GUIDELINES AND PROCEDURES FOR CERTIFICATION OF ELECTRICAL PERSONNEL CARRYING OUT INSTALLATION, OPERATION AND MAINTENANCE OF POWER SYSTEMS AND ELECTRICAL INSTALLATIONS IN THE NIGERIAN ELECTRICITY SUPPLY INDUSTRIES AND OTHER ALLIED INDUSTRIES/WORKPLACES IN NIGERIA

CLASSIFICATION OF CERTIFICATION

Certification of Electrical Personnel is grouped into three levels in line with the national system operating voltages. Each level is further subdivided into three categories in line with areas of specialization, skill sets, relevant years of experience and requisite educational qualifications as detailed below:

CERTIFICATION LEVELS

Level 1 – EHV & HV (330 / 132kV) systems

Level 2 – MV (33 / 11kV) systems

Level 3 – LV (0.400kV / 0.230kV) systems

CERTIFICATION SKILL SETS

The skill set categories for this certification under the three certification levels includes but not limited to:

- **Category A**
  - ✓ Planning, Design & Construction
  - ✓ Protection, Control, Metering
- **Category B**
  - ✓ Operations
    - Power stations
    - Electrical Facilities
- **Category C**
  - ✓ Installation, Testing, Maintenance
    - *Power Lines*
    - *Electrical systems*
    - *Industrial systems*

Prospective Electrical Personnel may apply for certification under any level and category depending on their area of specialization, qualifications, and years of practical field experience in the Nigerian Electricity Supply Industry and other allied industries/workplaces.

CATEGORY A

This certification is designed for Electrical Personnel who have acquired a Bachelor's Degree or Higher National Diploma in Electrical Engineering or its equivalent and have worked in the power sector or allied industries and other workplaces for at least five (5) years.

They are personally held responsible for any work planned, designed, supervised, or carried out by them.

SCOPE OF WORK FOR CATEGORY A

Planning, Design & Construction

i. Carry out site visitation activities for proposed project designs and modifications.
ii. Analyse operational data like load, breakdowns and growth, and initiate expansion or remedial projects where necessary.
iii. Analyse load and forecast demands and determine network needs from statistical projections.
iv. Develop network expansion needs, construction specifications, bills of materials and other supporting documentations.
v. Prepare design diagrams and documents for electrical power and industrial systems.
vi. Prepare drawings, specifications and evaluation of power and control systems.
vii. Prepare comprehensive electrical system study including short circuit, relay coordination and arc flash analysis.
viii. Selection of process control, power distribution and instrumentation system components.
ix. Supervise the installation / construction of electrical systems.
x. Maintain all network information and data.

Protection, Control & Metering

i. Coordinate, calibrate and set protection relays, review metering and relay diagrams and determine the required protective schemes for electrical installations.
ii. Troubleshoot and repair relay and control equipment in electrical systems e.g. protective relays, instrument transformers, meters, recording instruments, controls (breakers, regulators, capacitors, etc.)
iii. Perform impedance, short circuit, and relay settings calculations using relevant relay management software.
iv. Coordinate pre-commissioning and periodic tests of power equipment and materials.

CERTIFICATION REQUIREMENTS FOR CATEGORY A

The minimum qualification and requirements of an applicant under this category are as follows:

i. Bachelor's Degree / Higher National Diploma in Electrical / Electronics / Instrumentation Engineering from an accredited Institution.
ii. Registration with relevant professional bodies will be an added advantage.
iii. Should have knowledge of all types of electrical testing equipment.
iv. Should be able to read and interpret electrical circuit drawings and other related drawings.
v. Should have knowledge and interpretation of industry regulations such as NESIS Regulation 2015, Health and Safety Code, etc.
vi. Shall have the evidence of proven ability and at least five (5) years of practical field experience in his / her area of skill specialization.

CATEGORY B

This Certification is for Electrical Personnel who have acquired a minimum of National Diploma in Electrical / Electronics / Instrumentation Engineering and have worked in the power sector or allied industries / other workplaces for at least three (3) years.

They are personally held responsible for any operations and maintenance work carried out by them but are under the supervision of Category A Electrical Personnel.

SCOPE OF WORK FOR CATEGORY B

Operations

Power Stations

i. Carry out high and medium voltage load management operations such as switching operations of switchgears and other protective devices in the substation control rooms and outdoor switchyards.
ii. Operation and maintenance of power generating plants along with their ancillary switchgears and other accessories.
iii. Operation and maintenance of low voltage switches.

Electrical Facilities

i. Carry out routine inspections and testing of electrical installations and equipment.
ii. Carry out troubleshooting and maintenance repairs on defective electrical installations and equipment.
iii. Ensure that industry regulations are adhered to within the facility.

CERTIFICATION REQUIREMENTS FOR CATEGORY B

The minimum qualification/requirements of an applicant under this category are as follows:

i Minimum of National Diploma (OND) in Electrical / Electronic / Instrumentation Engineering Certificate from accredited Institution.
ii Should have good knowledge of Nigerian Electricity Supply and Installation Standards (NESIS) Regulation 2015, Distribution Code and Health and Safety Code.
iii Should have good interpretation of electrical circuit diagrams.
iv Should have practical knowledge of the use of testing instrument/equipment such as Insulation testers, Earth Resistance Tester, Voltmeter etc.
v The candidate shall have the evidence of proven ability and at least three (3) years of practical field experience in his / her area of skill specialization.

CATEGORY C

This Certification is for Electrical personnel who have acquired a minimum of Secondary School or Technical College Education with relevant training certificates and have worked in the power sector or allied industries / other workplaces for at least three (3) years.
They are personally held responsible for any installation, operations and maintenance work carried out by them but are under the supervision of Category A Electrical Personnel.

SCOPE OF WORK FOR CATEGORY C

Installation, Testing and Maintenance

LINES

i. Installation and maintenance of overhead and underground power lines and cables.
ii. Make and repair joints in overhead and underground power lines.
iii. Prepare cable terminations for electrical equipment, overhead and underground power lines.

POWER SYSTEMS

i. Installation and maintenance of transformers and its associated switchgears and other accessories.
ii. Setting and calibration of protection relays and other protective devices.
iii. Maintenance of substation equipment such as transformers, Ring Main Units (RMU), etc.
iv. Installation, operation and maintenance of electrical installations in residential, commercial and industrial buildings.
v. Carry out pre-commissioning tests.
vi. Carry out basic troubleshooting operations on electrical systems and equipment.

INDUSTRIAL SYSTEMS

i. Installation, operation and maintenance of electric motors, pumps, compressors and dryers along with their control panels and protective devices.
ii. Installation and maintenance of HV batteries and chargers, HVAC systems, DC panels, etc.
iii. Installation and wiring of isolated standby generating plants along with their ancillary switchgears and change-over switches.

CERTIFICATION REQUIREMENTS FOR CATEGORY C

The minimum qualification/requirements of an applicant under this category are as follows:

i Secondary School or Technical College Certificate with relevant training certificates in any of the skillsets outlined in the paragraph above. Trade Test certificate in Electrical Installation Works (Class I, II & III) will be an added advantage.
ii Should have good knowledge of Nigerian Electricity Supply and Installation Standards (NESIS) Regulation 2015, Health and Safety Code, etc.
iii Should have good interpretation of electrical circuit diagrams.
iv Should have practical knowledge of the use of testing equipment such as Insulation testers, Earth Resistance Tester, Voltmeter, etc.
v Shall have the evidence of proven ability and at least three (3) years of practical field experience in his / her area of skill specialization.

FEES PAYABLE FOR THE ELECTRICAL PERSONNEL CERTIFICATION

The certification fee and annual renewal fees for each category are as stated hereunder:

Certification and Renewal Fees

CATEGORY	CERTIFICATION FEE (₦)	RENEWAL FEE (₦)
A	50,000.00	25,000.00
B	35000 .00	15,000.00
C	20,000.00	7,500.00

NOTE:

- This certification is valid for one year and renewable every year.
- The fees shown in the table are subject to review without notice.