Licensing of Electricians

Final Draft

Public Utilities Commission of Sri Lanka

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PREAMBLE

Across the world electrical safety is an important element and prudently regulated through various regulatory tools; licensing of electrical technology workers is one of such. Hence, licensing of electrical technology workers is of a highest importance and critical in assuring the electrical safety of lives and property.

Public Utilities Commission of Sri Lanka (PUCSL), Institution of Engineers Sri Lanka (IESL), Tertiary and Vocational Education Commission (TVEC), Construction Industry Development Authority (CIDA) along with Distribution Licensees have taken the initiative to address the gap identified in the electrical installation trade in terms of safety, reliability, and cost effectiveness through the licensing process of electricians in Sri Lanka. The absence of a licensing regime for electrical technology workers has caused negative implications, with widespread violation of stipulated safety measures & standards in electrical installations.

EXECUTIVE SUMMARY

Licensing of electrical technology workers is a formal and legal way of defining their professions and authorizing only those who meet predetermined standards deemed to be necessary, to practice such professions. Licenses so issued are generally subject to renewal after a given period, liable for penalties, could be revoked or suspended, based on the professional/moral behaviour, continuity in engagement of the profession, competence demonstrated, etc. by the License holder, thus requiring Licensees to discharge their duties in accordance with the applicable rules, regulations and ethics.

An electrician is generally defined as a tradesman specialized in carrying out many types of work associated with electrical installations in buildings, factories or commercial establishments. Most countries apply a licensing regime to authorize electricians. There are normally a few classes of electricians, and such classes have been defined according to the requirements of the country. Their qualifications, aptitude competence and experience are assessed by training institutions through examinations, trade tests, interviews, etc.

Sri Lanka is yet to implement a scheme to license/register electrical technology workers. In Sri Lanka, the legal definition for “electrician” is ambiguous, and this permits anybody to describe himself/herself as an electrical tradesperson or electrician specializing in any area and can engage in any work related to installation, repair, operate and maintain electrical installations or even in the design and planning work. Currently, there is no legal restriction for any individual to practice as an electrical tradesperson in Sri Lanka.

Sri Lanka’s technical education has a long history. However, one of the drawbacks of the technical and vocational education system was the absence of uniformity in the levels of the courses conducted. This caused confusion among the persons who intended to join the training institutions as well as the prospective employers. In order to overcome this flaw, Government of Sri Lanka (GOSL) established the Tertiary and Vocational Education Commission (TVEC).

The TVEC introduced the National Vocational Qualification (NVQ) system in line with International Vocational Qualification (IVQ), which shows increased responsiveness to competency needs, required by local industries and also matches the skills provision to the needs of international market. It has accredited the Technical College network, Vocational Technical Centers (VTC) and many private training institutions to offer courses meeting the standards of NVQ system qualifications, thereby providing a fair opportunity to pursue a career, through institutions established island wide to acquire such qualifications.

The levels of competency of those who have acquired the NVQ qualifications are given in Table 1.

LEVEL	AWARD	DESCRIPTION
1	Certificate	For craftsmen who possess basic skills and entry level competencies.
2	Certificate	For craftsmen who need direct & regular supervision
3	Certificate	For craftsmen who need occasional guidance
4	Certificate	For craftsmen who could work independently
5	Diploma	For Supervisors
6	Higher Diploma	For Managers
7	Degree equivalent	For decision makers

Table 1- Level of competency – NVQ qualifications defined by TVEC

Objectives of a Licensing Regime for electrical technology workers are mainly two fold. It shall:

(a) provide practical safeguards to protect the public, workmen and the electrical installations from hazards that could arise out of the installation, maintenance, test, inspection or repair of electrical apparatus, equipment, fixtures, and appliances, whilst making certain that available resources are optimally utilized.

(b) ensure that all work related to any electrical equipment or electrical installation are undertaken by suitably qualified persons having requisite experience and competence

In order to achieve the above objectives, a mandatory requirement shall be to establish an independent, autonomous, efficient and effective Licensing Authority for electrical technology workers.

Though the establishment of a separate Authority for licensing of electrical workers appears to be the ideal solution, the most pragmatic option would be to entrust this responsibility to an existing thus the Construction Industry Development Authority (**CIDA)** can be considered as the best candidate to be entrusted with this responsibility.

The CIDA shall be required to enact regulations, and for it to administer and enforce an efficient, effective regulatory regime, such regulations, at a minimum, can include suitable provisions related to the following:

Under section 13 (r) & (s) read with the schedule of the Construction Industry Development Act, No. 33 of 2014, the Construction Industry Authority (CIDA) is assigned the function of being the License Authority in Sri Lanka.

a) Issuing, renewing, revocation and suspension of licenses ,

b) Maintaining records and publishing the list of licensed electricians.

a) Financial management,

c) Reviewing/Updating electrician testing process including approving the recommendations of the examiners on syllabi of the subjects

d) Reviewing the standard of examiners,

e) Reviewing the standard of testing laboratories and equipment

(f) Obtaining the consent of educational institutions who come under regulatory supervision of the TVEC to offer laboratories to the electrician licensing program

(g) Ensuring the availability of laboratories for this purpose for a pre-defined time period per week, and maintaining laboratories at a satisfactory level to conduct Electrician licencing tests

(h) Initiating legal action/corrective action against persons who violate the regulations

LICENSING OF ELECTRICIANS

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ABBREVIATIONS

CIDA	Construction Industry Development Authority
DTET	Department of Technical Education and Training
EB	Examination Board
IESL	Institution of Engineers Sri Lanka
JIB	Joint Industry Board
NAITA	National Industrial Training Authority
NIC	National Identity Card
NVQ	National Vocational Qualification
NYSC	National Youth Services Council
PUCSL	Public Utilities Commission of Sri Lanka
TVEC	Tertiary and Vocational Education Commission
TVET	Technical and Vocational Education and Training
UK	United Kingdom
UNIVOTEC	University of Vocational Technology
USA	United States of America
VTA	Vocational Training Authority of Sri Lanka
LECO	Lanka Electricity Company (Private) Limited
CEB	Ceylon Electricity Board
LV	Low Voltage
kVA	Kilo Volt Ampere

LICENSING OF ELECTRICIANS

1. INTRODUCTION

Licensing/registration of electrical technology workers are done to achieve the following:

(a) To ensure optimal utilization of the available resources those are used for the purpose of supplying electricity. to electricity consumers;

(b) To carry out planning, analysis, design, installation, inspection, test, repair, operation and maintenance of electrical installations in accordance with the applicable Codes and Standards

(c) Operation & Maintenance tasks are performed in accordance with applicable Codes and Standards

(d) To ensure a safe supply of electricity as practicably as possible to the electricity consumers;

(e) To protect the public, all workers and the installations from the inherent dangers associated with electricity, by ensuring that all electrical work are done in a professional and a competent manner;'

To prevent unqualified people practicing as electricians; for which licences have been issued under these regulations.

To make the public and all interested parties aware of (i) the individuals who are suitably qualified, competent and have the requisite experience to carry out electrical work and (ii) competence levels of such persons.

2. LICENSING OF ELECTRICAL TECHNOLOGY WORKERS

Licensing of electrical technology workers is a formal and legal way of defining their profession and authorizing only those who meet predetermined standards deemed to be necessary, to practice such professions. Licenses so issued are generally subject to renewal after a prescribed period, liable for penalties, could be revoked or suspended, based on the professional/moral behaviour, continuity in engagement of the profession, competence exhibited, etc. by the License holder, thus requiring Licensees to discharge their duties in accordance with the applicable rules and regulations.

2.1. ELECTRICIANS

An electrician is generally defined as a tradesman specializing in the many types of work associated with electrical installations in buildings, factories or commercial establishments & utility installations.

Most countries use a licensing regime to authorize electricians. There are normally a few classes of electricians, and such classes have been defined according to the requirements of each country. Their qualifications, competence and experience are assessed by institutions through examinations, trade tests, interviews, etc.

2.2. SRI LANKAN SITUATION

Sri Lanka is yet to implement a scheme to license/register electrical technology workers. In the country, there is no legal meaning of the term "electrician" and this permits anybody to describe himself/herself as an electrical tradesperson specializing in any area and can engage in any work related to installation, repair, operation and maintenance of electrical installations or even in the design and planning work. Hence, currently, there is only rudimental legal restriction for any individual to practice as an electrical tradesperson in Sri Lanka.

In the pre-1984 era, when local government institutions were in charge of the electricity distribution in certain parts of the country, many of them adopted schemes to register electrical contractors to carry out the electrical installation work in buildings and factories. However, with Lanka Electricity Company (LECO) and Ceylon Electricity Board (CEB) taking over the electricity distribution work in those areas, the registration schemes were discontinued. A licensing or any other equivalent procedure to establish and test professional competency of electrical technology workers, has not been carried out in Sri Lanka.

Professionalism has many attributes. Specialized knowledge, competency, honesty, integrity, and self-regulation are some. These are unlikely to be characteristics in an untrained, unqualified individual would possess. Hence the work delivered by a qualified professional, legally authorized to practice a profession, will be far superior to that of an unqualified, untrained individual having no legal authority to practice. This is true for any profession, but in case of electrical engineering, the situation becomes even more critical because of inherent dangers it embeds. This has been exemplified by many unwarranted deaths of persons unknowingly being victims of substandard electrical installations that had been found seriously lacking in safety.

So far, no proper studies have been carried out to assess the value of resources the country has wasted, number of installations/equipment that have got damaged/destroyed or even the human lives lost owing to unprofessional, unqualified people handling the work related to electrical installations. These go unaccounted and not even investigated into. Hence, it is timely to focus on developing a new culture to bring about a proper order in the manner electrical engineering work is handled in the country.

2.2.1. TECHNICAL EDUCATION[1]

The most significant event in technical education in Sri Lanka in the modern era was the establishment of the 'Maradana' Technical College. Since then technical and vocational

[1] Pl see the Appendix 1.

education continued to be developed, which resulted in the establishment of many junior technical colleges and private technical educational institutions. These institutions provide the basic education and training in almost all fields of engineering and were instrumental in the development of the country's skills base. Most government and private sector industries in Sri Lanka recognize certificates issued by such institutions as the basic qualifications when recruiting electrical tradesmen.

However, one drawback of the technical and vocational education system that was in operation was the absence of any 'uniformity' across different levels of qualifications and the standard of corresponding courses so conducted. This caused confusion among the persons who intended to join the training institutions as well as the prospective employers. In order to overcome this flaw, GOSL established the Tertiary and Vocational Education Commission (TVEC) in 1991.

Taking a cue from the international best practices (International Vocational Qualifications, IVQ), TVEC has corrected the anomaly so existed, by introducing the National Vocational Qualification (NVQ) system. The newly introduced qualification system shows increased responsiveness to competency needs of our local industries and also matches the skills provision to the needs of the international market. To ensure that the country's youth in all parts of the country will have facilities to acquire such qualifications, TVEC has accredited the junior technical college network and many private training intuitions to offer courses leading to the NVQ system qualifications. TVEC exercises effective regulatory supervision over the sector from the time of accreditation itself to ensure that the quality of education delivered is in accordance with the set standards. It has also upgraded at least one technical college in each province to a College of Technology, which has facilities to conduct courses leading to the award of NVQ 5&6 qualifications. The levels of competency of those who have acquired the qualifications are given in Table 1.

LEVEL	AWARD	DESCRIPTION
1	Certificate	For craftsmen who possess basic skills and entry level competencies.
2	Certificate	For craftsmen who need direct & regular supervision
3	Certificate	For craftsmen who need occasional guidance
4	Certificate	For craftsmen who could work independently
5	Diploma	For Supervisors
6	Higher Diploma	For Managers
7	Degree equivalent	For decision makers

Table 1- Level of competency – NVQ qualifications defined by TVEC

In view of the above it can be strongly recommended that the NVQ framework should be considered as the educational eligibility requirement for the proposed Electrician licensing program.

2.3. INTERNATIONAL PRACTICE -LICENSING/REGISTRATION PROCESSES OF ELECTRICIANS

2.3.1. UNITED STATES OF AMERICA (USA)

In the USA, licensing is administered by a specified Department of the respective state. There are various classes of electrician licenses varying from journey man (master electrician) to apprentice. The requirements for becoming a journeyman or master electrician, and the types of work they are authorized to perform vary from state to state. Licenses issued by one state may not be valid in another state.

It is an offence to carry out electrical work without a valid license.

It is mandatory for an individual to complete an apprentice program with a specified number of classroom hours and a specified number of experience hours under a Master electrician to apply for a Master Electrician License.

Generally, a Master Electrician after a few years of service in that class, as has been specified in the law of the particular state, will be eligible to apply for a contractor's license.

2.3.2. UNITED KINGDOM

Joint Industry Board (JIB) established in 1960s is the main governing body of licensing electricians in the UK. It lays down the minimum educational qualifications and the requisite experience to qualify as an electrical worker. Grading ranges from apprentice up through improver, electrician and approved electrician to technician. JIB defines the duties of workers of each grade should be capable of carrying out.

Apparently as the JIB hasn't had inspection of electrical installation and appliances covered as a duty in their grades, National Association of Professional Inspectors & Testers (NAPIT) has been established in 1992. Members to the NAPIT are appointed by the Department of Communities and Local Government.

The National Inspection Council for Electrical Installation Contractors and Electrical Contractors Association are two other institutions that are associated with the electricity industry.

2.3.3. CANADA, AUSTRALIA

Canada, Australia and almost all developed countries implement licensing schemes similar to those existing in UK and USA.

3. MAIN CONSIDERATIONS FOR LICENSING OF ELECTRICIANS

3.1. OBJECTIVES

Objectives of a Licensing Regime are mainly two fold. It shall,

(a) provide practical safeguards to protect the public, workmen and the electrical installations from hazards that could arise out of the installation, maintenance, test, inspection or repair of electrical apparatus, equipment, fixtures, and appliances, whilst making certain that available resources are optimally utilized.

(b) ensure that all work related to any electrical equipment or electrical installation are undertaken by suitably qualified persons having requisite experience and competence

In order to achieve the above objectives PUCSL and CIDA propose formulate mechanism to enact the required regulations for the licensing of electrical technology workers.

The Licensing regulations, shall establish the rules, procedures and declare the requirements for licensing to perform electrical technology work involved in the installation, repair, maintenance, operation, inspection, switching or testing work of electrical apparatus, equipment, fixtures or

appliances, to ensure that only the duly authorized competent persons will be engaged for such work.

3.2. LICENSING AUTHORITY

Although the establishment of a separate Authority for licensing of electrical workers appears to be the ideal solution, the most pragmatic option will be to entrust this responsibility to an existing regulatory authority. Of the regulatory bodies operating in Sri Lanka currently, the organization to shoulder this responsibility is Construction Industry Development Authority (CIDA), considering the legal mandate, infrastructure and procedures already established.

3.3. ADMINISTRATION AND ENFORCEMENT

To achieve the main aims of forming a Licensing Authority and for the Authority to administer and enforce the licensing regime efficiently and effectively, the regulations shall include, at a minimum, the following provisions.

3.3.1. RESPONSIBLE PERSON FOR ADMINISTRATION AND ENFORCEMENT OF THE REGULATIONS

Licensing Authority shall nominate a person (Head, Licensing) to be responsible for the administration and enforcement of the licensing regulations.

3.3.2. SCOPE OF THE REGULATIONS

The scope of the regulations shall be limited to the electrical technology work related to the installation, operation, maintenance, test, inspection or repair of electrical apparatus, equipment, fixtures, and appliances and issuing reports.

3.3.3. LICENSE VALIDITY

License issued to an electrician shall be valid only if the license is signed by the (Head, Licensing) or his designated agent and impressed with a seal adopted by the License Authority.

All License holders shall be required wear a badge displaying the following:

(a) Name of License holder

(b) Licensee class and the number

(c) Date of issue and expiry

3.3.4. RECORDS

Licensing Authority shall maintain a register of licensed electricians, which shall contain the name, Licensee class, Licensee number, NIC number, Date of issue & expiry, Contact details and details on violation of licensing conditions. This register shall be made available to the public and essentially through the Licensing Authority website as well.

3.3.5. VIOLATION OF REGULATIONS

Licensing regulations shall include necessary provisions to penalize any person who violates any of the regulations. It shall be remembered that such penalization has to be done through a judicial process.

3.3.6. LICENSES

Licensee classes shall be defined and it is proposed to limit the number of classes to five as given below:

Category	Voltage level and capacity limits of allowed practice	Abbreviation or License Code First letter: Voltage Second letter: Category Third Letter: Class
Utility Electrical Worker: Low Voltage	Low voltage 0-1000 Volt utility distribution networks	LEU
Master Electrician: Low voltage	Low voltage 0-1000 Volt (all installations)	LEM
Senior Electrician: Low voltage	Low voltage 0-1000 Volt (Up to and including installations of 3 phase 60A)	LES
Junior Electrician: Low voltage	Low voltage 0-1000 Volt (Single phase 30A)	LEJ
Apprentice: Low voltage	Low voltage 0-1000 Volt (work only under supervision of a licensed electrician of the applicable category)	LEA

3.3.7. APPLICATION FOR LICENSES

Applications for a license in any class as defined in section 3.3.6 shall be made to the Head Licensing (section 3.3.1), using a specified form (Schedule 1), along with the information requested and the fees specified therein.

All applications for licenses shall be submitted to the Licensing Authority either “on line” or “in writing”.

An applicant who fails to qualify for a license or who fails to report for an examination within twelve (12) months after filing a license application shall forfeit any fees paid in connection with the application

3.3.8. ISSUANCE, VALIDITY, RENEWAL AND TRANSFERABILITY OF LICENSES

Licenses will be issued/ renewed by the Licensing Authority before the date of expiration of the current license if the following conditions are met:

(a) Application for the issuance of a license can be lodged by any person who possesses the required qualifications and experience related to the corresponding electrician license category.
(b) Application for the renewal of the License has been submitted in the specified format at least four weeks before its expiry, providing all the requested information and the renewal fees to the Licensing Authority;
(c) Work or services performed under the existing license have been done in a manner satisfactory to the Licensing Authority;
(d) Applicant has sufficient proof to declare that he/she has been engaged in the licensed activities for a period (say 60%) to be stipulated by the Licensing Authority;
(e) Payment of fees and penalties as laid down in the Schedule 1
(f) License has not been revoked or suspended by the Licensing Authority
(g) At the time issuance and renewal, the candidate must submit a medical certificate from a registered medical practitioner to prove that he/she is fit both mentally and physically to pursue the work authorised by the License.

In cases where an applicant fails to satisfy the condition 3.3.8 (d) due to the applicant being compelled to serve in essential services or on a directive of the GOSL, then the Licensing Authority shall waive off this requirement.

Licenses shall expire and be void after the date of expiry specified in the license, except that when the day of expiration falls upon a Sunday or a public holiday, the license shall remain valid until the next business day.

Licenses shall not be transferable and shall be valid for four (4) years from the date of issue

3.3.9. SUSPENSION AND REVOCATION OF LICENSES

On information that any person who has been granted a license under these regulations has been found guilty of

(a) professional negligence

(b) an offence involving moral turpitude
(c) professional misconduct
(d) violating any of the license conditions

The Licensing Authority may suspend or revoke the license after an inquiry.

3.3.10. EXEMPTION FROM LICENSING

i. A person is not required, under this licensing regime, to hold an Electrician License for the purpose of the following:

(a) performance or supervision of electrical work in practicing the person's profession as an Electrical Engineer;

(b) performance or supervision of electrical installation work as part of a Research and Development activity, under a relevant regulation;

(c) performance or supervision of electrical work as part of the testing of electrical equipment that the person is authorized to do under a regulation;

(d) performance, as an apprentice, of electrical work that requires the apprentice to perform electrical work;

(e) performance, as a trainee, of electrical work that requires the trainee to perform electrical work;

(f) performance, as a student, of electrical work as part of training under the supervision of teaching staff at—

(i) a university,

(ii) a college,

(iii) a school or

(iv) a similar institution

ii. The Licensing Authority has the power to exempt

a. any other electrical technology personnel serving the GOSL or

b. expatriate electrical technology personnel serving GOSL approved projects

from obtaining a license to carry out license activities defined in these regulations subject to conditions laid down by the Licensing Authority, at their designated, regular places of work.

Exemption referred to in 3.3.10. i (a) and (b) shall be for a specified period such as to attain repair, emergency works within a designated premises.

The Licensing Authority may grant such exemptions to any person or a category of persons by publishing an order to that effect.

Exempted personnel shall not engage in licensed activities at any place other than the places stated in the exemption order.

3.3.11. ELIGIBILITY REQUIREMENTS FOR LICENSES

Eligibility requirements shall include the minimum educational qualifications and also the requisite experience and such requirements for each category are given below:

Utility Electrical Worker: Low Voltage

i. Applicants who wish to obtain a LEU license shall fulfill at least any one of the following requirements:

   a. Work experience as an Electrician LEM as defined in these regulations for a period of not less than two years

   b. Equivalent work experience in any other country under the license issued by such a country, for a period of not less than two years Equivalent to that of LEM level.

   c. Successful completion of a course conducted by a recognised Educational Institute acceptable to the Licensing Authority, which may at least be equivalent to the NVQ Level 4 qualification and a minimum of two years subsequent practical experience under the supervision of an Electrician LEU or above, contractor, operator or an electrical engineer.

   d. Successful completion of a course conducted by the Utility Training Centres which are linked with TVEC's training centres to ascertain the compatibility of the syllabus. Where institution could award certification in compatible with the accepted norm of NVQ standards.

ii. Applicants who satisfy the requirements of 3.3.11 (i) shall be examined by an Examination Board appointed by the Head Licensing (3.3.1), on the following, but not limited to:

(a) Knowledge of the applicable Codes and regulations related to electrical installations/equipment/apparatus;

(b) Wiring methods, types and current carrying capacities of conductors, conductor and equipment protection, and standard wiring systems and diagrams;

(c) Practical ability to plan, design, interpret electrical wiring diagrams and drawings, carry out testing, installation, maintenance, inspection, trouble shooting and repair of electrical apparatus, equipment, fixtures, and appliances in accordance with the established standards for an installation where the estimated contract demand for any LV network (Less than 1000V);

Master Electrician - LEM

i. Applicants who wish to obtain a LEM license shall fulfill at least any one of the following requirements:

e. Work experience as an Electrician LES as defined in these regulations for a period of not less than two years

f. Equivalent work experience in any other country under the license issued by such a country, for a period of not less than two years Equivalent to that of LES level.

g. Successful completion of a course conducted by a recognised Educational Institute acceptable to the Licensing Authority, which may at least be equivalent to the NVQ Level 4 qualification and a minimum of two years subsequent practical experience under the supervision of an Electrician LEM or above, contractor, operator or an electrical engineer.

ii. Applicants who satisfy the requirements of 3.3.11 (i) shall be examined by an Examination Board appointed by the Head Licensing (3.3.1), on the following, but not limited to:

(d) Knowledge of the applicable Codes and regulations related to electrical installations/equipment/apparatus;

(e) Wiring methods, types and current carrying capacities of conductors, conductor and equipment protection, and standard wiring systems and diagrams;

(f) Practical ability to plan, design, interpret electrical wiring diagrams and drawings, carry out testing, installation, maintenance, inspection, trouble shooting and repair of electrical apparatus, equipment, fixtures, and appliances in accordance with the established standards for an installation where the estimated contract demand is above than to 42 kVA (3 phase 60 A);

Senior Electrician - LES

i. Applicants who wish to obtain a LES license shall fulfill at least any one of the following requirements:

(a) Work experience as a LEJ Electrician as defined in these regulations for a period of not less than four years

(b) Equivalent work experience in any other country acceptable by the TVEC, under license issued by that country, for a period of not less than four years Equivalent to that of LEJ level.

(c) Successful completion of a course conducted by a recognised Educational Institute acceptable to the Licensing Authority, which should at least be equivalent to the NVQ Level 4 qualification and 2 years of subsequent practical experience under the supervision of an LES Electrician or above, contractor, operator or an electrical engineer.

ii. Applicants who satisfy the requirements of 3.3.11 (iii) shall be examined by an Examination Board appointed by the Head Licensing (3.3.1); on the following but not limited to,

(a) Knowledge of the applicable Codes and regulations related to electrical installations/equipment/apparatus;

(b) Wiring methods, types and current carrying capacities of conductors, conductor and equipment protection, and standard wiring systems and diagrams;

(c) Practical ability to plan, design, interpret electrical wiring diagrams and drawings, carry out testing, installation, maintenance, inspection, trouble shooting and repair of electrical apparatus, equipment, fixtures, and appliances in accordance with the established standards for an installation where the estimated demand is less than or equal to 42 kVA (3 phase 60 A).

Junior Electrician - LEJ

i. Applicant who wish to obtain a LEJ license shall fulfill at least any of the following requirements:

a) Successful completion of a course conducted by a recognised Educational Institute acceptable to the Licensing Authority, which may at least be equivalent to the NVQ Level 3 with at least one year in domestic electrical installation practice under the LEJ or above.

b) Knowledge and working experience for at least 5 years under the supervision of Electrician LEJ or above in domestic electrical installation practice and obtained NVQ 3 qualification

c) Electricians with Apprentice license and NVQ 3 certificate.

ii. Applicants who satisfy the requirements of 3.3.11 (v) shall be examined by an Examination Board appointed by the Head Licensing (3.3.1); on the following but not limited to,

a) Knowledge of the applicable Codes and regulations related to electrical installations/equipment/apparatus;

Wiring methods, types and current carrying capacities of conductors, conductor and equipment protection, and standard wiring systems and diagrams;

b) Practical ability to plan, design, interpret electrical wiring diagrams and drawings, carry out testing, installation, maintenance, inspection, trouble shooting and repair of electrical apparatus, equipment, fixtures, and appliances in accordance with the established standards for an installation where the estimated demand is less than or equal to 7 kVA (1 phase 30 A).

Apprentice - LEA

i. Applicants who wish to obtain an Electrician Apprentice license shall fulfill the following requirements

(a) Knowledge and working experience for at least 8 years under the supervision of Electrician LEJ or above in domestic electrical installation practice, however the license to be converted into LEJ within 2 years.

ii. Applicants who satisfy the requirements of 3.3.11 (vii) shall be examined by an Examination Board appointed by the Head Licensing (3.3.1); on the following but not limited to,

(a) Knowledge of the applicable Codes and regulations related to electrical installations/equipment/apparatus;

(b) Wiring methods, types and current carrying capacities of conductors, conductor and equipment protection, and standard wiring systems;

(c) Practical ability to plan, design, interpret electrical wiring diagrams and drawings, carry out testing, installation, maintenance, inspection, trouble shooting and repair of electrical apparatus, equipment, fixtures, and appliances in accordance with the established standards for an installation where the estimated demand is less than or equal to 7 kVA (1 phase 30 A).

3.3.12. RESPONSIBILITIES OF THE LICENSEES

i. Responsibilities of a licensed Super Grade Electrician-LEM will include

a) Supervision of all types of electrical work carried out, on behalf of the electrical contractor/operator;

b) Installing, operating, repairing, maintaining, inspecting, testing of all types of electrical appliances/apparatus/equipment such as motors, transformers, generators, lights, wiring circuits, control circuits, other electrical system equipment and components in

compliance with the applicable Codes, standards and regulations, on the advice of the electrical contractor/operator; above of 42 kVA (3Ph 60A)

c) Operating a variety of electrical testing equipment to locate and determine electrical system malfunctions and also to maintain the electricity supply quality in accordance with the specified standards;

d) Studying plans, drawings, specifications and work orders to determine work requirement and sequence of repairs and/or installations and inform the electrical contractor/operator accordingly;

e) Mentoring and guiding the junior staff;

f) In a LV electrical installation, where the estimated contract demand does not exceed 1000V, regardless of the capacity of the network**.**

ii. Responsibilities of a licensed Master Electrician-LEM will include:

(a) Supervision of all types of electrical work carried out, on behalf of the electrical contractor/operator;

(b) Installing, operating, repairing, maintaining, inspecting, testing of all types of electrical appliances/apparatus/equipment such as motors, transformers, generators, lights, wiring circuits, control circuits, other electrical system equipment and components in compliance with the applicable Codes, standards and regulations, on the advice of the electrical contractor/operator; above of 42 kVA (3Ph 60A)

(c) Operating a variety of electrical testing equipment to locate and determine electrical system malfunctions and also to maintain the electricity supply quality in accordance with the specified standards;

(d) Studying plans, drawings, specifications and work orders to determine work requirement and sequence of repairs and/or installations and inform the electrical contractor/operator accordingly;

(e) Mentoring and guiding the junior staff;

In a LV electrical installation, where the estimated contract demand does not exceed 42 kVA**.**

iii. Responsibilities of a licensed Senior Electrician- LES will include:

(a) Supervision of all types of electrical work carried out, on behalf of the electrical contractor/operator;

(b) Installing, operating, repairing, maintaining, inspecting, testing of all types of electrical appliances/apparatus/equipment such as motors, transformers, generators, lights, wiring circuits, control circuits, other electrical system equipment and components in compliance with the applicable Codes, standards and regulations, on the advice of the electrical contractor/operator; within the capacity equal or below 42 kVA (3Ph 60A)

(c) Operating a variety of electrical testing equipment to locate and determine electrical system malfunctions and also to maintain the electricity supply quality in accordance with the specified standards;

(d) Studying plans, drawings, specifications and work orders to determine work requirement and sequence of repairs and/or installations and inform the electrical contractor/operator accordingly.

(e) Mentoring and guiding the junior staff; In a LV electrical installation, where the installed capacity equal or below 42 kVA.

(f) Where the installed capacity exceeds 42 kVA, an Electrician LES shall perform tasks identified from 3.3.12 ii (a) to (e) under the supervision of an officer who has been authorised to carry out the licensed activities of at least a LEM Electrician under these regulations.

iv. Responsibilities of a licensed Electrician- LEJ will include

(a) Supervision of all types of electrical work carried out, on behalf of the electrical contractor/operator;

(b) Installing, operating, repairing, maintaining, inspecting, testing of all types of electrical appliances/apparatus/equipment such as motors, transformers, generators, lights, wiring circuits, control circuits, other electrical system equipment and components in compliance with the applicable Codes, standards and regulations, on the advice of the electrical contractor/operator; within the capacity of 7 kVA 1Ph 30A

(c) Operating a variety of electrical testing equipment to locate and determine electrical system malfunctions and also to maintain the electricity supply quality in accordance with the specified standards;

(d) Studying plans, drawings, specifications and work orders to determine work requirement and sequence of repairs and/or installations and inform the electrical contractor/operator accordingly.

(e) Mentoring and guiding the junior staff; In a LV electrical installation, where the installed capacity does not exceed 7 kVA single phase. (1phase 30A).

(f) Where the installed capacity exceeds 7 kVA, an Electrician LEJ perform the tasks identified from 3.3.12 iii (a) to (e), under the supervision of an officer who has been authorised to carry out the licensed activities of at least a LES Electrician under these regulations and

v. Responsibilities of a licensed Electrician Apprentice will include

(a) LGA shall work under the direct personal supervision and control of a LEJ electrician or a higher grade.

3.3.13. EXAMINATION BOARD

i. Examination Board appointed shall examine each applicant to determine his suitability to be granted a license to practice as an electrician in a class as defined in Section 3.3.6.

ii. The Examination Board (EB) shall consist members from following five (5) consortiums:

(a) One chartered electrical engineer who has had at least 10 years' experience in the electricity engineering industry in Sri Lanka.
(b) Member(s) representing the PUCSL
(c) Member(s) representing the TVEC.
(d) Member(s) representing the CIDA
(e) Member(s) representing the CEB.
(f) Member(s) representing the LECO.

iii. Member appointed under 3.3.13 (ii. a) shall function as the Chairperson of the EB.

iv. Period of membership of the members of the Examination Board shall be as follows:

(a) The term of office of a member of EB shall be for five years from the date of appointment.

(b) No member shall hold office continuously for a period exceeding ten years.

v. Where a member of the EB vacates office by death, resignation or any other cause, Licensing Authority shall fill that vacancy maintaining a similar composition as defined in the Section 3.3.13 (ii), and the person so appointed shall continue to serve as a member for the remainder of the term of office of the member whom he succeeds.

vi. A member of the EB shall be eligible for re-appointment for one more terms, unless he has been removed from office by the Licensing Authority.

vii. Licensing Authority shall not remove a member of the EB from office unless he

(a) is found or declared to be of unsound mind
(b) has ceased to be qualified to be a member of the EB
(c) is found to be incompetent or corrupt.

viii. The EB shall meet and hold the examinations at least quarterly during each calendar year or more frequently as the situation demands.

ix. Each member of the EB shall receive reasonable compensation for the services rendered.

3.3.14. EXAMINATION BOARD FUNCTIONS

i. EB shall submit a memorandum to the Head Licensing (3.3.1) at the commencement of each calendar year, prescribing the syllabi of the subjects and outlining its methodology of assessment to determine whether the applicant has the requisite knowledge and experience to be granted the requested license.

ii. On receiving approval for the same, it shall decide on the examination type, interviews or trade tests that are required to examine an applicant on the full scope of the license he has applied for.

iii. Within one week of completing the assessments, the EB shall report its findings and recommendations in respect of each applicant to the Head Licensing (3.3.1).

iv. EB shall recommend the applicants who achieve the minimum specified levels at the examination for the grant of the relevant license.

v. EB shall maintain a data bank of specialist professionals whose service could be obtained when examinations/interviews/trade tests have to be conducted to assess specialist electricians.

vi. Head Licensing (3.3.1) shall decide on the terms and conditions under which such specialist professionals will be hired and EB shall obtain Head Licensing's (3.3.1) approval prior to securing such services

3.3.15. TRANSITIONAL PROVISIONS

i. All individuals who have been employed as electrical tradesmen at the time these regulations are issued, shall be informed that they will be entitled to obtain the appropriate License, provided that they

   a. make a written application, within the stipulated time, to the Licensing Authority to obtain the appropriate license

   b. indicate the Class of License applied for

   c. a structured assessment of competence and experience, and a statement on responsibilities he/she has shouldered, certified by a chartered electrical engineer

ii. EB shall assess each application and take appropriate steps to award the License in accordance with the regulations enacted.

3.3.16. TRANSITIONAL PROVISIONS

ii. All individuals who have been employed as electrical tradesmen at the time these regulations are issued, shall be informed that they will be entitled to obtain the appropriate License, provided that they

   d. make a written application, within the stipulated time, to the Licensing Authority to obtain the appropriate license

   e. indicate the Class of License applied for

f. a structured assessment of competence and experience, and a statement on responsibilities he/she has shouldered, certified by a chartered electrical engineer

iii. EB shall assess each application and take appropriate steps to award the License in accordance with the regulations enacted.

4. ROAD MAP