

CHAPTER 17



CONSTRUCTION ELECTRICIAN (CE)

NAVPERS 18068-17F
CH-77

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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

CONSTRUCTION ELECTRICIAN (CE)



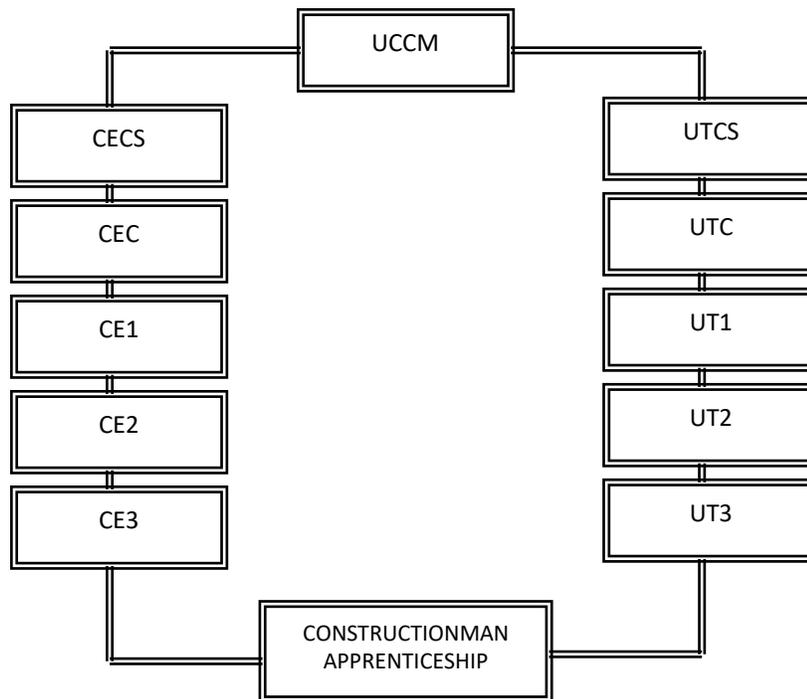
SCOPE OF RATING

Construction Electricians (CE) install and repair interior/exterior wiring and overhead and underground primary and secondary distribution systems using conduit, raceways, and direct burial cable; set up, operate, and service power generation electrical equipment; climb poles and towers utilizing lineman equipment; install and service electrical equipment; maintain individual combat readiness, and perform tasks required in contingency operations and disaster preparedness or recovery operations.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) as Chapter 17.

GENERAL INFORMATION

CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

SAFETY

The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.

Job Title**Construction Electricians****Job Code****002599****Job Family**

Construction and Extraction

NOC

TBD

Short Title (30 Characters)

CONSTRUCTION ELECTRICIAN

Short Title (14 Characters)

CONSTRUCT ELEC

Pay Plan

Enlisted

Career Field

CE

Other Relationships and Rules

NEC BXXX series, 717B, 718B, 804G, 833A and other NECs as assigned

Job Description

Construction Electricians interpret electrical plans and specifications, install and repair interior/exterior wiring and overhead and underground primary and secondary distribution systems using conduit, raceways, and direct burial cable; setup, operate, and service electrical equipment; climb poles and towers utilizing lineman equipment; install and service electrical equipment (i.e., transformers, switching equipment, protective devices, motors and controllers, conventional and alternative electrical systems, portable generators and distribution systems, Uninterruptable Power Supply (UPS), telephone/communication systems, security and portable lighting systems); as project managers, CEs plan, staff, direct, and control multiple construction projects to include problem solving, planning, estimating, scheduling, cost control and personnel management, ensuring compliance with specifications, code requirements, plans, and contracts; prepare progress reports, time records, construction schedules, and material, labor, tool and equipment estimates for construction projects and act as project supervisors and trainers for junior personnel.

DoD Relationship**Group Title**

Electricians

DoD Code

172100

O*NET Relationship**Occupation Title**

Electricians

SOC Code

47-2111.00

Job Family

Construction and Extraction

Skills*Equipment Selection**Reading Comprehension**Critical Thinking**Complex Problem Solving**Management of Personnel Resources**Installation**Quality Control Analysis**Management of Material Resources**Mathematics**Repairing***Abilities***Information Ordering**Manual Dexterity**Problem Sensitivity**Deductive Reasoning**Oral Expression**Written Comprehension**Visualization**Spatial Orientation**Inductive Reasoning**Static Strength***CONSTRUCTION MANAGEMENT****Paygrade****Task Type****Task Statements**

E6	NON-CORE	Conduct three-phase quality control inspections
E5	CORE	Develop construction activities
E5	CORE	Develop construction environmental protection plans
E4	CORE	Develop construction estimates
E5	CORE	Develop construction project packages
E4	CORE	Develop construction project sketches and diagrams
E5	CORE	Develop construction safety plans
E5	CORE	Develop master activities
E5	CORE	Develop project three-phase quality control plans
E6	CORE	Establish construction site layouts
E5	CORE	Input project data into construction management software and tools
E5	CORE	Inspect construction materials
E5	CORE	Interpret construction project drawings and specifications
E4	CORE	Inventory project tools and materials

CONSTRUCTION MANAGEMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Lead construction project crew
E7	CORE	Manage construction project resources
E7	CORE	Manage construction project(s)
E7	CORE	Manage construction safety plans
E7	CORE	Manage job site construction operations (e.g., quality control and safety plan implementation, job site information board, level III chart, etc.)
E7	CORE	Manage project quality control plan(s)
E7	CORE	Manage three-phase quality control process
E6	NON-CORE	Monitor construction project contracts
E6	CORE	Supervise construction project crew(s)
E5	CORE	Supervise construction project safety operations
E6	CORE	Supervise environmental protection plans
E6	CORE	Supervise planning and estimating operations
E6	CORE	Supervise project three-phase quality control process
E5	CORE	Turnover construction project
E6	CORE	Validate construction project packages
E5	NON-CORE	Validate project surveys and elevation data

ELECTRICAL AND ELECTRONIC SYSTEM COMPONENTS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Develop electrical and electronic system component wiring diagrams
E4	CORE	Install electrical components and devices
E4	CORE	Install electronic components and devices (e.g., surge protector, Uninterrupted Power Supply (UPS), sensory equipment)
E4	CORE	Interpret electrical and electronic system component drawings and specifications
E4	CORE	Repair electrical equipment
E5	NON-CORE	Repair electronic components and devices (e.g., surge protector, Uninterrupted Power Supply (UPS), sensory equipment)
E4	CORE	Test electrical equipment
E4	CORE	Test electronic components and devices (e.g., surge protector, Uninterrupted Power Supply (UPS), sensory equipment)
E4	CORE	Troubleshoot electrical equipment
E5	CORE	Troubleshoot electronic components and devices (e.g., surge protector, Uninterrupted Power Supply (UPS), sensory equipment)

FACILITIES MANAGEMENT

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct facilities corrective maintenance
E4	CORE	Conduct facilities preventive maintenance
E5	CORE	Inspect facilities systems
E7	NON-CORE	Manage facilities maintenance contracts
E7	CORE	Manage facilities maintenance operations (e.g., Camp Maintenance, 3M, MAXIMO)
E6	CORE	Supervise facilities maintenance (e.g., Camp Maintenance, 3M, MAXIMO)

INTERIOR AND EXTERIOR WIRING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Calculate electrical load capacities for conductors
E4	CORE	Calculate electrical load requirements
E4	CORE	Calculate fill capacities for raceways and enclosures
E5	CORE	Develop interior and exterior sketches and wiring diagrams
E4	CORE	Install electrical conductors
E4	CORE	Install electrical conduits and raceways
E4	CORE	Install electrical fixtures and devices
E4	CORE	Install electrical power panels and enclosures
E4	CORE	Install interior/exterior electrical grounding and bonding systems
E4	CORE	Install service entrance equipment
E4	CORE	Interpret interior and exterior wiring drawings and specifications
E4	CORE	Repair interior and exterior wiring systems
E6	CORE	Supervise interior and exterior wiring operational system checks (e.g., tests, repairs, troubleshooting)
E5	CORE	Supervise interior and exterior wiring system installations
E4	CORE	Troubleshoot interior and exterior wiring systems

LIGHTING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate area lighting requirements
E4	CORE	Conduct lighting systems operational checks (e.g., area, commercial, emergency, security, industrial)
E5	CORE	Develop lighting sketches and diagrams
E5	NON-CORE	Install airfield lighting systems
E4	CORE	Install area lighting systems
E4	CORE	Install portable lighting
E5	CORE	Install street lighting systems
E4	CORE	Install temporary lighting systems
E4	CORE	Interpret lighting drawings and specifications
E5	NON-CORE	Repair airfield lighting systems
E5	CORE	Repair lighting systems (e.g., area, commercial, emergency, security, industrial)
E5	CORE	Repair portable lighting
E5	CORE	Repair street lighting systems
E5	CORE	Repair temporary lighting systems
E6	CORE	Supervise lighting system installations
E6	CORE	Supervise lighting system operational system checks (e.g., tests, repairs, troubleshooting)
E5	NON-CORE	Test airfield lighting systems
E4	CORE	Test portable lighting
E5	CORE	Test street lighting system operations
E4	CORE	Test temporary lighting systems

LIGHTING (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Troubleshoot airfield lighting systems
E5	CORE	Troubleshoot lighting systems (e.g., area, commercial, emergency, security, industrial)
E5	CORE	Troubleshoot street lighting systems
E4	CORE	Troubleshoot temporary lighting systems

MOTORS AND CONTROLLERS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate motor and control requirements
E5	CORE	Develop motors and controllers wiring diagrams
E4	CORE	Install electric motor systems (e.g., motor controls, protective devices)
E4	CORE	Interpret motors and controllers drawings and specifications
E5	CORE	Repair electrical motor systems (e.g., motor controls, protective devices)
E5	CORE	Supervise electric motor system installations (e.g., motor controls, protective devices)
E6	CORE	Supervise electric motor system operational checks (e.g., tests, repairs, troubleshooting)
E4	CORE	Test electric motor systems (e.g., motor controls, protective devices)
E5	CORE	Troubleshoot electric motor systems (e.g., motor controls, protective devices)

POWER DISTRIBUTION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate power distribution load requirements
E4	CORE	Climb utility poles
E5	CORE	Conduct aerial work using bucket trucks
E5	CORE	Construct electrical manholes
E5	CORE	Develop power distribution sketches and diagrams
E5	CORE	Develop power distribution system requirements
E5	CORE	Install facilities grounding systems
E4	CORE	Install overhead power distribution systems
E4	CORE	Install power distribution grounding systems
E4	CORE	Install power distribution protection system components
E5	CORE	Install power distribution switch gear
E5	CORE	Install power distribution transformers
E4	CORE	Install service drops
E4	CORE	Install underground power distribution systems
E5	CORE	Install utility poles using auger truck
E4	CORE	Interpret power distribution drawings and specifications
E4	CORE	Locate existing underground electrical utilities
E5	NON-CORE	Repair direct burial cables
E5	CORE	Repair overhead power distribution systems
E5	CORE	Repair power distribution switch gear
E5	NON-CORE	Repair underground power distribution systems
E4	CORE	Rescue personnel from aerial positions

POWER DISTRIBUTION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Supervise overhead and underground power distribution operational system checks (e.g., tests, repairs, troubleshooting)
E5	CORE	Supervise overhead and underground power distribution systems installations
E4	CORE	Test functionality of power distribution transformers
E5	CORE	Test overhead and underground power distribution systems
E4	CORE	Test power distribution grounding systems for resistance to earth
E5	CORE	Test power distribution switch gear

POWER GENERATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calculate power generation load requirements
E4	CORE	Conduct power generation operational system checks
E4	NON-CORE	Install alternative power sources (e.g., solar, wind)
E4	CORE	Install power generation systems
E4	NON-CORE	Install Uninterruptable Power Supply (UPS)
E4	CORE	Provide power supply to a load using generator
E5	NON-CORE	Repair alternative power sources (e.g., solar, wind, batteries)
E5	CORE	Repair power generation systems
E5	NON-CORE	Repair Uninterruptable Power Supply (UPS)
E6	CORE	Supervise power generation installations
E6	CORE	Supervise power generation operations (e.g., tests, repairs, troubleshooting)
E4	NON-CORE	Test alternative power sources (e.g., solar, wind, batteries)
E4	NON-CORE	Test Uninterruptable Power Supply (UPS)
E5	CORE	Troubleshoot power generation systems
E5	NON-CORE	Troubleshoot Uninterruptable Power Supply (UPS)

SEABEE COMMON CORE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Apply combat life saving techniques
E5	NON-CORE	Assess airfield damage
E6	NON-CORE	Assist Maritime Prepositioning Force (MPF) operations
E4	NON-CORE	Conduct convoy security operations
E4	NON-CORE	Conduct crew-served weapons operational checks
E4	CORE	Conduct field communications equipment operational checks
E7	NON-CORE	Conduct Humanitarian Assistance and Disaster Relief (HADR)
E4	CORE	Conduct personal protection and decontamination (DECON) procedures
E4	CORE	Conduct small arms operational checks
E4	CORE	Employ Advance Base Functional Component (ABFC) systems
E4	NON-CORE	Employ crew-served weapons
E4	CORE	Employ field communications equipment
E4	CORE	Employ grenades, mines, and pyrotechnics
E4	CORE	Employ land survival techniques

SEABEE COMMON CORE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Employ small arms
E4	CORE	Maintain Personal Gear Issue (PGI)
E4	NON-CORE	Palletize cargo and equipment
E4	CORE	Patrol assigned areas
E5	NON-CORE	Perform arrival and departure airfield control group (AACG&DACG) procedures
E4	NON-CORE	Perform Chemical, Biological, Radiological, and Nuclear Defense (CBRND) reconnaissance (i.e., surveying, monitoring, and marking)
E7	CORE	Perform command and control of a company
E4	CORE	Perform command and control of a fire team
E6	CORE	Perform command and control of a platoon
E5	CORE	Perform command and control of a squad
E4	NON-CORE	Perform detailed troop and equipment decontamination (DECON)
E5	NON-CORE	Plan Advance Base Functional Component (ABFC) systems setup
E5	NON-CORE	Plan Airfield Damage Repair (ADR)
E7	NON-CORE	Plan convoy operations
E5	NON-CORE	Plan convoy security operations
E5	NON-CORE	Plan load for embarkation
E6	NON-CORE	Plan unit embarkation
E4	CORE	Prepare cargo and equipment for transport (e.g., weight, balance, and marking)
E4	NON-CORE	Prepare hazardous materials (HAZMAT) for transport
E4	NON-CORE	Repair damaged airfields
E4	CORE	Set tactical defenses
E6	NON-CORE	Supervise Advance Base Functional Component (ABFC) setup
E7	NON-CORE	Supervise Airfield Damage Repair (ADR) operations
E7	NON-CORE	Supervise Chemical, Biological, Radiological, and Nuclear Defense (CBRND) operations
E6	NON-CORE	Supervise convoy operations
E6	NON-CORE	Supervise convoy security operations
E7	NON-CORE	Supervise embarkation and debarkation operations
E4	CORE	Transport troops and equipment (e.g., convoy)

UNDERWATER CONSTRUCTION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Conduct corrective maintenance on certified Diver's Life Support Systems (DLSS)
E5	NON-CORE	Conduct corrective maintenance on Self-Contained Underwater Breathing Apparatus (SCUBA) diving equipment
E5	NON-CORE	Conduct corrective maintenance on Surface Supplied Diving (SSD) equipment
E5	NON-CORE	Conduct corrective maintenance on underwater construction equipment and tools
E5	NON-CORE	Conduct maritime defensive operations
E5	NON-CORE	Conduct oceanographic surveys
E5	NON-CORE	Conduct preventive maintenance on cable systems

UNDERWATER CONSTRUCTION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Conduct preventive maintenance on certified Diver's Life Support Systems (DLSS)
E5	NON-CORE	Conduct preventive maintenance on fleet moorings
E5	NON-CORE	Conduct preventive maintenance on pipelines
E5	NON-CORE	Conduct preventive maintenance on Self-Contained Underwater Breathing Apparatus (SCUBA) diving equipment
E5	NON-CORE	Conduct preventive maintenance on Surface Supplied Diving (SSD) equipment
E5	NON-CORE	Conduct preventive maintenance on underwater construction equipment and tools
E5	NON-CORE	Conduct preventive maintenance on waterfront facilities
E5	NON-CORE	Conduct terrestrial construction demolition using explosives
E5	NON-CORE	Conduct underwater construction demolition using explosives
E5	NON-CORE	Conduct underwater search and recovery operations
E5	NON-CORE	Construct cable systems
E5	NON-CORE	Construct fleet moorings
E5	NON-CORE	Construct pipelines
E5	NON-CORE	Construct waterfront facilities
E5	NON-CORE	Deploy underwater vehicles (e.g., Remotely Operated Vehicle (ROV) / Autonomous Underwater Vehicle (AUV) / Unmanned Underwater Vehicle (UUV))
E5	NON-CORE	Inspect cable systems
E5	NON-CORE	Inspect fleet moorings
E5	NON-CORE	Inspect pipelines
E5	NON-CORE	Inspect waterfront facilities
E7	NON-CORE	Manage diving emergency incidents
E7	NON-CORE	Manage diving equipment maintenance and certification (e.g., Self-Contained Underwater Breathing Apparatus (SCUBA), Surface Supplied Diving (SSD), Diver's Life Support System (DLSS))
E7	NON-CORE	Manage light salvage operations
E7	NON-CORE	Manage Ocean Facilities inspections
E7	NON-CORE	Manage Ocean Facilities maintenance
E7	NON-CORE	Manage oceanographic survey teams
E7	NON-CORE	Manage Offshore Petroleum Distribution System (OPDS) operations
E7	NON-CORE	Manage terrestrial explosive construction demolition operations
E7	NON-CORE	Manage underwater construction equipment and tools maintenance
E7	NON-CORE	Manage underwater construction projects
E7	NON-CORE	Manage underwater explosive construction demolition operations
E7	NON-CORE	Manage underwater search and recovery operations
E7	NON-CORE	Manage watercraft program
E5	NON-CORE	Perform diving emergency procedures
E5	NON-CORE	Perform light salvage operations
E5	NON-CORE	Perform Offshore Petroleum Distribution System (OPDS) operations
E6	NON-CORE	Plan terrestrial explosive construction demolition

UNDERWATER CONSTRUCTION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	NON-CORE	Plan underwater explosive construction demolition
E5	NON-CORE	Provide diving assistance during Maritime Prepositioning Force (MPF) operations
E5	NON-CORE	Repair cable systems
E5	NON-CORE	Repair fleet moorings
E5	NON-CORE	Repair pipelines
E5	NON-CORE	Repair waterfront facilities
E6	NON-CORE	Supervise construction of fleet moorings, waterfront facilities, pipelines, and cable systems
E6	NON-CORE	Supervise diving emergency incidents
E6	NON-CORE	Supervise diving equipment maintenance and certification (e.g., Self-Contained Underwater Breathing Apparatus (SCUBA), Surface Supplied Diving (SSD), Diver's Life Support System (DLSS))
E6	NON-CORE	Supervise hyperbaric treatments
E6	NON-CORE	Supervise inspection of fleet moorings, waterfront facilities, pipelines, and cable systems
E6	NON-CORE	Supervise light salvage operations
E6	NON-CORE	Supervise oceanographic survey team
E6	NON-CORE	Supervise Offshore Petroleum Distribution System (OPDS) operations
E6	NON-CORE	Supervise preventive maintenance of fleet moorings, waterfront facilities, pipelines, and cable systems
E6	NON-CORE	Supervise repairs of fleet moorings, waterfront facilities, pipelines, and cable systems
E6	NON-CORE	Supervise terrestrial explosive construction demolition operations
E6	NON-CORE	Supervise underwater construction equipment and tools maintenance
E6	NON-CORE	Supervise underwater explosive construction demolition operations
E6	NON-CORE	Supervise underwater search and recovery operations
E6	NON-CORE	Supervise watercraft crew during operations
E5	NON-CORE	Transport divers, personnel, and equipment using watercraft