



NATIONAL OCCUPATIONAL STANDARD

**ELECTRICITY DISTRIBUTION NETWORK OPERATIONAL MAINTAINER
LEVEL 4**

REFERENCE CODE / 13UMS0334-4

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Occupation:	ELECTRICITY DISTRIBUTION NETWORK OPERATIONAL MAINTAINER
Level:	4¹
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¹ Occupational Qualification Level is determined as Level Four (4) in the octal (8) level matrix.

TERMS, SYMBOLS AND ABBREVIATIONS

CURRENT TRANSFORMER: Electromagnetic circuit element that brings to level that can be used by measurement and protection systems, reducing current through according to the winding number ratios,

LOW VOLTAGE (LV): Voltage level whose active intensity is 1000 volt or under,

LOW-VOLTAGE DISTRIBUTION BOARD: Boards that enable distribution to many low voltage point energized directly from distribution transformer, in a electricity distribution network,

DISCONNECTOR: Opening and closing device of no-load electric circuits,

BUSBAR: Conductor which same voltage feeders connect to,

SKILL: Ability to fulfill the duties and responsibilities related to a certain work,

ENVIRONMENTAL PROTECTION: Using the materials or processes that do not harm the environment or proper disposal of hazardous waste during works,

DISTRIBUTION CENTER: Centers that enable distribution in the same voltage level to another points by multiplexing any high voltage level through busbars,

DISTRIBUTION SYSTEM: Electricity distribution station and network that a distribution company operate in distribution area specified in its license,

OUTAGE: Outage of one part of station and/or equipment due to maintenance, repair or a fault, automatically or by hand,

CIRCUIT DIAGRAM: Technical drawing of electrical device housing one or more electrical circuits,

POWER CUT: Cutting the power of plant and/or equipment from every direction via circuit breakers and disconnectors,

VOLTAGE TRANSFORMER: Electromagnetic circuit element that brings to usable level by measurement and protection systems, reducing high voltage according to winding number ratio,

ISCO: International Standard Classification of Occupations,

BILATERAL AGREEMENT: Commercial agreements made on the purchase and sale of electricity energy and / or its capacity, subject to the provisions of private law between natural and legal persons,

STEP-DOWN CENTER: Transformer centers that convert energy in the networks that use two or more high voltage levels, from one high voltage level to another,

OHS: Occupational Health and Safety,

ENTERPRISE OR EDAS: Power Distribution Company,

INSULATOR: Network elements which ensure connection of conductors used in overhead lines with poles, and which both carry and isolate the conductors from soil and other conductors,

CALIBRATION: Reporting of measurement results by comparing a reference measuring device which is certified to be accurate (traceable) and a measuring device which is not certified to be accurate,

CIRCUIT BREAKER: Devices for switching electric circuits which are or not under load,

PERSONAL PROTECTIVE EQUIPMENT (PPE): All kinds of tools, instruments, appliances and devices which are worn, put on or hold by the worker and which protect the worker from one or more hazards arising from the work and effect the health and safety of the worker, and which are designed to suit such purpose,

ELECTRIC TERMINAL: Appliance for engaging conductors,

CONTROL CENTER (SCADA): Supervisory control and Data Collection Center,

SKETCHING: Drawing operations performed during the work if necessary including work was conducted in,

BOARD: Energy Market Regulatory Authority,

kV: Kilovolt,

OPERATION: Operations performed with circuit breakers and disconnectors to commission or de-commission various parts of the system,

CUSTOMER: Consumers getting services by retail sales agreements or bilateral agreements,

RISK ASSESSMENT: Works to be carried out for determining hazards in the workplace or from outside, analyzing and grading the factors causing these hazards to become risk and risks arising from hazards and deciding on the control measures,

RISK: Means probability of occurrence of a hazardous event and combination of results.

FIELD DISTRIBUTION BOARD (FDB) : Boards that enable distribution of low voltage network in a electricity distribution network to multiple points,

DANGER: Potential of damage or injury likely to affect the worker or work place and likely to exist in the workplace or to be caused externally,

EARTHING ROD: A conducting material that enables contact between earth and conductors,

EARTHING: Earth wire connection of inactive section in the power plants and zero conductors with their related sections by an electrode,

TRANSFORMER OR POWER DISTRIBUTION UNIT: Voltage regulator regulating the electric energy it receives from the high voltage line to the voltage level useable in the facility or increasing the low voltage in the power plants,

SLEEPERS: Material that enables safe passage and transportation of conductors in power transmission lines on rods,

LOAD TRANSFER: Transferring all or a portion of electricity load from a conductor to another conductor,

LOAD: Electricity current drawn from a power network,

HIGH VOLTAGE (HV): Voltage level of which effective strength is 1000 Volt and above,

HIGH VOLTAGE CABLE HEAD: Electrical equipment which is used to interconnect appropriately the ends of the cable used in high voltage in terms of safety.

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1. INTRODUCTION

National Occupational Standard titled Electricity Distribution Network Operational Maintainer (Level 4) was issued by the Electricity Distribution Services Association (EDSA) assigned as per the provisions of Vocational Qualifications Authority (VQA) Law No. 5544 and “Bylaw on Drawing up National Occupational Standards” and “Regulation on the Establishment, Duties and Operation Procedures and Principles of the Sector Committees of Vocational Qualification Authority” introduced pursuant to the aforementioned Law.

National Occupational Standard titled Electricity Distribution Network Operational Maintainer (Level 4), was assessed upon receiving the opinions of the related institutions and organizations in the sector, and approved by VQA Board of Directors upon examination of the VQA Electricity and Electronics Sector Committee.

2. INTRODUCTION OF THE OCCUPATION

2.1. Definition of the Occupation

Electricity Distribution Network Operational Maintainer is qualified person who is responsible for taking required occupational health and safety measures in scope of EMAB (Energy Markets Audit Board) legislation and quality standards and carrying out assembly, disassembly, maintenance, and repair works of electrical systems and hardware on electricity distribution network. S/he is responsible for ensuring accuracy, correctness, timing, quality, and completion of operations during such works in safely manner.

2.2. Place of the Occupation in International Classification System: ISCO 08-3113 - Electrical Engineering Technicians

2.3. Regulations on Health, Safety and Environment

Labor Law No. 4857

Social Security and General Health Insurance Law No.5510

Occupational Health and Safety Law No. 6331

Bylaw on the Control of Waste Batteries and Accumulators - Bylaw on the Control of Waste Oils

Regulation on the General Principles of Waste Management

Bylaw on Electrical Equipment Designed for Use within Certain Voltage Limits

Bylaw on Environmental Impact Assessment

Regulation on Health and Security Measures for Working with Devices with Screens

Bylaw on Interior Electrical Wiring

By Law on the Authorities, Tasks, and Responsibilities of Scientists Relating to Electricity

Bylaw on Heavy Current Electrical Installations

Bylaw on Electrical Installation Projects

Bylaw on Earthing at Electrical Installations - Bylaw on Electrical Magnetic Compliance

Bylaw on the Works of Carrying by Hand

Bylaw on Increasing Efficiency of Energy Resources and in Use of Energy

By Law on the Health and Safety Conditions when using Business Equipment

By Law on the First Aid

By Law on Occupational Health and Safety Risk Assessment

By Law on Personal Protective Equipment

By Law on the Usage of Personal Protective Equipment in the Business Places

By Law on the Protection of Employees from Dangers Caused by Explosive Environments

By Law on Vibration

Regulation on Control of Hazardous Wastes

Furthermore, it is essential to obey laws, statutory rules and regulations on occupational health and safety and environment; and to perform risk analysis regarding this issue.

2.4. Other legislation relating to the occupation

Law no. 6446 on Electricity Market (repealed: Law no. 4628 on Electricity Market)
By Law On Service Quality Of Electricity Distribution and Retail Sale
By Law on Reliability and Quality of Electricity Transmission System Supply.
By Law on Electricity Market Distribution
By Law on Electricity Market Network
Electricity Market Ancillary Services Legislation
Circular on Counters to Be Used in Electricity Market
By Law on Unlicensed Electricity Generation in Electricity Market
Circular Regarding Implementation of By Law on Unlicensed Electricity Generation in Electricity Market
By Law on Arrangement of Distribution System Investments and Realizations of Plans in Electricity Market
Electricity Market Illuminating Bylaw
Bylaw on Customer Services in Electricity Market
Electricity Market Balancing and Settlement Legislation
By Law on the Overtime Works Regarding Labor Law
By Law on the Working Times which cannot Be Divided into Weekly Business Days
Other Legislation Regarding the Occupation
Public Servants Law No. 657

2.5. Working Environment and Conditions

Electricity Distribution Network Operational Maintainer works in outdoor and indoor environments, places restricting possibility of movement, dark places, and field conditions. There are risks of accident and getting injured during performance of works and these require being taken of measures regarding occupational health and security. Employees should work by using personal protective equipment to be provided by the Employer in the cases where such risks cannot be eliminated.

2.6. Other Requirements Regarding The Occupation

Electricity Distribution Network Operational Maintainer shall be subject to checkup in accordance with the Article 15 of the OHS Law No. 6331 and shall have authorizations and permits according to the applicable Regulation On Electric Power Installations No. 24246 for working under high voltage.

3. OCCUPATIONAL PROFILE

3.1. Duties, Tasks and Performance Criteria

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
A	To apply occupational health and safety, fire and emergency rules (To be continued)	A.1	To apply legal and workplace rules regarding occupational health and safety	A.1.1	Participates in the trainings organized by the company or institutions other than the company for understanding the norms regarding Occupational Health and Safety.
				A.1.2	Uses and ensures being used of required work clothes and personal protective equipment during work..
				A.1.3	Ensures that work clothes and personal protective equipment used during works are complete and in case of need, ensures being supplied of them by notifying relevant people and units.
				A.1.4	Ensures that the entire equipment used for Occupational health and safety of protection are operable condition.
				A.1.5	Ensures safety of work area and other employees by making relevant warning signs placed and protected in accordance with the company's instructions.
				A.1.6	Ensures being informed of people or institutions to be affected by the works and getting approval before and during operations such as energizing or deenergizing.
				A.1.8	Takes any and all safety measures, arranges environmental conditions, and protects people against potential accidents before commencing the works.
				A.1.9	Determines places where flammable and explosive materials will be stored and maintained or provides support for such studies.
				A.1.10	Ensures and gets ensured that national legislation, instructions, and international standards relating to Occupational Health and Safety issues are complied with.
				A.2	To decrease risk factors
		A.2.2	Contributes to the activities for decreasing risk factors.		

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
A	To apply occupational health and safety, fire and emergency rules	A.2	To decrease risk factors	A.2.3	Determines and reports the risk factors he/she faces with.
				A.2.5	Complies with the safe working time as specified in the instructions specific to the work done and ensures compliance in all works.
		A.3	To apply emergency procedures in case of emergency	A.3.1	Informs the cases of emergency which are impossible to eliminate instantly to the authorities.
				A.3.2	Applies the exit and escape procedures in cases of emergency.
		A.4	To carry out earthing activities	A.4.1	Leaves the conductors and equipment that earthing will be done without energized.
				A.4.2	Controls whether there is energy or not on left without energized conductors and equipment is controlled with a suitable measurement device
				A.4.3	Grounding performs conductor contact with the soil.
				A.4.4	In accordance with Designated national / international standards, provides left without energized relevant conductors and equipment, connection to grounding conductor connected to the soil conductor
		A.5	To remove earthing	A.5.1	Whether there is energy or not in earthing conductors to be removed conductors and equipment is controlled with suitable measurement device.
				A.5.2.	Been found to be de-energized earthing conductors and the equipment, disconnected with earthing conductor.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
B	To carry out environmental protection activities	B.1	To apply environmental protection standards and procedures	B.1.1	Participates in periodic trainings for environmental protection requirements and practices
				B.1.2	Participates in the works on determination of environmental impacts related to the performed activities correctly.
				B.1.3	Observes the environmental impacts during application of work processes and participates in the works for preventing hazardous results.
				B.1.4	Participates in the works for effective use of energy related to the performed activities.
		B.2	To contribute to decreasing environmental risks	B.2.1	Carries out classification and sorting by classes required for recycling of recyclable materials.
				B.2.2	Sorts the dangerous and hazardous wastes form the other materials in accordance with the instructions given and takes the required measures and temporarily stores them by their codes.
				Code	Ensures that safe and healthy working measures are taken against potential negative effects of the functions of devices, equipment and tools.
				B.2.4	Determines the safety deficiencies of the assets related to his/her work in the electricity distribution network, internal and external environments of the buildings and takes the required action.
				B.2.5	Determines places where flammable and explosive materials will be stored and maintained or provides support for such studies.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
C	To carry out activities related to quality management	C.1	To apply quality requirements related to the work	C.1.1	Applies the quality requirements by the the type of task to be performed in accordance with the instructions and schedules stated in the task forms.
				C.1.2	Applies the quality requirements in accordance with the tolerances and deviations allowed in the application.
				C.2	Works in accordance with the quality requirements of machinery, device fittings or system.
		C.2	To apply technical procedures to ensure quality	C.2.1	Applies the quality maintenance techniques by the type of task to be performed.
				C0.2.3	Contributes to fulfillment of special quality conditions by applying technical procedures related to quality maintenance during tasks.
				C.2.3	Fills in the forms related to the work which the enterprise deems suitable.
		C.3	To keep the quality of works performed under control	C.3.1	Participates in the activities to supervise the quality of works based on the operation.
				C.3.3	Ensures that the settings made on the equipment and machinery used are in accordance with the technical specifications of equipment and machinery and work to be performed.
				C.3.4	Ensures that the operation of machinery or device which is maintained and repaired is in accordance with the technical specifications determined by the manufacturer.
		C.4	To participate in the activities related to prevention of faults and defects determined in the processes	C.4.1	Records the faults and defects determined during the work.
				C.4.2	Contributes to determination and elimination of the reasons causing the faults and defects.
				C.4.3	Applies the practices and procedures related to the removal of faults and defects under his authority or he's capable of repairing.
				C.4.4	Informs the faults and defects which are not under his authority or he fails to repair to the relevant department/person.
		C.5	To save on consumption of operating assets	C.5.1	Uses and ensures that the operating assets are used effectively.
				C.5.2	Participates in the planning studies organized for more effective use of operating assets.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
D	To protect and maintain the work tools and equipment in accordance with the instructions	D.1	To supervise operatability status of work equipment	D.1.1	Controls whether the equipment operates at the performance stated in the user's manual or not in the first use.
				D.1.2	Periodically supervises the status of any kind of equipment used in accordance with the instructions.
				D.1.3	Detects the wear and tear and fault in the equipment.
				D.1.4	Carries out or ensures that the required procedures are carried out for replacement or repair of defective equipment in accordance with the procedures determined by the enterprise.
				D.1.5	Creates records related to the determinations he makes regarding the status of equipment.
				D.1.6	Submits the records related to the status of equipment to the authorized persons in accordance with the procedures.
				D.1.7	Ensures that the equipment's calibration is carried out periodically.
		D.2	To ensure maintenance of work equipment	D.2.1	Supplies or ensures that the materials to be used in the maintenance activities are supplied.
				D.2.2	Makes the required reportings related to the equipment maintained.
		D.3	To support equipment supply	D.3.1	Supports the processes of determining the technical specifications of equipment to be supplied.
				D.3.2	Requests for equipment supply in accordance with the operating procedures.
				D.3.3	Ensures that the equipment featuring the required technical specifications is supplied.
				D.3.4	Informs the non-conforming equipment to the relevant persons/departments in accordance with the procedures.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
Men	To make pre-work preparations	E.1	To determine the work to be performed	E.1.1	Receives the detailed information regarding the work within the scope of repair or maintenance from the relevant department or person.
				E.1.2	Investigates and determines or ensures that the work site is determined.
		E.2	To make a schedule before troubleshooting and maintenance	E.2.1	Reviews the user's manuals, line and circuit diagrams of the equipment to be used in the work.
				E.2.2	Cooperates with the relevant departments for appropriate load transfer and scheduled interruption for troubleshooting or maintenance.
				E.2.3	Prepares or complies with the work chedule for the optimum completion of work.
				E.2.4	Ensures that the relevant persons (chief, operator and etc.) and/or departments are informed on the work.
		E.3	To prepare the material to be used in the work	E.3.1	Makes or ensured that the list of materials to be used in the work is made and ensures that the work is performed perfectly.
				E.3.2	Supplies the materials required by the nature of the work or ensures that they're supplied by informing the relevant authorized person in accordance with the requirement.
				E.3.3	Makes the final control of the materials, replaces or ensures that the defective materials or materials with technical problem are replaced before the work.
				E.3.4	Keeps the personal protective equipment , work equipment available and controls the usability of such materials before use.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
F	To carry out troubleshooting	F.1	To isolate defective zone	F.1.1	Assesses the zones deenergized due to fault however energy can be supplied.
				F.1.2	Intervenes to the electric network by considering the OHS and quality conditions to minimize the number of customers effected by the fault.
				F.1.3	Carries out the processes for commissioning or decommissioning of all or part of the system after the instructions of the relevant departments/chieves.
				F.1.4	Disconnects the defective zone from the related distribution system.
		F.2	To repair fault	F.2.1	Performs or ensures that the required earthings are performed in the electirc network by carrying out the necessary protocols.
				F.2.2	Carries out the processes to be performed for repairing the fault in the place of fault and/or electricity distribution network by fulfilling the technical requirements in accordance with the instructions and considering the OHS, environmental conditions.
				F.2.3	Investigates the site in case of disassembly or assembly, makes the necessary preparations and measurements and performs these activities.
				F.2.4	Receives support from the relevant persons/departments when he fails to satisfy in terms of technique and knowledge.
				F.2.5	Provides the required information and makes the necessary announcement for energy supply. Obtains the approval of energy supply from the control center.
				F.2.6	Removes or ensures that the earthings to the electric network are removed by carrying out the required protocols after the completion of work.
				F.2.7	Completes his/her work by leaving no energized zone.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
G	To carry out maintenance and renewal activities (To be Continued)	G.1	To follow up scheduled maintenances	G.1.1	Regularly follows up scheduled maintenances to be performed.
				G.1.2	Keeps the records related to completed and next maintenances.
				G.1.3	Regularly reports the records kept by the related forms.
		G.2	To perform maintenance and renewal activities (To be Continued))	G.2.1	Performs or ensures that the earthings are performed required in the zone to be interfered by carrying out the required protocols.
				G.2.2	Investigates the work site, makes the required preparations and measurements and carries out the maintenance-renewal processes in case of disassembly or assembly.
				G.2.3	Accompanies maintenance, renewal, assembly, disassembly, testing, measurements to be carried out by the third parties or service procurement and assists in ensuring occupational safety.
				G.2.4	Maintains, replaces the distribution and power transformers.
				G.2.5	Maintains and if required replaces disconnectors, circuit breakers and other equipment in the distribution centers and substations.
				G.2.6	Maintains and replaces all inductives, poles, traverses, insulators, electric terminals in the electricity transmission lines.
				G.2.7	Maintains, measures and if required, replaces low voltage distribution panels, Site Distribution Panel (SDP) and the related lead wires.
				G.2.8	Ensures that the cables and high voltage terminal caps used underground are maintained and replaced.
G.2.9	Maintains the cells in the system and equipment built in these cells.				

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
G	To carry out maintenance and renewal activities	G.2	To perform maintenance and renewal activities	G.2.10	Ensures that all earthing cables included in the distribution system are installed, connected, earthing rods or plates are housed and they're all replaced or their deficiencies are removed when required and makes the required controls.
				G.2.11	Carries out the maintenance of other equipment to be included in the distribution system in time in accordance with the instructions given.
				G.2.12	Provides the required information and makes the necessary announcement for supplying energy.
				G.2.13	Obtains the approval of energy supply from the control center.
				G.2.14	Removes or ensures that the earthings to the electric network are removed by carrying out the required protocols after the completion of work.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
H	To carry out tests, settings and measurements	H.1	To be prepared for testing	H.1.1	Decides the test to be performed based on the work's specifications.
				H.1.2	Supplies or ensures that the materials required for the test to be performed are supplied.
		H.2	To carry out tests, settings and measurements	H.2.1	Provides the conditions required for testing and starts this process.
				H.2.2	Ensures that the system is operative after testing.
				H.2.3	Assesses the conformity of the process carried out.
				H.2.4	Informs the relevant authority regarding the result of the process.
				H.2.5	Ensures that the results of measurement are recorded by using an accepted procedure.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
I	To carry out load transfer	I.1	To assess work zone	I.1.1	Determines the electric network in the centers to transfer the load to and the status of load in this electric network, informs the relevant control center and control station or relevant authorized person regarding the issue.
				I.1.2	Informs the control center and relevant persons to ensure there is no employee to be effected by the load transfer.
		I.2	To carry out the task of load transfer	I.2.1	Obtains approval from the authorized person/s for the load transfer after the required protocols are carried out.
				I.2.2	Carries out the load transfer by operation sequence after the control center is informed.
		I.3	To make required measurements	I.3.1	Observes the load change in the system after the load transfer and measures such change by using measuring devices.
				I.3.2	Shares the result of measurement with the relevant authorized person and control center.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
J	To report the results of works performed	J.1	To report results of fault and maintenance activities	J.1.1	Fills in the forms related to the works performed determined by the enterprise, directly informs the relevant control center and the authorized person, if required.
				J.1.2	Reports all the tasks performed like the material used, result of measurement, sketching and submits such information to the relevant person/department.
				J.1.3	Analyzes the reasons for unrepaired fault and maintenances not carried out and submits such information to the relevant department/person.
		J.2	To make improvement suggestions	J.2.1.	Informs the problems/deficiencies related to the faults and maintenances and makes suggestions for solution if any and contributes to taking the required measures.

Duties		Tasks		Performance Criteria	
Code	Title	Code	Title	Code	Description
K	To carry out professional development activities	K.1	To carry out activities in terms of individual occupational development	K.1.1	Carries out research activities for professional and personal development.
				K.1.2	Follows up new technologies, procedures and developments related to his/her occupation.
		K.2	To provide occupational training to his inferiors and other employees	K.2.1	Shares his/her knowledge and experience with his/her colleagues.
				K.2.2	Provides limited information and trainings related to his occupation.

3.2. Tools, Appliances and Equipment Used

1. LV phase sequence device
2. LV control detector
3. LV fuse plier
4. Auger bit
5. Lumbering machine
6. Current Transformer
7. Wrench set (allen, open, pipe, socket set, torque, box-end, etc)
8. Pedal
9. Bush hammer
10. Hammer
11. Busbar earthing apparatus
12. Bus bars
13. Various conductors
14. Various cables and cable joints
15. Circuit breakers
16. Rasp
17. Flash lamp
18. Voltage Transformers
19. Overhead line earthing apparatus
20. Iskanta çeşitleri
21. Insulation megger
22. Insulated rug
23. Insulating stand
24. Generators
25. Cable cutting scissors
26. Clamp types (3/0)-(477)
27. Personal protective equipment (insulated occupational safety shoes, gloves against electrical and mechanical risks, insulated helmet, safety belts)
28. Electrical terminals
29. protective glasses-face shield, insulated and heat-resistant protective clothes, dust-gas mask, ear plug)
30. Socket set
31. Maneuver warning signs
32. Collar
33. Motor hand tools
34. Capstan
35. Shoe pliers
36. Clamp-on ammeter
37. Protolin
38. Rectifier
39. Counters
40. Sliding Ladder
41. Wire cutter
42. Basic hand tools (insulated)
43. Thermographic camera
44. Earthing megger
45. Traffic warning signs
46. Transformer
47. Ambustion set
48. HV phase voltage tester
49. HV phase sequence device
50. HV Insulated stool
51. HV control detector
52. HV fuse plier

3.3. Knowledge & Skills

1. Knowledge on emergency case
2. Knowledge on low and high voltage
3. Ability of maintaining and repairing lighting systems
4. Basic first aid knowledge
5. Knowledge on computer usage
6. Knowledge on environmental protection legislation and application methods
7. Knowledge on distribution panels and switchboards
8. Ability of working in a team or an organization
9. Knowledge on load transfer in power distribution systems
10. Knowledge on power cutting and energizing methods
11. Knowledge on earthing in power systems
12. Knowledge and maintenance and repair of electrical equipment
13. Knowledge on energy efficiency
14. Knowledge on recyclable wastes
15. Line and circuit diagram reading skill
16. Knowledge on occupational health & safety
17. Knowledge on quality assurance systems and quality control methods
18. Recording and reporting skills
19. Knowledge of vocational terms
20. Knowledge on occupational legislation
21. Knowledge on testing and assessment
22. Skills of oral and written communication
23. Knowledge on basic labour legislation
24. Basic electricity knowledge
25. Skill of using the time well.

3.4. Attitudes and Behaviours

1. To be cold blooded and calm under emergency and stressful situation
2. To ensure work discipline of subordinates
3. To decide within the scope of his knowledge and experience
4. To use her/his time effectively and efficiently in accordance with work orders
5. To adopt regulations set forth in environmental, quality, and OHS legislation
6. To be attentive and careful
7. To be sensitive on use and recycling of natural resources
8. To follow-up innovations and developments in her/his field of activity
9. To comply with hierarchical structure of workplace
10. To pay attention to the usage of tools, appliances and equipments belonging to workplace
11. To be open to research for occupational development
12. Determining negative environmental effects
13. To contribute to risk and hazard analysis studies within system and worksites
14. To know his/her responsibilities and to fulfill the same
15. Taking care of process quality
16. To follow the instructions and guidelines rigorously
17. To use carrying and lifting equipment correctly
18. To inform the authorities in cases of danger
19. Taking care of cleanness, tidiness, and order of workplace
20. To share information effectively, openly and accurately in shift changes
21. To inform relevant people and institutions about defects not falling into her/his field of authority

4. TESTING, ASSESSMENT AND CERTIFICATION

Testing and assessment for certification with respect to national qualifications based on Electricity Distribution Network Operational Maintainer (Level 4) Occupational Standard shall be held in written and/or oral forms, theoretically and practically, in testing and assessment centers where required conditions are met.

Testing and assessment method and practice principles shall be detailed with national qualifications to be drawn up pursuant to this occupational standard. Activities regarding testing, assessment and certification shall be conducted within the framework of Vocational Qualification Authority, Testing and Certification Regulation.

Note: This part shall not be published on the Official Gazette. It shall be included on the web site of VQA only.

1. People Participated In the Occupational Standard Preparation Process

Volkan ASLAN	(Uludağ EDAŞ)	Electrical-Electronics Engineer
Alper ERBAŞ	(Uludağ EDAŞ)	Electrical Engineer
İbrahim AKGÜN	(Enerji Energy)	Petroleum and Natural Gas Engineer
Bilge Caner ÖKSÜZ	(Aydem EDAŞ)	Electrical-Electronics Engineer
Burak ÇETİN	(Osmangazi EDAŞ)	Electrical-Electronics Engineer
Emrah KAYA	(Meram EDAŞ)	Electrical-Electronics Engineer
Fadıl KARAMAZI	(Firat EDAŞ)	Electrical-Electronics Engineer
Mehmet Reşat KARAMAN	(SEDAŞ)	Electronics Engineer
Osman Nuri ÇALIŞKAN	(EnerjiSA Başkent)	Senior Electrical-Electronics Engineer
Savaş TÜKENMEZ	(Çoruh EDAŞ)	Electrical-Electronics Engineer
Suat YILMAZ	(Çalık YEDAŞ)	Electrical Engineer
T. Ersin BİRTÜRK	(Osmangazi EDAŞ)	Technical Teacher (Electricity)
Yavuz KONUK	(SEDAŞ)	Electrical Engineer

People, Institutions, and Organizations Asked for Opinion:

Akedaş Power Distribution Corporation
Ankara Chamber of Industry (ASO)
Ankara Chamber of Trade (ATO)
Aydem Power Distribution Corporation
Boğaziçi University Department of Electrical - Electronics Engineering
Ministry of Labor and Social Security
Çamlıbel EDCO
Çoruh EDCO
State Personnel Administration
Confederation of Revolutionary Trade Unions of Turkey (DISK)

Aegean Region Chamber of Industry (EBSO)
Power Generation Corporation
Energy Markets Regulatory Authority
Ministry of Energy and Natural Resources
EnerjiSA
Başkent EDCO
Firat EDCO
HAK-IS Trade Union Confederation
Istanbul Electricity Technicians
Chamber of Tradesmen and Craftsmen
Istanbul Chamber of Industry
Professional Committee of Power Generation, Electrical Motors, Transformers, and Control Devices Industry
Istanbul Technical University School of Electrical and Electronics
Istanbul Chamber of Commerce (ITO)
Kayseri and its Vicinity ETCO
Kocaeli Chamber of Industry
Small and Medium Industry Development Organization (KOSGEB)
MoE Life-Time Learning Directorate General
MoE Occupational and Technical Education Directorate General
MoE Innovation and Education Technologies Directorate General
Meram EDCO
Middle East Technical University Department of Electrical - Electronics Engineering
Osmangazi EDCO
Association of Testing Industrialists and Business People
Sakarya EDCO
Ministry of Industry and Trade
TMMOB Chamber of Electrical Engineers
Trakya EDCO
Association of Consumer Rights

Association of Researches in the Favor of Consumers (TÜYADER)
Turkey Power Distribution CO.
Association of Turkish Electrical and Electronics Technicians
Federation of Tradesmen and Craftsmen
Turkey Power Transmission CO.
Union of Turkey Electricity Industry
Turkish Electricity Trade and Commitment Corporation
Association of Electrical Crane Manufacturers of Turkey (TEVİD)
Confederation of Turkish Tradesmen and Craftsmen (TESK)
Turkish Exporters Assembly (TIM)
Turkish Statistical Institute (TUIK)
Turkish Labor Institution (Presidency of Business and Occupation Consultancy Administration)
Confederation of Turkish Trade Unions (TURK-IS)
Turkish Confederation of Employer Associations (TİSK)
Turkish Union of Chambers and Exchange Commodities (TOBB)
Uludağ EDCO
Yeşilirmak EDCO
Yıldız Technical University School of Electrical and Electronics
Board of Higher Education (YOK)

Sector Committee Members and Experts

Abdullah KAYA,	President	Confederation of Turkish Tradesmen and Craftsmen
Haydar BATTALOĞLU,	Vice President	Ministry of National Education
Prof.Dr. Murat DOĞRUDEL,	Member	Board of Higher Education (YOK)
Nasip Gül ERÇOBAN,	Member	Ministry of Labor and Social Security
Edip TÜRKAY,	Member	Ministry of Energy and Natural Resources
Zekeriya KAHVECİ,	Member	Ministry of Science Industry and Technology
Oğuz BEDİR,	Member	Confederation of Turkish Trade Unions
Ertuğrul CAN,	Member	Turkish Union of Chambers and Exchange Commodities (TOBB)

Ahmet BALIK,	Member	HAK Trade Unions Confederation
Aykut ENGİN,	Member	Turkish Confederation of Employer Associations
Hacı Ali EROĞLU,	Member	Occupational Qualification Authority
Firuzan SİLAHŞÖR,	Vice President	Occupational Qualification Authority

Executive Board

Bayram AKBAŞ,	Representative of Ministry of Labour and Social Security	President
Assc. Prof. Ömer AÇIKGÖZ,	Representative of Ministry of National Education	Vice President
Prof. Dr. Mahmut ÖZER,	Representative Board of Higher Education	Member
Bendevi PALANDÖKEN,	Representative of Professional Organizations	Member
Dr. Osman YILDIZ,	Representative of Confederation of Turkish Trade Unions	Member
Mustafa DEMİR,	Representative of Turkish Confederation of Employer Associations	Member