apprentice course satisfies this mandatory requirement.

12.1.1.2. Education. Completion of high school or general education development (GED) with courses in mathematics, general science, physics, shop mechanics, electricity, and computer fundamentals is desirable.

12.1.1.3. Training. Completion of the Electrical Systems Apprentice Course, J3ABR3E031 005, is mandatory for award of this skill level

12.1.1.4. Experience. N/A

12.1.1.5. Other.

12.1.1.5.1. Normal color vision as defined in AFMAN 48-123, Medical Examination and Standards

12.1.1.5.2. Qualification to operate government vehicles according to AFMAN 24-301, Vehicle Operations.

12.1.1.5.3. Freedom from fear of heights.

12.1.2. Training Sources/Resources.

12.1.2.1. Formal training is accomplished through course, J3ABR3E031 007, at Sheppard AFB, TX

12.1.2.2. The COL (Part II, Section B of this CFETP) identifies all the knowledge and tasks, with their respective standards.

12.1.2.3. When applicable, AFQTPs and associated CerTests are mandatory for use during UGT/QT on all core tasks, critical tasks, and diamond (♦) tasks.

12.1.3. Implementation.

12.1.3.1. The 3-skill level is awarded upon graduating the Apprentice course.

12.2. Journeyman (5-Level) Training Requirements.

12.2.1. Specialty Qualification. Entry into 5-level upgrade training is initiated after the individual has completed the 3-level school. All 3-level qualifications apply to 5-level requirements.

12.2.1.1. Knowledge. Knowledge of the following is mandatory:

12.2.1.1.1. Principles of electronics, including computation and measurement of common properties (resistance, inductance, capacitance, voltage, and current).

12.2.1.1.2. Transformer and regulator operations and connections.

12.2.1.1.3. Grounding and lightning protection systems.

12.2.1.1.4. Working on high and low voltage energized and de-energized lines

12.2.1.1.5. Applications of safety requirements related to installation and maintenance of electrical distribution systems.

12.2.1.1.6. Principles of fire and intrusion alarms, cathodic protection systems, and airfield lighting systems.

12.2.1.1.7. Reading electrical schematics and one-line diagrams.

12.2.1.1.8. Rescue and resuscitation of electrical shock victims.

12.2.1.1.9. Environmental concerns and safety precautions required when using and storing hazardous materials.

12.2.1.2. Education. N/A

12.2.1.3. Training

12.2.1.3.1. Completion of CDCs is mandatory.

12.2.1.3.2. Certification of all 5-level core tasks identified with a single asterisk (*) in the core task column of the STS is mandatory.

12.2.1.3.3. Completion of AFQTPs for assigned core and diamond (♦) tasks is mandatory.

12.2.1.3.4. Completion of CerTests for all diamond (♦) tasks with a minimum of 80% is mandatory.

12.2.1.3.5. Certification of duty position requirements identified by the supervisor is mandatory.

12.2.1.4. Experience.

12.2.1.4.1. Qualification in and possession of 3-skill level.

12.2.1.4.2. Operation and maintenance of engines, generators, and distribution components of electric power production equipment and aircraft arresting barriers.

12.2.1.4.3. Minimum 15 months on-the-job training (9 months for re-trainees) before award of 5-skill level.

12.2.1.5. Other. N/A

12.2.2. Training Sources/Resources.

12.2.2.1. CDC 3E051 A and B, Electrical Systems Journeyman.

12.2.2.2. The STS (Part II, Section A of the CFETP) identifies all core tasks required for qualification in the individual's duty position.

12.2.2.3. Qualified trainers provide upgrade and qualification training for duty positions, managed programs, and/or equipment to be used.

12.2.3. Implementation.

12.2.3.1. Entry into formal Journeyman upgrade training is accomplished after individuals are assigned to their first duty station.

12.2.3.2. Qualification training is initiated any time individuals are assigned duties they are not certified to perform.

12.2.3.3. AFQTPs are used concurrently to obtain necessary duty position qualifications.

12.3. Craftsman (7-Level) Training Requirements.

12.3.1. Specialty Qualification. All 5-level qualifications apply to 7-level requirements.

12.3.1.1. Knowledge. All 5-level knowledge requirements apply to 7-level requirements.

12.3.1.2. Education.

12.3.1.2.1. To assume the grade of SSgt, individuals must successfully complete Airman Leadership School (active duty only).

12.3.1.2.2. To assume the grade of MSgt, individuals must successfully complete the NCO Academy (active duty only).

12.3.1.2.3. For ANG/AFRC, completion of Air Force Institute for Advanced Distributive Learning (AFIADL) courses 00001 (ALS) and 00006 D&E (NCO Academy) satisfy the requirements.

12.3.1.3. Training.

12.3.1.3.1. Completion of 7-level Read Ahead Material (RAM) for course J3ACR3E070-000 is mandatory prior to attendance at the resident course.

12.3.1.3.2. Completion of in-residence CE Management Craftsman Course J3ACR3E070-000 is mandatory.

12.3.1.3.3. Certification of all 5- and 7-skill level core tasks identified with a single asterisk (*) and double asterisk (**) in the core column of the STS is mandatory.

12.3.1.3.4. Completion of all AFQTPs for assigned core and diamond (♦) tasks is mandatory.

12.3.1.3.5. Completion of CerTests for all diamond (♦) tasks with a minimum of 80% is mandatory.

12.3.1.3.6. Certification of duty position requirements identified by the supervisor is mandatory.

12.3.1.3.7. Completion of course J3AZR3E051 003, in residence, Cathodic Protection Systems is highly desirable.

12.3.1.3.8. Completion of course J3AZR3E051 007, in residence, Airfield Lighting Systems is highly desirable.

12.3.1.3.9. Completion of course J3AZR3E051 013, in residence, Intrusion Detection Systems is highly desirable.

12.3.1.3.10. Completion of course J3AZR3E051 008, in residence, HV Maintenance Systems is highly desirable.

12.3.1.3.11. Course J3AZR3E051 016, in residence, HV Cable Testing & Splicing is highly desirable.

12.3.1.3.12. Completion of course J3AZR3E051 012, in residence, Fire Alarm Systems is highly desirable.

12.3.1.3.13. Completion of course J3AZR3E071 001, in residence, CE Electrical Troubleshooting is highly desirable.

12.3.1.3.14. Completion of course J3AZR3E051 010, in residence, Bare Base Elect Systems is highly desirable.

12.3.1.4. Experience.

12.3.1.4.1. Qualification in and possession of a 5-level.

12.3.1.4.2. Experience in climbing poles, installing, maintaining, and repairing low and high voltage interior and exterior electrical systems and components.
12.3.1.4.3. Minimum 12 months on-the-job training (12 months for re-trainees) before award of 7- skill level.

12.3.1.5. Other. N/A

12.3.2. Training Sources/Resources.

12.3.2.1. Course J3ACR3E070 000 Part A, CE Management Craftsman Course Read Ahead Material (RAM).

12.3.2.2. Course J3ACR3E070-000, CE Management Craftsman.

12.3.2.3. NCO Academy Course 00006 D&E (paper-based correspondence).

12.3.2.4. Course J3AZR3E051 003, in residence, Cathodic Protection Systems.

12.3.2.5. Course J3AZR3E051 007, in residence, Airfield Lighting Systems.

12.3.2.6. Course J3AZR3E051 013, in residence, Intrusion Detection Systems.

12.3.2.7. Course J3AZR3E051 017, in residence, HV Maintenance Systems.

12.3.2.8. Course J3AZR3E051 016, in residence, HV Cable Testing & Splicing.

12.3.2.9. Course J3AZR3E051 012, in residence, Fire Alarm Systems.

12.3.2.10. Course J3AZR3E071 001, in residence, CE Electrical Troubleshooting.

12.3.2.11. Course J3AZR3E051 010, in residence, Bare Base Elect Systems.

12.3.2.12. The STS (Part II, Section A of this CFETP) identifies all core tasks required for qualification in the individual's duty position.

12.3.2.13. Qualified trainers provide upgrade and qualification training for duty positions, managed programs, and/or equipment to be used.

12.3.3. Implementation.

12.3.3.1. Entry into 7-level training is initiated when an individual is selected for SSgt and has fulfilled all 5-level requirements.

12.3.3.2. Qualification training is initiated any time an individual is assigned duties that they are not qualified to perform.

12.3.3.3. AFQTPs are used concurrently to obtain necessary duty position qualifications.

12.4. Superintendent (9-Level) Training Requirements.

12.4.1. Specialty Qualification.

12.4.1.1. Knowledge. Knowledge of the following is mandatory:

12.4.1.1.1. Air Force training programs.

12.4.1.1.2. CE policies, practices, and procedures of base maintenance and operations, crafts, facilities, equipment, and systems.

12.4.1.1.3. Interpretation and application of maintenance and work force management.

12.4.1.1.4. Principles of electricity and electronics, electrical circuitry and distribution; interior and exterior electrical distribution systems.

12.4.1.1.5. Internal combustion engines and other prime movers for electrical generating systems.

12.4.1.1.6. Principles of fire and intrusion alarm systems, cathodic protection systems, aircraft arresting systems, and airfield lighting systems.

12.4.1.1.7. Safety and environmental concerns

12.4.1.2. Education.

12.4.1.2.1. ANG/AFRC must complete AFIADL course 00005 (computer-based CD-ROM) to satisfy the Senior NCO Academy requirement.

12.4.1.3. Training. Completion of duty position training requirements.

12.4.1.4. Experience.

12.4.1.4.1. Qualification in and possession of 7-skill level is mandatory.

12.4.1.4.2. Managing functions such as inspecting, operating, maintaining, and repairing electrical distribution systems, electrical generating systems, fire and intrusion detection systems, airfield lighting systems, and aircraft arresting systems.

12.4.1.5. Other. N/A

12.4.2. Training Sources/Resources.

12.4.2.1. In-residence SNCO Academy located at Maxwell AFB - Gunter Annex AL.

12.4.2.2. SNCO Academy Course 00005 (exportable computer-based CD ROM).

12.4.3. Implementation.

12.4.3.1. Entry into 9-level training is initiated when an individual is selected for SMSgt and is a fully qualified 7-level.

12.4.3.2. QT is initiated any time an individual is assigned duties they are not qualified to perform.

12.5. Civil Engineer Manager.

12.5.1. Specialty Qualification.

12.5.1.1. Knowledge. Knowledge of the following is mandatory:

12.5.1.1.1. Managing and directing personnel resource activities.

12.5.1.1.2. Interpreting and enforcing policy and applicable directives.

12.5.1.1.3. Establishing control procedures to meet work goals and standards.

12.5.1.1.4. Recommending or initiating actions to improve operational efficiency.

12.5.1.1.5. Planning and programming work commitments and schedules.

12.5.1.1.6. Developing plans regarding facilities, supplies, and equipment procurement and maintenance.

12.5.1.2. Education. Must be a resident graduate of SNCOA (active duty only).

12.5.1.3. Training. N/A

12.5.1.4. Experience.

12.5.1.4.1. Possess qualifications in feeder specialty (3E090) prior to award of Civil Engineer Manager code 3E000.

12.5.1.4.2. Managerial ability to plan, direct, coordinate, implement, and control a wide range of work activity.

12.5.1.5. Other. N/A

12.5.2. Training Sources and Resources. N/A

12.5.3. Implementation. Entry into Civil Engineer Manager code 3E000 is initiated when an individual is selected for CMSgt and possesses qualifications in a feeder specialty (3E090, 3E191, 3E291, 3E391, 3E490, 3E591, and 3E691).

SECTION D - RESOURCE CONSTRAINTS

13. Purpose. The following paragraphs describe the resource constraints that result from publication of this CFETP. All constraints are referenced to specific STS line items shown as back slashed on the STS.

13.1. Equipment Constraints:

13.1.1. Constraints. See below.

13.1.2. Time/Manpower/Student Man-years Constraints: None.

13.2. Apprentice (3-Level) Training.

13.2.1. Constraints. . Course implementation with slashes (column 4A1). Course cannot be implemented until completion and approval of Plan of Instruction (POI

13.2.2. Impact. Required training will not be ready for implementation upon publication of this CFETP

13.2.3. Resources Required. . Need $147,936.00 in equipment. If equipment is not available on course start date, course will implement constrained. The following listing describes the resource constraints that result from publication of this CFETP. All constraints are referenced to specific STS line items that will be shown as backslashed on the STS if equipment is not received.

13.2.3.1. 11.3.1, 11.3.2 & 11.3.3, - 3 each, Rescue Manikin, (Tuffelly) WTK1500 J.L. Mathews Catalog.

13.2.3.2. 17.1.1, 17.3.2, 17.3.4.1, 17.3.4.2, 17.3.4.3, & 17.3.7, - 1 each, fabricated O/H Distribution System Construction Training Area (will be used to perform installation of guy wires, transformers, conductor supports, conductors, protective devices, grounding systems and, service drops).

13.2.3.3. 17.3.7, 18.1.5 & 18.8 - 2 each, Grounding Set, (Overhead) FSN 5970-01-041-3920.

13.2.3.4. 18.6,& 25.5.2, 25.5.10, & 25.5.19 - 2 each, High Potential Test Meter, Hipotronics 880PL-A-80KV.

13.2.3.5. 11.3.2, 18.1.5, 18.6, 18.7, 18.8, & 18.9 - 1 each, fabricated Underground Distribution System Manhole Training Area (will be used to install U/G cable, trace cables, manhole rescue, test and ventilate manholes).

13.2.3.6. 27.2.2.6.1.1.2, & 27.2.2.6.1.1.4, & 27.2.2.6.1.2.2, - 1 each, Primary Distribution Center.

13.2.3.7. 27.2.2.6.1.1.3, 27.2.2.6.1.2.3, 27.2.2.6.2.1.2, & 27.2.2.6.2.2.2, - 5 each, Secondary Distribution Center, FSN 6910-01-168-8077.

13.2.3.8. 27.1.2.1.1, 27.1.2.1.2, 27.1.2.1.3, 27.1.2.1.5, & 27.1.2.1.6 - Miscellaneous parts for EALS unit

13.2.4. Action Required. Complete revision of the 3-level course to meet all training requirements and proficiency codes identified in this CFETP if all equipment is available. If equipment is not available, 3-level proficiency codes will be slashed to indicate level of training actually provided.

13.2.5. OPR/Target Completion Date. 366 TRS/TRRT will implement revised training requirements with class beginning 17 May 02.

13.3. Journeyman (5-Level) Training. .

13.3.1. Constraints. AFQTP development for all core and diamond tasks.

13.3.2. Impact. Required training will be available upon implementation of this CFETP.

13.3.3. Resources Required. None.

13.3.4. Action Required. HQ AFCESA/CEOF will ensure development of required AFQTPs.

13.3.5. OPR/Target Completion Date. HQ AFCESA/CEOF, ECD: Sep 02.

13.4. Craftsman (7-Level) Training.

13.4.1. Constraints. AFQTP development for all core and diamond tasks.

13.4.2. Impact. Required training will be available upon implementation of this CFETP.

13.4.3. Resources Required. None.

13.4.4. Action Required. HQ AFCESA/CEOF will ensure development of required AFQTPs.

13.4.5. OPR/Target Completion Date. HQ AFCESA/CEOF, ECD: Sep 02.

13.5. Superintendent (9-Level) Training. No Constraints.

SECTION E - TRANSITION TRAINING GUIDE

14. “There are currently no transition training requirements. This area is reserved.”

PART II

SECTION A - SPECIALTY TRAINING STANDARD

1. Implementation. This STS will be used to identify technical training provided by AETC for the 3-level Electrical Power Production Apprentice course with class beginning 30 Jul 02 and graduating 5 Feb 03. Also the 7-level Civil Engineer Management Craftsman course with class beginning 23 Jul 01 and graduating 3 Aug 01.

2. Purpose. As prescribed in AFI 36-2201, this STS:

2.1. Lists in Column 1 (*Tasks, Knowledge, and Technical Reference*) the most common tasks, knowledge, and Technical References (TRs) necessary for airmen to perform duties in the 3-, 5-, and 7-skill level.

2.2. Column 2 (*Core* Tasks) identifies core tasks (specialty-wide training requirements) by an asterisk (*) for 5- and 7- skill levels or a double asterisk (**) for 7-skill level only. ***As a minimum, trainees must complete all core and critical tasks for skill-level upgrade***.

2.2.1. All tasks in the 3 level column are considered wartime tasks. In response to a wartime scenario, these tasks will be taught in the 3-level course in a streamlined training environment.

2.2.2. Tasks identified by a diamond (♦) in column 2 are extremely important to the career field. Equipment shortfalls at most locations however, have created problems with the actual hands-on certification of these tasks. In instances where required equipment is not available for instruction, completion of the task's AFQTP and passing the corresponding CerTest is all that is required for upgrade and qualification training.

2.3. Provides certification for OJT. Columns 3A, B, C, D, and E are used to record completion of tasks and knowledge training requirements. If available, use automated training management systems to document technician qualifications. Task certification of core and critical tasks requires a training completion date and initials of the trainee, trainer, and certifier. All non-core tasks require training completion date and initials of the trainee and trainer only.

2.4. Shows formal training and correspondence course requirements. Columns 4A, B, and C show the proficiency to be demonstrated on the job by the graduate as a result of training on the task/knowledge and the career knowledge provided by the initial skills training course, correspondence course, and read-ahead material. See CADRE/AFSC/CDC listing maintained by the unit training manager for current CDC listings.

2.5. Identifies qualitative requirements. Attachment 1 contains the *Proficiency Code Key* used to indicate the level of training and knowledge provided by resident training and career development courses

2.6. Becomes a Job Qualification Standard (JQS) for on-the-job training when placed in AF Form 623, Individual Training Record, and used according to AFI 36-2201. When used as a JQS, the following requirements apply:

2.6.1. Documentation. Document and certify completion of training.

2.6.1.1. Identify current duty position requirements by circling the subparagraph number or letter next to the task statement. **Additionally, all core and diamond (♦) tasks should be circled.** Document task completion by annotating columns 3A, 3B, 3C, and 3D. **NOTE:** All entries shall be made in pencil.

2.6.1.2. Enter the start date of the AFQTP on the documentation record. Once completed enter the completion date. When **hands-on** training is started and completed annotate the STS accordingly.

2.6.1.3. Transcribing from old document to CFETP. Use the new STS to identify and certify all current and past task qualifications.

2.6.1.3.1. For tasks previously certified and still required in the current duty position:

2.6.1.3.1.1. For core and critical tasks, the trainer and certifier evaluate the airman's current qualifications and validate airman's ability to complete the task. The certifier and trainee then enter their initials and new certified date.

2.6.1.3.1.2. For non-core duty position tasks, the trainer evaluates the airman's current qualifications and validates the airman's ability to complete the task. The trainer and trainee then enter their initials in columns 3D and 3C respectively and the current date is entered in column 3B.

2.6.1.3.2. To transcribe previous certification for tasks not required in the current duty position, carry forward only the previous completion dates (not the initials of another person). If and when these tasks become a duty position requirement, re-certify with current date and certifier, trainer, and trainee's initials.

2.6.1.4. Documenting Career Knowledge. When a CDC is not available, the supervisor identifies STS training references that the trainee requires for career knowledge and ensures, as a minimum, that trainees cover all mandatory items specified in AFMAN 36-2108, Enlisted Classification. For two-time CDC exam failures, supervisors identify all STS items corresponding to the areas covered by the CDC. The trainee completes a study of STS references, undergoes evaluation by the task certifier, and receives certification on the STS. *NOTE:* Career knowledge must be documented prior to submitting a CDC waiver.

2.6.1.5. De-Certification and Re-Certification. When an airman is found to be unqualified on a task, the supervisor shall erase previous certification and enter airman into qualification training. Appropriate remarks are entered on the AF Form 623a, On-The-Job Training Record Continuation Sheet, as to the reason for de-certification. The individual is re-certified using the normal certification process.

2.6.2. 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. This equates to a "3c" in the proficiency code key. AFQTPs, when available, shall be used to identify Air Force standardized procedures. Local requirements for accuracy, timeliness, and use of procedures shall be applied accordingly.

2.7. The STS is used as a guide for development of promotion tests in the Weighted Airman Promotion System (WAPS). Senior NCOs with extensive practical experience in their career fields develop Specialty Knowledge Tests (SKTs) at the USAF Occupational Measurement Squadron. The tests sample knowledge of STS subject matter areas judged by test development team members as most appropriate for promotion to higher grades. Questions are based upon study references listed in the WAPS catalog. Individual responsibilities are in Chapter 14 of AFI 36-2606, United States Air Force Reenlistment, Retention, and NCO Status Programs. WAPS is not applicable to the Air National Guard or Air Reserve Forces.

3. Recommendations. Comments and recommendations are invited concerning quality of training AETC graduates receive. Reference this STS regarding changes and address your correspondence to 782 TRG/TTS, 620 9th Avenue, Suite 3, Sheppard AFB TX 76311-2368. A 782d customer service information line (CSIL) has been installed for the supervisor's convenience to identify graduates who may have received over or under training on tasks/knowledge items listed in this STS. For a quick response to problems, call the CSIL at DSN 736-2574 any time (day or night).

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

EARNEST O. ROBBINS II, Maj Gen, USAF
The Civil Engineer
DCS/Installations and Logistics

4 Attachments
1. Qualitative Requirements
2. 3-, 5-, and 7-level career field training requirements
3. General Contingency Requirements
4. AFQTP Documentation Record

THIS BLOCK IS FOR IDENTIFICATION PURPOSES ONLY		
NAME OF TRAINEE		
PRINTED NAME *(Last, First, Middle Initial)*	INITIALS *(Written)*	SSN

PRINTED NAME OF CERTIFYING OFFICIAL AND WRITTEN INITIALS	
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I

QUALITATIVE REQUIREMENTS

PROFICIENCY CODE KEY		
	SCALE VALUE	DEFINITION: The individual
TASK PERFORMANCE LEVELS	**1**	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (EXTREMELY LIMITED)
	2	Can do most parts of the task. Needs help only on hardest parts. (PARTIALLY PROFICIENT)
	3	Can do all parts of the task. Needs only a spot check of completed work. (COMPETENT)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (HIGHLY PROFICIENT)
***TASK KNOWLEDGE LEVELS**	**a**	Can name parts, tools, and simple facts about the task. (NOMENCLATURE)
	b	Can determine step by step procedures for doing the task. (PROCEDURES)
	c	Can identify why and when the task must be done and why each step is needed. (OPERATING PRINCIPLES)
	d	Can predict, isolate, and resolve problems about the task. (ADVANCED THEORY)
****SUBJECT KNOWLEDGE LEVELS**	**A**	Can identify basic facts and terms about the subject. (FACTS)
	B	Can identify relationship of basic facts and state general principles about the subject. (PRINCIPLES)
	C	Can analyze facts and principles and draw conclusions about the subject. (ANALYSIS)
	D	Can evaluate conditions and make proper decisions about the subject. (EVALUATION)

EXPLANATIONS

* A task knowledge scale value may be used alone or with a task performance scale value to define a level of knowledge for a specific task. (Examples: b and 1b)

** A subject knowledge scale value is used alone to define a level of knowlege for a subject not directly related to any specific task, or for a subject common to several tasks.

\- This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.

X This mark is used alone in course columns to show that training is required but not given due to limitations in resources.

This block is for identification purposes only.		
Name of Trainee		
Printed Name(Last, First, Middle)	**Initials (Written)**	**SSAN**
Printed Names and Written Initials of Training and Certifying Officials		
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	

Continuation Sheet

Note 1: Underlined training references are commercial publications or other publications essential for enlisted specialty training and mission accomplishment.
Note 2: Task knowledge gained at Basic Military Training (BMT) will not be repeated during resident training.
Note 3: Prior to attending Civil Engineer Management Craftsman resident course, all personnel must successfully complete the 7-level Read-ahead Material (RAM) for J3ACR3E070 000. Personnel must present RAM test results upon arrival.
Note 4: AFQTPs are provided through multiple delivery systems (paper-based, CD-ROM, or video). Completion is required for upgrade or qualification. Access AFCESA's home page (www.afcesa.af.mil) for current AFQTP's.
Note 5: Annotate AFQTP completion on the AFQTP Documentation Record (Attachment 4). The AFQTP Documentation Record is used to track knowledge training only. Annotate the STS only when hands-on training is started and completed.
Note 6: In addition to completing the AFQTP Documentation Record, for ease of reference, you may place an "X" in column "4B(2)-QTP" to denote QTP completion.

1. **Task Knowledge And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
1. CE ORGANIZATION AND CAREER FIELD STRUCTURE Ref: AFDD 2-4.2; AFIs 10-209, 10-210, 10-211, 32-1022, 32-1031, 36-2101, 38-101, 51-903; AFMAN 36-2108; AFPAMs 32-1004 V1-6; 32-1005												
1.1. Base Civil Engineer (BCE) structure							A		B			
1.2. Progression in career ladder							A		B			
1.3. Duties and responsibilities												
1.3.1. Peacetime							A					
1.3.2. Contingency							A					
1.4. Functions of:												
1.4.1. BCE							A		B		B	
1.4.2. Prime BEEF							A		B		B	
1.4.3. RED HORSE							A		B		B	
1.4.4. HQ ANG/AFRC							A		B		B	
1.5. Resources												
1.5.1. Assess manpower requirements											b	3c
1.5.2. Identify budget requirements											b	3c
1.5.3. Determine equipment requirements											b	3c
1.5.4. Use Allowance Standards (AS)											b	3c
1.5.5. Research, Development, and Acquisition (RD&A) Ref: DoDD 5000.1												
1.5.5.1. Process												B
1.5.5.2. Unit responsibilities												B
1.5.5.3. Major command responsibilities												B
1.5.6. Assess vehicle requirements											b	1b
1.5.7. Requesting contract services											b	2c

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		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
1.5.8. Requesting Simplified Acquisition of Base Engineering Requirements (SABER) contract											B	C
2. SPECIFIC OPSEC VULNERABILITIES Ref: AFI 10-1101							A					
3. PRACTICE COMPUTER SECURITY Ref: AFSSI 5102							A				A	1b
4. SUPERVISION Ref: AFMAN 36-2108; AFI 36-2201; DoDD 5500-7												
4.1. Orient new personnel											b	
4.2. Assign personnel to work crew											b	
4.3. Coordinate work assignments											b	
4.4. Schedule work assignments and priorities											b	
4.5. Establish:												
4.5.1. Work methods											b	
4.5.2. Controls											b	
4.5.3. Performance standards											b	
4.6. Evaluate work performance of subordinate personnel											b	
4.7. Resolve technical problems for subordinate personnel											b	
4.8. Direct projects											b	2b
5. TRAINING Ref: AFIs 36-2101, 36-2201; AFMAN 36-2108; AFPAM 36-2247												
5.1. Evaluate personnel to determine need for training									b		b	3c
5.2. Enlisted specialty training supervision												
5.2.1. Prepare job qualification standards											b	3c
5.2.2. Conduct training											b	3c
5.2.3. Counsel trainees on their progress											b	3c
5.2.4. Monitor training effectiveness												
5.2.4.1. Career knowledge									A		b	3c
5.2.4.2. Job proficiency upgrade									A		b	3c
5.2.4.3. Qualification									A		b	3c
5.3. Maintain training records									A		b	3c

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5.4. Evaluate training programs effectiveness											b	3c
5.5. Recommend people for training											a	b
5.6. AETC training management system (Training Allocation)									A		A	B
5.7. Managing Certification and Testing (Cer Test)							A		B			B
5.8. National/DoD Certification requirements									A		A	B
5.9. AFQTP Requirements											B	
6. ENVIRONMENTAL AWARENESS AND COMPLIANCE Ref: AFIs 32-4002, 32-7045, 32-7061; Chemicals in Your Community (EPA 550-K-93-003); EO 12856												
6.1. Environmental Compliance Assessment Management Program (ECAMP)							A		B		B	
6.2. National Environmental Policy Act (NEPA)							A		B		B	
6.3. Environmental Impact Analysis Process (EIAP)							A		B		B	
6.4. Emergency Planning and Community Right to Know Act (EPCRA)							A		B		B	
7. CE MANAGEMENT Ref: AFI 32-1001, 32-1022; AFPAMs 32-1004 V1-6; 32-1005, 32-1098; AFMAN 23-110												
7.1. Customer relationships							A		B		B	
7.2. Work identification and authorization									A		B	
7.3. Plan work requirements									a		b	2b
7.4. Plan logistics support (CEMAS, BOM)									a		b	2b
7.5. IMPAC Program											A	B
7.6. Maintain recurring work program									a		b	2b
7.7. Scheduling/time accounting									a		b	2b
7.8. Warranty and Guarantee Program									A		B	
7.9. Property Accountability									B			B
7.10. Base Comprehensive Plan											A	
7.11. Legal limits									A			
7.12. Mark "As Built " Drawings											b	2b
7.13. Reimbursements procedures									A		B	
7.14. CE Specific Automated Systems (Computer) Capability												
7.14.1. Perform inputs									a		b	1a

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		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
7.14.2. Maintain files									a		b	1a
7.14.3. Develop automated reports									a		b	1a
7.14.4. Extract automated reports									a		b	1a
7.14.5. Perform automated data analysis									a		b	1a
7.15. Host Tenant and Interservice Agreements											A	
7.16. Civil Engineer Civilian Management											B	C
8. COMMUNICATIONS Ref: AFI 33-106; AFJMAN 24-306												
8.1. Use radios							b					
8.2. Use hand signals							b					
8.3. Identify airdrome signals							b					
9. AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM Ref: AFPDs 91-2, 91-3; AFI 91-302;												
9.1. Supervisory responsibilities									B			
9.2. Hazardous materials waste handling							A		B			
9.3. Lead-based paint (LBP) hazard Ref: 29-CFR 1926.62; Working With Lead-based Paint: Facts and Information Applicable to Air Force Facilities							B					
9.4. Fire extinguisher training							A					
10. PUBLICATIONS Ref: AFI 33-360; AFPAMs 32-1004 VI-6, 32-1005												
10.1. Military							A		B			
10.2. Commerical							A		B			
10.3. Engineering Technical Letters (ETL)							A		B			
11. AFSC SPECIFIC SAFETY STANDARDS Ref: AFI 32-1064; AFM 32-1185; AFOSH STD 91-10, 91-25, 91-31, 91-45; American Red Cross Adult CPR Handbook, American Heart Association												
11.1. Electrical facilities safe clearance forms												
11.1.1. Use AF Form 979							2b		c			

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		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
11.1.2. Use AF Form 980							2b		c			
11.1.3. Use AF Form 269												
11.1.3.1. When switching	**						2b		c			
11.1.3.2. When blocking and tagging	**						2b		c			
11.1.4. Plan safe clearance	**								c			
11.2. Confined space												
11.2.1. Identify							A		B			
11.2.2. Safe entry procedures												
11.2.2.1. Test							2b		b			
11.2.2.2. Ventilate							2b		b			
11.3. Perform rescue												
11.3.1. Pole top							2b/1b		b			
11.3.2. Manhole							3c/1c		b			
11.3.3. Aerial lift							3c/1c		b			
11.3.4. Electric Shock							2b		b			
11.4. Supervisory safety												
11.4.1. Maintenance of de-energized distribution system												
11.4.1.1. Over 600 volts									B			
11.4.1.2. Under 600 volts									B			
11.4.2. Maintenance of energized distribution system												
11.4.2.1. Over 600 volts									B			
11.4.2.2. Under 600 volts									B			
11.4.3. Maintenance of equipment status boards or logs									B			
11.5. Conduct safety inspections												
11.5.1. Hot line tools	*						b		c			
11.5.2. Rubber personal protective equipment	*						b		c			
11.5.3. Protective equipment												
11.5.3.1. Rubber							b		c			
11.5.3.2. Polyethylene							b		c			
11.6. Cardiopulmonary resuscitation (CPR)							3c					
11.7. Initial Federal Hazard Communication Training Program (FHCTP) Ref: DoD 6050.5-G-1; AFOSH 121-21; AFI 91-302							B					

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		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
12. AFS SPECIFIC PUBLICATIONS Ref: TO's 0-1-01, 0-1-02, 00-2-1, 00-5-1, 00-5-2, 00-20-7												
12.1. Use indexes to locate numbers and titles of manuals, instructions, technical orders, and forms to									B			
12.2. Locate desired information												
12.2.1. Standard publications									b			
12.2.2. Technical orders									b			
12.2.3. National Electrical Code (NFPA 70)							2b		b			
12.2.4. National Electrical Safety Code							b		b			
12.2.5. National Fire Alarm Code (NFPA 72)							A		A			
12.3. Use technical publications												
12.3.1 Maintain									b			
12.3.2 Operate									b			
12.3.3 Troubleshoot									b			
13. PLANNING AND SCHEDULING WORK Ref: AFJMAN 32-1082, AFJMAN 32-1083; MIL STD 15-3; National Electrical Code, National Electrical Safety Code, AFI 32-1031; AFM 171-2												
13.1. Planning job requirements												
13.1.1. Use wiring diagrams, schematics, specification sheets, drawings, staking sheets, and one line diagrams							2b		C			
13.1.2. Determine the type and size of electrical system												
13.1.2.1. Under 600 volts							A		C			
13.1.2.2. Over 600 volts							A		C			
13.2. Plan sequence and production priorities for work operation									B			
13.3. Inspection and maintenance												
13.3.1. Determine maintenance requirements Ref: AFM 91-3									C			
13.3.2. Use maintenance forms and automated products Ref: AFR 85-2; AFM 171-2									A			

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		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
13.4. Plan work assignments and priorities Ref: AFI 32-1031									A			
14. ELECTRICAL FUNDAMENTALS Ref: TO 31-1-141 Series; National Electrical Code												
14.1. Identify electrical terms and symbols							A		B			
14.2. Electrical principles												
14.2.1. DC circuits							A		C			
14.2.2. AC circuits							B		C			
14.3. Construct basic electric circuits							2b		b			
14.4. Compute for voltage, current, resistance, and power	*						2b		b			
14.5. Measure electrical properties in circuits and components							2b		b			
14.6. Transformer theory							B		C			
14.7. Compute load balance									b			
14.8. Fundamentals of electrical systems from primary generation to load							B					
15. ELECTRONIC FUNDAMENTALS Ref: T.O. 31-1-141 series												
15.1. Basic electronic principles							A		B			
15.2. Identify electronic terms and symbols							A		B			
15.3. Principles of harmonics									B			
16. SUBSTATION EQUIPMENT Ref: AFI 32-1064; AFOSH STD 91-10, Lineman's and Cableman's Handbook; ANSI C-2; National Electrical Safety Code												
16.1. Fundamentals												
16.1.1. Recloser							A		B			
16.1.2. Circuit breakers							A		B			
16.1.3. Potential transformers							A		B			
16.1.4. Current transformers							A		B			
16.1.5. Protective relays							A		B			
16.1.6. Voltage regulators							A		B			
16.1.7. Insulating mediums												
16.1.7.1. Air							A		B			
16.1.7.2. Oil							A		B			
16.1.7.3. Vacuum							A		B			
16.1.7.4. Gas							A		B			

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		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
16.1.8. Capacitor banks									b			
16.1.9. Battery banks							A		B			
16.2. Install												
16.2.1. Potential transformers									b			
16.2.2. Current transformers									b			
16.3. Perform recurring maintenance												
16.3.1. Recloser									B			
16.3.2. Circuit breakers									B			
16.3.3. Power transformers									B			
16.3.4. Protective relays									B			
16.3.5. Voltage regulators									B			
16.4. Troubleshoot substation equipment									B			
17. OVERHEAD DISTRIBUTION SYSTEMS Ref: AFMs 88-9; AFJMAN 32-1082; AFIs 32-1031, 32-1064, 32-1063; AFOSH STD 91-2, 91-10; 91-31; Lineman's and Cableman's Handbook; ANSI C-2; National Electrical Code; Hot Stick Manual (AB Chance)												
17.1. Climb poles												
17.1.1. Using gaffs	*						2b/1b		b			
17.1.2. Working on pole components	*						2b		b			
17.1.3. Traversing obstacles	*						2b		b			
17.2. Handle poles												
17.2.1. Load/Unload poles							1b		b			
17.2.2. Transport poles							a		b			
17.2.3. Frame poles									b			
17.2.4. Set utility poles	*						2b		b			
17.3. Install												
17.3.1. Guys							1b		b			
17.3.2. Overhead line conductors	*						2b/1b		b			
17.3.3. Anchors							a		b			
17.3.4. Pole equipment												
17.3.4.1. Conductor support devices	*						2b/1b		b			
17.3.4.2. Transformers	*						2b/1b		b			
17.3.4.3. Protective devices	*						2b/1b		b			
17.3.5. High Voltage Switches							A		B			
17.3.6. Armor rod									B			
17.3.7. Grounding set	*						2b/1b		b			

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		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
17.3.8. Services												
17.3.8.1. Drop	*						1b		b			
17.3.8.2. Laterals							b		b			
17.4. Inspect poles and installed equipment	*						1b		b			
17.5. Perform di-electric test of oil									B			
17.6. Perform recurring maintenance on overhead distribution equipment							a		B			
17.7. Isolate system faults							1b		B			
17.8. Splice de-energized overhead conductor							1b		B			
17.9. Splice energized overhead conductor									B			
17.10. Replace conductor support on energized conductors									B			
17.11. Replace conductor support on de-energized conductors							1b					
17.12. Transfer de-energized conductors from old pole to new pole							b		B			
17.13. Transfer energized conductors from old pole to new pole									B			
17.14. Perform transformer connections	*						1b		c			
17.15. Plan Distribution Systems									B			
17.16. Construct Distribution Systems									B			
18. UNDERGROUND DISTRIBUTION SYSTEMS Ref: AFMs 88-9; AFJAM 32-1082; AFI 32-1064; AFOSH STD 91-10, 91-25, 91-31; Lineman's and Cableman's Handbook; ANSI C-2; National Electrical Safety Code												
18.1. Install												
18.1.1. Direct burial cable	*						b		b			
18.1.2. Underground duct systems							a		b			
18.1.3. Underground cable in duct							1b		B			
18.1.4. Transformers												
18.1.4.1. On pads	*						b		b			
18.1.4.2. In vaults							b		b			
18.1.5 Grounding set	*						2b/1b		b			
18.2. Splice high voltage underground cable												
18.2.1. Using tape	*						2b		b			
18.2.2. Using pre-form kits							a		b			

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18.3. Terminate high voltage underground cable	*						b		b			
18.4. Inspect												
18.4.1. Terminations							b		b			
18.4.2. Underground splices							b		b			
18.5. Perform high potential DC test on underground cable	**						1b		b			
18.6. Troubleshoot underground cables for faults	*						2b/1b		b			
18.7. Trace underground cables with cable test set	*						2b/1b		b			
18.8. Isolate system faults							2b/1b		B			
18.9. Fabricate load break elbow	*						3c/2c					
18.10. Plan distribution systems									B			
18.11. Construct distribution systems									B			
19. DISTRIBUTION SYSTEMS, 600 VOLTS AND LESS Ref: AFI 32-1063; AFJMAN 32-1083; AFOSH STD 91-10; National Electrical Code												
19.1. Install												
19.1.1. Service entrance							1b		b			
19.1.2. Service equipment												
19.1.2.1. Meter base							1b		b			
19.1.2.2. Disconnect							2b		b			
19.1.3. Grounding												
19.1.3.1. System	*						2b		b			
19.1.3.2. Equipment	*						2b		b			
19.1.3.3. Bonding	*						2b		b			
19.1.4. Feeders	*						2b		b			
19.1.5. Distribution panels							2b		b			
19.1.6. Branch circuits	*						2b		b			
19.1.7. Devices												
19.1.7.1. Switches							2b		B			
19.1.7.2. Receptacles							2b		B			
19.1.8. Fault protection												
19.1.8.1. Ground fault circuit interrupter (GFCI)												
19.1.8.1.1. Receptacle							2b		B			
19.1.8.1.2. Breaker							2b		B			
19.1.8.2. Arc fault circuit interrupter (AFCI)							a		A			
19.1.9. Wiring Methods												
19.1.9.1. Nonmetallic sheathed cable							1b		B			

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19.1.9.2. Surface metal raceway							a		B			
19.1.9.3. Conduit												
19.1.9.3.1. Rigid Metal							2b		b			
19.1.9.3.2. Electrical metallic tubing (EMT)							2b		b			
19.1.9.3.3. Flexible metal							2b		b			
19.1.10. Electrical systems in hazardous locations							b		b			
19.1.11. Dry Transformers							a		B			
19.1.12. Overcurrent protection devices	*						2b		b			
19.1.13. Lighting fixtures												
19.1.13.1. Incandescent							2b		B			
19.1.13.2. Fluorescent							2b		B			
19.2. Distribution systems												
19.2.1. Maintain							b		b			
19.2.2. Troubleshoot	*						2b		b			
19.3. Read service meters									B			
19.4. Maintain transformers							b		B			
19.5. Electrical systems in hazardous locations												
19.5.1. Maintain							b		b			
19.5.2. Troubleshoot							b		b			
19.6. Select material requirements for distribution systems							2b		B			
20. AIRFIELD LIGHTING SYSTEMS Ref: AFI 32-1044; AFP 91-28; TO's 35F5-3-12-1, 35F5-4-2-1												
20.1. Airfield lighting system configuration							B		C			
20.2. Replace												
20.2.1. Airfield lighting systems components							2b		b			
20.2.2. Condenser discharge components									b			
20.2.3. Rotating beacon components							a		b			
20.2.4. Airfield fixture lamps	*						3c					
20.2.5. Isolating (IL) transformers	*						3c					
20.3. Maintain airfield lighting systems												
20.3.1. Constant current regulator	*						2b		b			
20.3.2. Control components	*						b		b			
20.3.3. Counterpoise components							b		b			
20.3.4. Fixtures	*						2b		b			
20.3.5. Airport beacon							b		b			
20.3.6. Obstruction lights							b		b			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
20.3.7. Condenser discharge light unit							1b		b			
20.3.8. Master sequence control timer unit									B			
20.3.9. Approach lights							a		b			
20.3.10. Approach path indicators	*						a		b			
20.4. Isolate airfield lighting circuits or equipment for test	*						2b		b			
20.5. Test airfield lighting cable							2b		b			
20.6. Inspect												
20.6.1. Airfield beacon							b		b			
20.6.2. Obstruction lights							b		b			
20.7. Connect airfield lighting constant current regulator for emergency operation	*								c			
20.8. Troubleshoot												
20.8.1. Airfield lighting circuits	*						2b		b			
20.8.2. Airfield lighting control circuits							1b		b			
20.8.3. Condenser discharge light unit							1b		b			
20.9. Repair airfield lighting cable												
20.9.1. Use connector splice kit	*						2b		c			
20.9.2. Use resin splice kit							b		c			
21. LIGHTING SYSTEMS (STREET, SECURITY, RECREATIONAL) Ref: AFJAM 32-1082; Lineman's and Cableman's Handbook; National Electrical Code												
21.1. Install												
21.1.1. High intensity discharge (HID) light fixtures							2b		B			
21.1.2. Quartz fixtures							2b		B			
21.1.3. Lighting control components							2b		B			
21.2. Adjust												
21.2.1. Controls							b		B			
21.2.2. Fixtures									B			
21.3. Relamp lighting system							2b		B			
21.4. Troubleshoot lighting systems							2b		B			
22. MOTORS AND MOTOR CONTROL CIRCUITS Ref: AFJMAN 32-1083; AFI 32-1063; National Electrical Code												
22.1. Install												
22.1.1. Motors	*						1b		b			
22.1.2. Motor control circuits	*						1b		b			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
22.2. Maintain												
22.2.1. Motors							b		b			
22.2.2. Motor control circuits							b		b			
22.3. Troubleshoot												
22.3.1. Motors							1b		b			
22.3.2. Motor control circuits												
22.3.2.1. Across-the-line starters							1b		b			
22.3.2.2. Reduced voltage starters												
22.3.2.2.1. STAR DELTA							a		b			
22.3.2.2.2. Auto transformer							a		b			
22.3.2.2.3. Resistor							a		b			
22.3.2.3. Solid state							a		b			
22.3.2.4. Reversing starters							a		b			
22.3.2.5. Frequency drive									A			
23. ELECTRICAL GROUND SYSTEMS Ref: AFI 32-1065; NFPA 77, NFPA 780, IEEE Standard 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems; National Electrical Code												
23.1. Principles												
23.1.1. Primary distribution system grounds							B		C			
23.1.2. Facility subsystem grounds							B		C			
23.1.3. Lightning protection systems							B		C			
23.1.4. Static grounds							B		C			
23.1.5. Computer grounds							A		B			
23.2. Install												
23.2.1. Primary distribution system grounds							b		B			
23.2.2. Facility subsystem grounds							b		B			
23.2.3. Lightning protection system							b		B			
23.2.4. Computer grounds									b			
23.3. Maintain												
23.3.1. Lightning protection system							b		b			
23.3.2. Primary distribution system grounds							b		b			
23.3.3. Facility subsystem grounds							b		b			
23.4. Test												
23.4.1. Lightning protection systems							b		B			
23.4.2. Primary distribution system grounds							a		B			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
23.4.3. Facility subsystem grounds							1b		B			
23.4.4. Computer grounds									B			
23.5. Troubleshoot												
23.5.1. Primary distribution system grounds									b			
23.5.2. Facility subsystem grounds									b			
23.5.3. Computer grounds									b			
23.5.4. Lightning protection									b			
24. SPECIAL PURPOSE SYSTEMS Ref: AFMs 85-5, AFI 32-2001; AFJMAN 32-1083; TO 31S9 series; National Electrical Code												
24.1. Principles												
24.1.1. Fire alarm systems							A		B			
24.1.2. Intrusion detection systems									B			
24.1.3. Emergency lighting systems							A		B			
24.1.4. Cathodic protection systems									B			
24.1.5. Electrical appliances												
24.1.5.1. Commercial							A		B			
24.1.5.2. Domestic							A		B			
24.1.6. Power conditioners									B			
24.1.7. Traffic control systems									B			
24.1.8. Base warning systems									B			
24.2. Install												
24.2.1. Fire alarm systems							a		B			
24.2.2. Emergency lighting systems							a		B			
24.2.3. Electrical appliances												
24.2.3.1. Commercial							a		B			
24.2.3.2. Domestic							a		B			
24.3. Maintain												
24.3.1. Fire alarm systems							a		B			
24.3.2. Intrusion detection systems									B			
24.3.3. Emergency lighting systems							a		B			
24.3.4. Cathodic protection systems									B			
24.3.5. Electrical appliances												
24.3.5.1. Commercial									B			
24.3.5.2. Domestic									B			
24.3.6. Traffic control systems									B			
24.3.7. Base warning systems									B			
24.4. Troubleshoot												
24.4.1. Fire alarm systems							a		B			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
24.4.2. Intrusion detection systems									B			
24.4.3. Emergency lighting systems							a		B			
24.4.4. Cathodic protection systems									B			
24.4.5. Electrical appliances												
24.4.5.1. Commercial									B			
24.4.5.2. Domestic									B			
24.4.6. Traffic control systems									B			
24.4.7. Base warning systems									B			
25. TOOLS AND EQUIPMENT Ref: AFI 32-1064; TO's 31-10-3, 32-1-2, 32-1-101; 32-1-151; AFOSH STD 91-10, 91-31; Hot Sticks Manual (AB Chance); ANSI C-2; National Electrical Safety Code												
25.1. Maintain												
25.1.1. Hot line tools	*						b		c			
25.1.2. Rubber personal protective equipment	*						b		c			
25.1.3. Protective equipment												
25.1.3.1. Rubber							b		c			
25.1.3.2. Polyethylene							b		c			
25.1.4. Pole trailer									B			
25.1.5. Reel jacks									B			
25.1.6. Cable pulling guide									B			
25.1.7. Handline							a		B			
25.1.8. Block and tackle							a		B			
25.1.9. Chain hoist							a		B			
25.1.10. Climbing equipment	*						2b		B			
25.2. Use electrician's handtools							2b		B			
25.3. Use portable power tools							2b		B			
25.4. Test hot line tools									B			
25.5. Use test equipment												
25.5.1. Multimeter	*						3c		B			
25.5.2. Clamp-on ammeter	*						3c/2c		B			
25.5.3. Phase rotation meter	*						1b		B			
25.5.4. Megohmmeter	*						3c		B			
25.5.5. Circuit breaker tester									B			
25.5.6. Tachometer									B			
25.5.7. Frequency meter									B			
25.5.8. Cathodic protection set									B			
25.5.9. Recording meters									B			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
25.5.10. Circuit tracer							1b/b		B			
25.5.11. Infrared scanner									B			
25.5.12. Gas detector							2b		B			
25.5.13. Hot stick tester							a		B			
25.5.14. High voltage phase tester	*						1b		B			
25.5.15. Relay tester									B			
25.5.16. Earth resistance tester							1b		B			
25.5.17. Cable fault locator, low voltage							1b		B			
25.5.18. Cable locator							1b		B			
25.5.19. High potential DC tester							1b/b		b			
25.5.20. High voltage audible indicator							1b		B			
25.6. Perform operator's maintenance on aerial lift truck with insulated bucket Ref: AFI 24-301; TO's 36A12-5-1-181 and 182	*						1b		B			
25.7. Perform operator's maintenance on line maintenance truck	*						1b		B			
25.8. Operate aerial lift truck controls	*						1b		B			
25.9. Operate line maintenance truck controls	*						1b		B			
25.10. Use hand signals to direct line maintenance truck operation	*						1b		B			
25.11. Di-electrically test aerial lift trucks							a		B			
25.12. Di-electrically test line maintenance trucks									B			
25.13. Use conduit benders												
25.13.1. Manual							2b		b			
25.13.2. Hydraulic							1b		b			
25.13.3. Electric							1b		b			
25.14. Use manual conduit threaders							1b		b			
25.15. Use power conduit threaders							1b		B			
25.16. Use soldering equipment							2b					
25.17. Use hydraulic knockout							1b		B			
26. FOREIGN ELECTRICAL SYSTEMS												
26.1. Electrical terms and systems									A			
26.2. Electrical distribution systems												
26.2.1. Voltages									B			
26.2.2. Wiring color code									B			
26.2.3. Wire sizes									B			
26.2.4. Installation									B			
26.2.5. Wire or cable types									B			
26.3. Distribution panels									B			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
26.4. Protective devices									B			
27. AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES Ref: AFIs 10-210; 10- 211; 32-1026; TOs 35E-5-6-1, 35E4-132-1, 35E4-94-1; Army TMs 10-8340-207-14, 10-450-200-12; WMP-1, Annex S; (Mar 95); AFPAM 10-219, Vol 2, 3, 4, 5 , & 10												
27.1. Airfield support systems												
27.1.1. Mobile Aircraft Arresting System (MAAS) Ref: TO's 35E8-2-10-3; 35E8-2-5-4; 35E8-2-10-1S-1, 35E8-2-11-1, 35E8-2-11-2; AFPAM 10-219, Vol 3, 4 & 5; AFI 13-217												
27.1.1.1. Install							A		b			
27.1.1.2. Maintain									b			
27.1.2. Emergency Airfield Lighting System (EALS) Ref: AFPAM 10-219, Vol 3, 4 & 5												
27.1.2.1. Install												
27.1.2.1.1. Approach	♦						2b/1b		B			
27.1.2.1.2. Runway	♦						2b/1b		B			
27.1.2.1.3. PAPI	♦						2b/1b		B			
27.1.2.1.4. Taxiway	♦						1b		B			
27.1.2.1.5. Distance to go (DTG)	♦						1b/b		B			
27.1.2.1.6. Regulator	♦						2b/1b		B			
27.1.2.1.7. Generator	♦						1b		B			
27.1.2.1.8. Obstruction lights	♦						1b		B			
27.1.2.2. Operate												
27.1.2.2.1. Regulator	♦						1b		B			
27.1.2.2.2. Generator	♦						1b		B			
27.1.2.2.3. Obstruction lights							1b		B			
27.1.2.3. Maintain												
27.1.2.3.1. Approach							b		B			
27.1.2.3.2. Runway							b		B			
27.1.2.3.3. PAPI							b		B			
27.1.2.3.4. Taxiway							b		B			
27.1.2.3.5. Distance to go (DTG)							b		B			
27.1.2.3.6. Regulator							b		B			
27.1.2.3.7. Generator							b		B			
27.1.2.3.8. Obstruction lights							b		B			
27.2. Expedient beddown methods												

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
27.2.1. Harvest Eagle (HE) assets												
27.2.1.1. Tent lighting Ref: AFPAM 10-219, Vol 5												
27.2.1.1.1. Install							b		b			
27.2.1.1.2. Remove							b		b			
27.2.1.2. Electrical Distribution System Ref: TO's 00-105K-2;40W4-9-1C; 40W4-13-1; 50D1-3-1; 35E4-169-1; AFPAM 10-210, Vol 5												
27.2.1.2.1. Install	♦						b		b			
27.2.1.2.2. Maintain	♦						b		b			
27.2.1.2.3. Troubleshoot	♦						b		b			
27.2.2. Harvest Falcon (HF) Assets												
27.2.2.1. Remote Area Lighting (RAL) Set Ref: AFPAM 10-219, Vol 5; TO 00-105-12												
27.2.2.1.1. Install	♦						2b		b			
27.2.2.1.2. Operate	♦						b		b			
27.2.2.1.3. Maintain	♦						b		c			
27.2.2.2. Telescopic floodlight set Ref: TO 35F5-5-6-1; AFPAM 10-219, Vol 5												
27.2.2.2.1. Install							a		b			
27.2.2.2.2. Operate							a		b			
27.2.2.2.3. Maintain									B			
27.2.2.3. Field laundry Ref: TO 50D1-3-1; AFPAM 10-219, Vol 5; TM 10-3510-201-35P												
27.2.2.3.1. Install power supply							b		b			
27.2.2.3.2. Maintain									B			
27.2.2.4. Harvest Falcon/Eagle Kitchen Equipment Ref: TO 35E4-169-1; AFPAM 10-219, Vol 5												
27.2.2.4.1. Install power supply	♦						b		b			
27.2.2.4.2. Maintain electrical systems							b		b			
27.2.2.5. Reverse osmosis water purification unit (ROWPU) electrical system Ref: TO's 40W4-13-2, 40W4-13-41; 30W4-9-1; TM 5-4610-215-24; AFPAM 10-219, Vol 2 & 5												
27.2.2.5.1. Install							b		b			
27.2.2.5.2. Troubleshoot							a		B			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
27.2.2.6. Bare base electrical distribution system Ref: TO 35C6-9-1; 00-105A-12; AFPAM 10-219, Vol 5												
27.2.2.6.1. Primary distribution system												
27.2.2.6.1.1. Install												
27.2.2.6.1.1.1. Power source							A		B			
27.2.2.6.1.1.2. Primary Distribution Center (PDC)	♦						2b/1b		b			
27.2.2.6.1.1.3. Secondary Distribution Center (SDC-HV section)	♦						2b/1b		b			
27.2.2.6.1.1.4. High voltage cable	♦						2b/1b		b			
27.2.2.6.1.2. Operate												
27.2.2.6.1.2.1. Power source							A		B			
27.2.2.6.1.2.2. PDC	♦						2b/1b		b			
27.2.2.6.1.2.3. SDC-HV section	♦						2b/1b		b			
27.2.2.6.1.3. Maintain												
27.2.2.6.1.3.1. PDC	♦						b		b			
27.2.2.6.1.3.2. SDC-HV section	♦						b		b			
27.2.2.6.1.4. Troubleshoot												
27.2.2.6.1.4.1. PDC	♦						1b		b			
27.2.2.6.1.4.2. SDC-HV section	♦						1b		b			
27.2.2.6.2. Secondary distribution system												
27.2.2.6.2.1. Install												
27.2.2.6.2.1.1. Power source							A		B			
27.2.2.6.2.1.2. SDC-LV section	♦						2b/1b		b			
27.2.2.6.2.1.3. Power distribution pedestal (PDP)	♦						2b		b			
27.2.2.6.2.1.4. LV cables	♦						2b		b			
27.2.2.6.2.2. Operate												
27.2.2.6.2.2.1. Power source							A		B			
27.2.2.6.2.2.2. SDC-LV section	♦						2b/1b		b			
27.2.2.6.2.2.3. PDP	♦						2b		b			
27.2.2.6.2.3. Maintain												
27.2.2.6.2.3.1. SDC-LV section	♦						b		b			
27.2.2.6.2.3.2. PDP	♦						b		b			
27.2.2.6.2.4. Troubleshoot												
27.2.2.6.2.4.1. SDC-LV section	♦						1b		b			
27.2.2.6.2.4.2. PDP	♦						1b		b			
27.2.2.6.2.4.3. LV cables	♦						1b		b			
27.2.2.6.3. Install Grounds	♦						b		b			

1. Task Knowledge And Technical References	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) QTP	(1) RAM	(2) Course
27.2.2.7. Install TEMPER tent lighting Ref: TO 35E5-3-6-1; AFH 10-222, Vol 1; AFPAM 10-219, Vol 5							2b		b			
27.2.3. Electrical support Ref: AFPAM 10-219, Vol 5												
27.2.3.1. Facility repair Ref: AFI 32-1067; AFPAM 10-219, Vol 3												
27.2.3.1.1. Electrical systems expedient repair							B		B			
27.2.3.1.2. Expedient generator installation	♦						b		b			
27.2.3.2. Medical facilities									b			
27.2.3.3. Chemically hardened Air Management Plant (CHAMP)									A			
27.2.3.4. Secondary Distribution Center (-50)									A			
27.2.3.5. Install electrical system in Alaska Small Shelter System (SSS) Ref: TO 35E5-6-11									A			
27.2.3.6. Install electrical system in California Medium Shelter System (MSS) Ref: TO 35E5-6-21									A			
27.2.3.7. Deployable Power Generation and Distribution System (DPGDS)									A			
27.3. Miscellaneous Support Special Purpose Vehicles/Equipment Ref: AFIs 10-210; 23-101; 10-210; 24-301; AFOSH 91-46; AFPAM 10-219, Vol 4; AFPD 25-1; AFMANs 24-306, 24-309; TO's. series 36A2; 36A12; 36C12; 35C6; TA 12												
27.3.1. Dump truck												
27.3.2. Front-end loader/forklift (AT and RT)												
27.3.3. Tractor mounted backhoe												
27.3.4. Trencher												
27.3.5. Electrical Line Truck												
27.3.6. High Mobility Multipurpose Wheeled Vehicle (HMMWV)												

GENERAL CONTINGENCY

1 **Tasks, Knowledge, And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) SC/QTP	(1) CDC	(2) Course
28. GENERAL CONTINGENCY RESPONSIBILITIES **TR: AFIs 10-201;10-207; 10-210, 10-211, 32-1026; 32-7062; AFH 32-4011, Vol 1; T.O.s 35E5-6-1, 35E4-132-1, 35E4-94-1; War Mobilization Plan (WMP)-1, Annex S;** **AFPAM 10-219, Vol 1- 10**												
28.1. Prime BEEF (PB) Orientation **TR: AFDD 42; AFIs 10-403; 51-401; AFPD 51-4;** **AFCESA/CEX - Prime BEEF Equipment Supply List (ESL)**												
28.1.1. The Prime BEEF (PB) Program												
28.1.2. The Prime BEEF organization												
28.1.3. Code of Conduct												
28.1.4. The Law of Armed Conflict												
28.1.5. The Prime BEEF equipment requirements												
28.1.5.1. Consolidated tool kits (CTK)												
28.1.5.2. Equipment Issues												
28.1.5.3. Equipment Storage												
28.1.5.4. Mobility bags												
28.1.5.5. Weapons TR: AFIs 10-210, 31-101, 31-207; 36-2226, 91-202; AFPAM 10-219, Vol 8												
28.1.5.5.1. Issue												
28.1.5.5.2. Control												
28.1.5.5.3. Courier												
28.1.5.6. Team kits												
28.1.5.7. Body armor												
28.1.5.8. Tactical communication system												
28.1.6. Individual responsibilities												
28.1.7. Accountability												
28.1.8. Marshal Equipment and Personal												
28.2. First Aid Techniques **TR: AFIs 36-2238, 32-4001, 48-110;** **AFH 36-2218,Vol 2**												
28.2.1. Individual's responsibilities for administering first aid												
28.2.2. Self aid and buddy care concept												

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1 **Tasks, Knowledge, And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) SC/QTP	(1) CDC	(2) Course
28.2.3. Basic lifesaving steps												
28.2.4. Move and transport injured personnel												
28.3. Field Sanitation & Hygiene Measures **TR: AFIs 48-110, 10-210; AFDD 35; ARMY FM 21-10**												
28.3.1. Personal hygiene measures												
28.3.2. Countermeasures												
28.3.2.1. Disease and pestilence												
28.3.2.2. Communicable diseases												
28.3.3. Sanitation requirements												
28.3.3.1. Field												
28.3.3.2. Kitchen & Mess												
28.4. Self Protection from Extreme Weather **TR: A77; AFPAM 10-219, Vol 5; Army FM 21-76**												
28.4.1. Hot weather survival techniques												
28.4.2. Cold weather survival methods												
28.5. Force Protection **TR: Joint Pub 1-02; AFH 32-4014, Vol 4; AFH 10-222, Vol 3; AFPAM 10-219 Vol 2; DoD 0-2000.12-H; Joint Services Guide 5260**												
28.5.1. Personal / Work Party Security TR: AFIs 36-2226, 36-2209, A88, 31-301, 10-403, 10-404, 31-207, 10-215; AFPAM 10-219, Vol 3 ; Army FMs 21-75; 7-8												
28.5.1.1. Combat skills												
28.5.1.2. Defensive tactics												
28.5.1.2.1. Cover and concealment												
28.5.1.2.2. Individual movement												
28.5.1.2.3. Weapons fire control												
28.5.1.2.4. Communications												
28.5.1.2.5. Field fortifications												
28.5.1.2.6. Guard placement/perimeter defense												
28.5.1.2.7. Recognition code system												

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GENERAL CONTINGENCY

1 **Tasks, Knowledge, And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) SC/QTP	(1) CDC	(2) Course
28.5.2. Air Base Defense (ABD) Interface TR: AFIs 31-301, 31-702												
28.5.2.1. Ground threats												
28.5.2.2. ABD concept												
28.5.2.3. Defensive tactics												
28.5.2.4. Force movement												
28.5.2.5. Weapons and fire control												
28.5.2.6. Tactical barriers												
28.5.2.7. Fighting/Protective Positions												
28.5.3. Convoy Techniques TR: AFIs 36-2209, 31-301, 10-211, 36-2225, 31-101; AFPAM 10-219, Vol 3; Army FMs 7-8, 7-10, 55-30												
28.5.3.1. Convoy principles												
28.5.3.1.1. Organization												
28.5.3.1.2. Command and control												
28.5.3.1.3. Vehicle preparation												
28.5.3.1.4. Security Forces interface												
28.5.3.1.5. Counter ambush techniques												
28.5.3.1.6. Defensive ambush measures												
28.5.4. Passive Defense Techniques TR: AFPAM 10-219, Vol 2 & 5; AFIs 10-210, 10-11, 10-212, 32-4001, 31-101, 31-210, 10-401 Vol 1 &2, 31-301;TM 5-1080-200-13/P; AFH 31-302; AFMAN 32-4005; AFPDs 31-1, 71-1; AFMD 39; AFDD 2-4.2												
28.5.4.1. Hardening/splinter protection												
28.5.4.2. Aircraft revetment TR: AFPAM 10-219, Vol 2; AFMAN 10-401 Vol 1 & 2; 32-1071 Vols 1-3; AFDD 2-4.2; AFM 32-4005; AFIs 31-101, 31-210, 31-301												
28.5.4.2.1. Assemble kit-type revetments												
28.5.4.2.2. Impoverished revetments												
28.5.4.3. Resource dispersal												
28.5.4.4. Camouflage, Concealment, and Deception (CCD) Techniques TR: AFPAM 10-219, Vol 2 & 3												

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GENERAL CONTINGENCY

1 **Tasks, Knowledge, And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) SC/QTP	(1) CDC	(2) Course
28.5.4.5. Terrorism TR: AFI 31-210, AFPAM 10-219, Vol 2; Joint Pub 1-02												
28.5.4.5.1. Awareness												
28.5.4.5.2. Countermeasures												
28.5.4.6. Chemical warfare protection TR: AFMAN 32-4005; AFIs 10-210, 13-218, 21-101, 32-4001; AFPAM 10-219 Vol 3 & 4; AFH 32-4014 Vol 2; AFMAN 32-4005, AFVA 32-4012												
28.5.4.6.1. Individual protective equipment												
28.5.4.6.2. Wartime threat / protective actions / procedures												
28.5.4.6.3. Decontaminating vehicle / equipment												
28.5.4.6.4. Decontaminate shelter entry point												
28.5.4.6.5. USAF standard alarm signals TR: AFPAM 10-219 Vol 2; AFVA 32-4011												
28.5.4.6.6. Protective shelters												
28.6. Base Denial **TR: AFIs 10-210, 10-211; AFPAM 10-219, Vol 3; Army FM 5-250; TO 11A-1-66; WMP-1, Annex S**												
28.6.1. Base denial concept												
28.6.2. Denial methods												
28.7. Multi-Contingency/Warskills Training Requirements **TR: AFI 10-210; WMP-1, Annex S**												
28.7.1. Multi-warskilling concept												
28.7.2. Vehicle Qualifications TR: AFI 10-210; AFPAM 10-219, Vol. 3, 4, 8; AFPD 25-1; AFMAN 24-309; AFI 23-101; 25-101; AS 12; T.O.s 36A2 series, 36M2 series, 36A12 series; War & Mobilization Plan (WMP), Vol. I, Annex S; HST/RTP												
28.7.2.1. Contingency vehicles and equipment responsibilities												

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GENERAL CONTINGENCY

1 **Tasks, Knowledge, And Technical References**	2. Core Tasks	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training / Information Provided					
		A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
		Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2)	(1) CDC	(2) SC/QTP	(1) CDC	(2) Course
28.7.2.2. Obtain government driver's license												
28.7.2.3. Qualify on contingency vehicles												
28.7.2.4. General purpose vehicles (up to 14,000 GVW)												
28.8. Explosive Ordnance Reconnaissance (EOR) **TR: AFI 10-210; AFPAM 10-219, Vol 3 & 4; Army FMs 21-16, 21-75**												
28.8.1. Potential ordnance												
28.8.2. Marking procedures												
28.8.3. Reporting procedures												
28.8.4. Mass ordnance clearance												
28.9. Beddown shelters **TR: T.0.s 35E5-6-1, 35E4-132-1, 35E4-94-1; TM 10-4500-200-13; AFI 10-219, Vol 2, 3 & 5**												
28.9.1. Bare base concept												
28.9.2. Beddown package assets												
28.9.2.1. Harvest Eagle												
28.9.2.2. Harvest Falcon												
28.9.2.3. TEMPER Tent TR: AFPAM 10-219, Vol 2, 5; AFH 10-222, Vol 1; T.O. 35E5-6-1												
28.9.2.4. Small Shelter System (SSS) TR: T0 35E5-6-11												
28.10. Rapid Runway Repair (RRR) **TR: AFIs 10-210, 10-211, 10-212; T.O.s 35E2-3-1, 35E2-2-7, 35E2-5-1; AFPAM 10-219, Vol 4**												
28.10.1. Base Recovery concepts												
28.10.2. Damage assessment												
28.10.3. Damage reporting												
28.10.4. Rapid Runway Repair (RRR) concept												
28.10.4.1. RRR Philosophy												
28.10.4.2. AM-2 Matting												
28.10.4.3. Fiberglass Mat												
28.10.5. Spall Repair												

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AFQTP Documentation Record
For AFSC 3E0X1

- Download applicable AFQTPs at http://www.afcesa.af.mil/Directorate/CEO/Training/Enlisted/enlisted.htm
- Trainers/Certifiers enter their name and initials in the identification block at beginning of the STS
- Upon administering AFQTPs, enter start date in column 4 of this record
- Upon completion of each unit, document columns 5, 6, and 7
- Upon completion of applicable CerTests, trainer will place the completion date in column 8
- Transcribe by entering current date in columns 5 and 8, Trainees & Trainers Initials in columns 6 & 7

1	2	3	4	5	6	7
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	**◆ SEE NOTE 1 ** 7 LEVEL * 5 LEVEL**	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**
11.	**AFS SPECIFIC SAFETY STANDARDS** **Ref: AFQTP Module 11 - AFS SPECIFIC SAFETY STANDARDS**					
11.1.3.1.	Use AF Form 269 when performing switching	**				
11.1.3.2	Use AF Form 269 when blocking and tagging	**				
11.1.4	Plan safe clearance	**				
11.5.1	Hotline tools (Conduct safety inspections of)	*				
11.5.2	Rubber protective equipment (Conduct safety inspections of)	*				
14	**ELECTRICAL FUNDAMENTALS** **Ref: AFQTP Module 14 - ELECTRICAL FUNDAMENTALS**					
14.4.	Compute for voltage, current, resistance, and power	*				
17	**OVERHEAD DISTRIBUTION SYSTEMS** **Ref: AFQTP Module 17 - OVERHEAD DISTRIBUTION SYSTEMS**					
17.1.1.	Using gaffs (Climb poles)	*				
17.1.2.	Working on pole components (Climb poles)	*				

1	2	3	4	5	6	7
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	**◆ SEE NOTE 1 ** 7 LEVEL * 5 LEVEL**	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**
17.1.3.	Traversing obstacles (Climb poles)	*				
17.2.4.	Set utility poles (Handle poles)	*				
17.3.2	Overhead line conductors (Install)	*				
17.3.4.1	Conductor support devices (Install, Pole equipment)	*				
17.3.4.2.	Transformers (Install, Pole equipment)	*				
17.3.4.3.	Protective devices (Install, Pole equipment)	*				
17.3.7	Grounding set (Install)	*				
17.3.8.1	Service drops (Install)	*				
17.4	Inspect poles and installed equipment	*				
17.14	Perform transformer connections	*				
18	**UNDERGROUND DISTRIBUTION SYSTEMS** **Ref: AFQTP Module 18 - UNDERGROUND DISTRIBUTION SYSTEMS**					
18.1.1.	Direct burial cable (Install)	*				
18.1.4.1.	On pads (Install, Transformers)	*				
18.1.5	Grounding set (Install, Transformers)	*				
18.2.1	Using Tape (Splice high voltage underground cable)	*				

1	2	3	4	5	6	7
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	**◆ SEE NOTE 1 ** 7 LEVEL * 5 LEVEL**	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**
18.3	Terminate high voltage underground cable	*				
18.5	Perform high potential DC test on underground cables for faults	**				
18.6	Troubleshoot underground system cables for faults	*				
18.7	Trace underground cables with cable test set	*				
18.9	Fabricate load break elbow	*				
19	**DISTRIBUTION SYSTEMS, 600 VOLTS AND LESS** **Ref: AFQTP Module 19 - DISTRIBUTION SYSTEMS, 600 VOLTS AND LESS**					
19.1.3.1	System (Install grounding)	*				
19.1.3.2	Equipment (Install grounding)	*				
19.1.3.3	Bonding (Install grounding)	*				
19.1.4.	Feeders (Install)	*				
19.1.6	Branch circuits (Install)	*				
19.1.12	Over current protection devices (Install)	*				
19.2.2	Troubleshoot (Distribution systems)	*				

1	2	3	4	5	6	7
TASK NUMBER	TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES	◆ SEE NOTE 1 * * 7 LEVEL * 5 LEVEL	START DATE	COMPLETE DATE	TRAINEE'S INITIALS	TRAINER'S INITIALS
20	**AIFIELD LIGHTING SYSTEMS** **Ref: AFQTP Module 20 - AIRFIELD LIGHTING SYSTEMS**					
20.2.4	Airfield fixture lamps (Replace)	*				
20.2.5	Isolating (IL) transformers (Replace)	*				
20.3.1	Constant Current Regulator (Maintain airfield lighting systems)	*				
20.3.2	Control components (Maintain airfield lighting systems)	*				
20.3.4	Fixtures (Maintain airfield lighting systems)	*				
20.3.10	Approach path indicators (Maintain airfield lighting systems)	*				
20.4	Isolate airfield lighting circuits or equipment for test	*				
20.7	Connect airfield lighting constant current regulator for emergency operation	*				
20.8.1	Airfield lighting circuits (Troubleshoot)	*				
20.9.1	Use connector splice kit (Repair airfield lighting circuits)	*				
22	**MOTORS AND MOTOR CONTROL CIRCUITS** **Ref: AFQTP Module 22 - MOTORS AND MOTOR CONTROL CIRCUITS**					
22.1.1	Motors (Install)	*				
22.1.2	Motor control circuits (Install)	*				

1	2	3	4	5	6	7
TASK NUMBER	TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES	◆ SEE NOTE 1 * * 7 LEVEL * 5 LEVEL	START DATE	COMPLETE DATE	TRAINEE'S INITIALS	TRAINER'S INITIALS
25	**TOOLS AND EQUIPMENT** **Ref: AFQTP Module 25 - TOOLS AND EQUIPMENT**					
25.1.1.	Hotline tools (Maintain)	*				
25.1.2.	Rubber personal protective equipment (Maintain)	*				
25.1.10	Climbing equipment (Maintain)	*				
25.5.1	Multimeter (Use test equipment)	*				
25.5.2.	Clamp-on ammeter (Use test equipment)	*				
25.5.3.	Phase rotation meter (Use test equipment)	*				
25.5.4.	Megohmmeter (Use test equipment)	*				
25.5.14.	High voltage phase tester (Use test equipment)	*				
25.6.	Perform operator's maintenance on high reach truck with insulated bucket REF: AFI 24-30; TOs 36A12-5-1-181and182	*				
25.7.	Perform operator's maintenance on line maintenance truck	*				
25.8.	Operate aerial lift truck controls	*				
25.9.	Operate line maintenance truck controls	*				
25.10	Use hand signals to direct line maintenance truck operation	*				

NOTE 1: ♦ Diamond tasks are extremely important to the career field. Diamond tasks are the same as core tasks with one exception--equipment shortfalls at most locations have created problems with the actual hands-on certification of these tasks. In instances where required equipment is not available for instruction, completion of the task's AFQTP and passing the corresponding CerTest is all that is required for upgrade and qualification training. Hands-on certification should be accomplished at the first opportunity when equipment is available. In locations where the equipment is available for hands-on certification, CerTest completion is still a mandatory requirement.

1	2	3	4	5	6	7	8
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	**♦ SEE NOTE 1 * 5 LEVEL * * 7 LEVEL**	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**	**CerTest COMP DATE**
27	**AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES** **Ref: AFQTP Module 27 - AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES**						
27.1.2.1.1	Approach (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.2	Runway (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.3	PAPI (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.4	Taxiway (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.5	Distance To Go (DTG) (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.6	Regulator (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.7	Generator (Emergency Airfield Lighting, Install) CerTest # 8028 & 8029	♦					
27.1.2.1.8	Obstruction lights (Emergency Airfield Lighting,Install) CerTest # 8028 & 8029	♦					

1	2	3	4	5	6	7	8
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	♦ SEE NOTE 1 ** 7 LEVEL * 5 LEVEL	START DATE	COMPLETE DATE	TRAINEE'S INITIALS	TRAINER'S INITIALS	CerTest COMP DATE
27.1.2.2.1	Regulator (Emergency Airfield Lighting, Operate) CerTest # 8030	♦					
27.1.2.2.2	Generator (Emergency Airfield Lighting, Operate) CerTest # 8030	♦					
27.2.1.2.1.	Install (Electrical Distribution System) CerTest # 8130	♦					
27.2.1.2.2.	Maintain (Electrical Distribution System) CerTest # 8131	♦					
27.2.1.2.3.	Troubleshoot (Electrical Distribution System) CerTest # 8131	♦					
27.2.2.1.1.	Install (Remote Area Lighting Set (RALS) CerTest # 8123	♦					
27.2.2.1.2.	Operate (Remote Area Lighting Set (RALS) CerTest # 8123	♦					
27.2.2.1.3.	Maintain (Remote Area Lighting Set (RALS) CerTest # 8123	♦					
27.2.2.4.1.	Install power supply (Harvest Falcon/Eagle kitchen equipment) CerTest # 8121	♦					
27.2.2.6.1.1.2	Primary Distribution Center (PDC) (Bare Base Electrical Distribution System, Primary, Install) CerTest # 8127	♦					
27.2.2.6.1.1.3	Secondary Distribution System (SDC-HV) (Bare Base Electrical Distribution System, Primary, Install) CerTest # 8127						

1	2	3	4	5	6	7	8
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	♦ SEE NOTE 1 * * 7 LEVEL * 5 LEVEL	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**	**CerTest COMP DATE**
27.2.2.6.1.1.4	High voltage cable (Bare Base Electrical Distribution System, Primary, Install) CerTest # 8127	♦					
27.2.2.6.1.2.2	PDC (Bare Base Electrical Distribution System, Primary, Operate) CerTest # 8127	♦					
27.2.2.6.1.2.3	SDC-HV (Bare Base Electrical Distribution System, Primary, Operate) CerTest # 8127	♦					
27.2.2.6.1.3.1	PDC (Bare Base Electrical Distribution System, Primary, Maintain) CerTest # 8127	♦					
27.2.2.6.1.3.2	SDC-HV (Bare Base Electrical Distribution System, Primary, Maintain) CerTest # 8127	♦					
27.2.2.6.1.4.1	PDC (Bare Base Electrical Distribution System, Primary, Troubleshoot) CerTest # 8127	♦					
27.2.2.6.1.4.2	SDC-HV section (Bare Base Electrical Distribution System, Primary, Troubleshoot) CerTest # 8127	♦					
27.2.2.6.2.1.2	SDC-LV section (Bare Base Electrical Distribution System, Secondary, Install) CerTest # 8128	♦					
27.2.2.6.2.1.3	Power Distribution Pedestal (Bare Base Electrical Distribution System, Secondary, Install) CerTest # 8128	♦					
27.2.2.6.2.1.4	LV cables (Bare Base Electrical Distribution System, Secondary, Install) CerTest # 8128	♦					
27.2.2.6.2.2.2	SDC-LV section (Bare Base Electrical Distribution System, Secondary, Operate) CerTest # 8128	♦					
27.2.2.6.2.2.3	PDP (Bare Base Electrical Distribution System, Secondary, Operate) CerTest # 8128	♦					

1	2	3	4	5	6	7	8
TASK NUMBER	**TASKS, KNOWLEDGE, AND TECHNICAL REFERENCES**	◆ SEE NOTE 1 * * 7 LEVEL * 5 LEVEL	**START DATE**	**COMPLETE DATE**	**TRAINEE'S INITIALS**	**TRAINER'S INITIALS**	**CerTest COMP DATE**
27.2.2.6.2.3.1	SDC-LV section (Bare Base Electrical Distribution System, Secondary, Maintain) CerTest # 8128	◆					
27.2.2.6.2.3.2	PDP (Bare Base Electrical Distribution System, Secondary, Maintain) CerTest # 8128	◆					
27.2.2.6.2.4.1	SDC-LV section (Bare Base Electrical Distribution System, Secondary, Troubleshoot) CerTest # 8128	◆					
27.2.2.6.2.4.2	PDP (Bare Base Electrical Distribution System, Secondary, Troubleshoot) CerTest # 8128	◆					
27.2.2.6.2.4.3	LV cables (Bare Base Electrical Distribution System, Secondary, Troubleshoot) CerTest # 8128	◆					
27.2.2.6.3	Install Grounds (Bare base electrical distribution system) CerTest # 8127 & 8128	◆					
27.2.3.1.2	Expedient generator installation (Electrical support, Facility repair CerTest # 8128	◆					

SECTION B - COURSE OBJECTIVE LIST (COL)

(This section used when developing lesson plans)

4. Measurement. Measurement of each objective is indicated as follows:

4.1. Written Test (W) - used to sample each knowledge objective and the knowledge components of performance objectives.

4.2. Performance Test (P) - used under specified conditions in a formal testing mode to measure student accomplishment of performance objectives after the teaching-learning activity has been completed.

4.3. Progress Checks (PC) - administered by the instructor during classroom or laboratory instruction time to assess the student's accomplishment of knowledge or performance objectives.

5. Standard. The standard is 70% on written examinations. Standards for performance measurement are indicated in the objectives and delineated on the individual progress checklist. Instructor assistance is provided as needed during the progress check, and students may be required to repeat all or parts of the behavior until satisfactory performance is attained.

6. Proficiency Level. Most task performance is taught to the "2b" proficiency level which means the student can do most parts of the task, but does need assistance on the hardest parts of the task (partially proficient). The student can also determine step-by-step procedures for doing the task.

7. Course Objective List. These objectives are listed in the sequence taught by Block of Instruction.

7.1. Initial Skills Course. A detailed listing of the initial skills course objectives may be obtained by written request to 366 TRS/DO, 727 Missile Road, Sheppard AFB TX 76311-2254.

7.2. 7-Skill Level Course. A detailed listing of the CE Craftsman Management course objectives may be obtained by written request to 366 TRS/DO, 727 Missile Road, Sheppard AFB TX 76311-2254.

SECTION C - SUPPORT MATERIALS

8. CerTest.

8.1. CerTest is a program that uses computer-based evaluation to ensure skilled craftsmen are available to meet the Air Force's changing needs. It enhances upgrade and qualification training by testing and evaluating an individual's knowledge of the principles and procedures in each specialty.

8.1.1. The program contains tests used to evaluate task knowledge received through different media such as paper products (text), videotapes, and computer–based programs.

8.1.2. The CerTest program contains ***mandatory*** tests, required for upgrade. All ***diamond*** (♦) coded tasks on the STS have a corresponding ***mandatory*** test.

8.1.3. CerTest is also a powerful training management tool. It can be used to find the strengths and weaknesses in an individual's training and experience. CerTest automatically records and updates all test results. The training manager can copy records to a disk so that an individual can bring current, accurate training information to a new unit; thereby helping the gaining supervisor evaluate the trainee's knowledge and experience.

8.2. CerTest also enables unit personnel to develop site-specific tests. These custom-made tests standardize testing on tasks unique to a specific duty station and/or assignment. The program contains a graphics library that may be used along with a menu-driven test editor to develop these site-specific tests.

8.3. CerTest also contains ***optional*** CDC pre-evaluation tools. Volume review exercises are available for progress checks after each volume is completed. After all volumes are completed in a set, the trainee may take the course review exercise before taking the final End of Course exam at the base training office. Commanders are encouraged to integrate these tools in their unit's OJT program.

8.4. CerTest has been adopted as the Air Force platform for future electronic CDC testing. The Air Force Institute for Distributive Learning (AFIADL) began using CerTest on 1 June 2000. Currently, all CE AFSs are allowed to use AFIADL's CerTest on installations where Base Test Control Facilities (TCFs) are equipped. See your UETM for further information.

8.5. The ***mandatory*** CerTests for each AFSC are identified, by number, with it's corresponding AFQTP on the 3E0X1 AFQTP Documentation Record.

8.6. For a complete list of up-to-date AFQTPs applicable to the 3E0X1 AFSC see our web page at: **http://www.afcesa.af.mil/Directorate/CEO/Training/Enlisted/QTPs/3E0X1.htm**.

SECTION D - TRAINING COURSE INDEX

9. Purpose. This section of the CFETP identifies training courses available for the specialty. Refer to the Education and Training Course Announcements (ETCA) web site, http://etca.randolph.af.mil/ for complete information on Air Force in-residence courses.

10. Air Force In-Residence/Mobile Training Team (MTT) Courses.

Course Number	Title	Developer
J3ABR3E031 007	Electrical Systems Apprentice	366 TRS
J3AZR3E051 003	Cathodic Protection Maintenance	366 TRS
J3AZR3E051 013	Intrusion Detection Systems	366 TRS
J3AZR3E051 007	Airfield Lighting Systems	366 TRS
J3AZR3E051 008	HV Maintenance System	366 TRS
J3AZR3E051 016	HV Cable Testing and Splicing	366 TRS
J3AZR3E071 012	Fire Alarms Systems	366 TRS
J3AZR3E071 001	CE Electrical Troubleshooting	366 TRS
J3AZR3E071 010	Bare Base Electrical Systems	366 TRS
J3ACR3E070 000	Civil Engineer Management Craftsman Course	366 TRS

11. Air Force Institute for Advanced Distributed Learning (AFIADL) Courses.

Course Number	Title	Date
CDC 3E051A	Electrical Systems Journeyman	1 Jun 02
CDC 3E052B	Electrical Systems Journeyman	1 Jun 02

12. Exportable Courses/Information.

Course Number	Title	Date
	Civil Engineer Management Craftsman Read-Ahead-Material (RAM) version 2.1	Jul 01

13. Courses Under Development/Revision

Course Number	Course Title	Date Due
J3AZR3E051 016	High Voltage Cable Testing and Splicing	Nov 02
J3AZR3E051-017	High Voltage Systems Maintenance	Jan 03
J3AZR3E051-015	Cathodic Protection Maintenance	Mar 03
J3AZR3E051-011	CE Advanced Electrical Troubleshooting	May 03
J3AZR3E051-014	Airfield Lighting	Jul 03
CDC 3E051B	Electrical Systems Journeyman	Jul 03

SECTION E – MAJCOM-UNIQUE REQUIREMENTS

14. "There are currently no MAJCOM unique requirements. This area is reserved."

SECTION F - HOME STATION TRAINING

15. Purpose. The purpose of this section is to identify the tasks, training references, and training sources available in support of contingency/wartime training. Training ranges from knowledge-type training conducted in a classroom to task-oriented (hands-on) training conducted in the field. These training requirements, frequencies, and sources are listed in AFI 10-210, Prime Base Emergency Engineer Force (BEEF) Program.

15.1. Home Station Training (HST). HST is training that is conducted at the individual's home station for contingency operations.

15.1.1. Category I (CAT-I) training consists of knowledge-level training such as Prime BEEF orientation, field sanitation, and expedient methods. CAT-I training is normally accomplished through briefings and the use of videos and other training aids. These various training aids are listed in AFI 10-210, Attachment 2 under the "Optional Source for Training Material" column.

15.1.1.1. The "General Contingency Responsibilities" (GCR), CD-ROM Training Package may be used for Category I contingency training. Successful completion of the lessons in the GCR CD-ROM will satisfy those SORTS requirements indicated in AFI 10-210, Chapter 4 and Attachment 2. It can be used for training and evaluation and is based on successful completion of one or more lessons completed in any order. One, some or all lessons may be completed at a given time. At the end of each lesson, the trainee will successfully complete the Lesson Review Exercise (LRE) and receive a certificate of training generated by the CD-ROM. The trainee must present the certificate or certificates to the Readiness Training Monitor to receive credit for the training.

15.1.1.2. Also available are various volumes of Home Station Training CD-ROM packages. These disks contain up to five presentations covering various CAT I topics. These are an additional method of providing required recurring training and topics covered are indicated in the training material column of Attachment 2 by the letters "PBCD".

15.1.1.3. For personnel assigned to a unit with a Prime BEEF mission for the first time, the 3-Level General Contingency Responsibilities CD-ROM is to be completed within the first 90 days of assignment. This product contains 17 lessons covering CAT I training topics. CAT I credit can be given for completion of these lessons for the same areas as the previously mentioned General Contingency Responsibilities product as indicated in AFI 10-210. Completion certificates should be presented to the Readiness Training Monitor for documentation of training.

15.1.1.4. The Unit should develop procedures to use these products to suit their needs. Remember these are tools to assist you in fulfilling CAT I training requirements. Document this training as outlined in AFI 10-210.

15.1.2. Category II (CAT-II) training is primarily task-oriented training such as weapons training, hard-back tent construction, and convoy security and the hands-on portion of various CAT I topics. This training is listed in AFI 10-210, Attachment 3 can be conducted during regularly required field training exercises.

15.2. Training References.

15.2.1. AFI 10-210, Prime Base Engineer Emergency Force (BEEF) Program. Chapter four of AFI 10-210 identifies the Prime BEEF recurring training requirements. You can review this document by going to the Air Force publications web site. Attachment 2 is a list of HST CAT-I training requirements and Attachment 3 lists CAT-II training requirements.

15.2.2. Prime BEEF Contingency and Wartime Tasks - AFPAM 10-219, Vol 10. The Contingency Training Guide and Task Standards (AFPAM 10-219, Vol 10) lists basic wartime skills, knowledge, and the major common contingency/wartime tasks that Prime BEEF teams will be required to perform. The Contingency Training Guide and Task Standards identify the AFSs associated with each task, required resources to accomplish the task, and the maximum time (under optimum conditions) expected to complete the task. The document also identifies the lead AFS on each task. This document is located on the Air Force Publications Web site.

15.2.3. AFPAM 10-219 Series. These documents assist in home station training and contingency responses. They replaced the AFP 93-12 series of planning documents and are available on the Air Force Electronic Publications Library (AFEPL).

15.2.4. Air Force Education and Training Course Announcements (ETCA). Superceded AFCAT 36-2223. It is located at the following URL: http://etca.randolph.af.mil/ lists additional training/educational opportunities available for civil engineer personnel. This catalog contains information on formal education and training courses. The catalog is updated quarterly.

15.2.5. Readiness Training Package (RTP). RTPs are lesson plans for HST lessons. The RTPs are intended for those personnel who teach any area of HST. The index and RTPs are located on the Air Force Civil Engineer Support Agency (AFCESA) home page. The internet address for this information is https://wwwmil.afcesa.af.mil.

15.2.6. Other Documents. AFH 10-222, Bare Base Development, Bare Base Facility Erection, Force Protection, Mechanical Systems, Bare Base Assets, Bare Base Generators and other volumes in the AFH 10-222 series are used for contingency training and operations. The AFH series are pocket guides providing information on bare base systems for all AFSs. AFH 10-222, Vol 4, Air Force Environmental Handbook for Contingency Operations, was developed to assist the environmental career field (3E4X3) on environmental quality issues during contingency and training operations. The handbook can be used by any AFS who works closely with environmental issues. Visit the Air Force Publications web site to down load this information.

15.2.7. AFCESA/CEX. Maintains a comprehensive listing of audiovisual products that support the contingency training program. To view this listing as well as gain information on how to order specific audiovisual products, please consult the AFCESA Contingency Support page.

15.3. Ancillary Training.

15.3.1. Team Exercise Sites (CAT III). All CE personnel who fill critical Unit Type Code (UTC) positions will receive team training at Silver Flag Exercise Sites (SFES) with the exception of members on headquarters staff augmentation UTCs, pavement evaluation UTCs, and generator repair and maintenance UTCs. There are currently three active SFES in the world today. They are located at Tyndall AFB, FL; Ramstein AB, Germany; and Kadena AB, Japan. Active duty personnel in critical UTC positions will be qualified at least every 30 months on the elements listed in table 4.3 of AFI 10-210. The Air Reserve Components (ARC) will be qualified at least every 45 months.

15.3.2. AEF/Spin-up Training. The AFCESA home page has the worldwide locator for the different types of training, locations, and Points Of Contact (POC) for equipment items that maybe encountered during contingency operations.