Professional **Practice** in **Relation to EE** by Engr. Rogelio M. Avenido, PEE, Ph.D. **1986 National President, IIEE**

Professional practice in relation to Electrical Engineering is rooted on the basic core which is the Heart, Mind and Body of an Electrical Engineer. This core is circumvented by five aspects namely (a) The Basic Education, (b) the Licensure, (c) The Practice which is the main objective of this presentation, (d) The Continuity Education providing the sustaining aspect and (e) Research innovation and creativity aspect to stay competitively in the environment of ASEAN integration, the engine of growth aspect.

Each of the five aspects above mentioned will highlight the norms of detailed standards required of electrical engineers and master electricians to be locally and globally recognized.

1. Basic Education Aspect

In 2012, a program to keep our professionals at par with those of development countries in terms of standards of earning. This was the K to 12 program or kinder to 6 years elementary and intermediate education, six years of high school, and 5 years of BS engineering education making Filipino engineers one year ahead of those of other countries of engineers education with hands-on training.

This will be made possible by way of the implementation, enforcement/ compliance, Regulation (IER) entities such as the Government Agencies like the Department of Education (DEPED), Commission on Higher Education (CHED), State owned Schools, Colleges and Universities, the Professional Regulations Commission-(PRC) and the Board of Electrical Engineers (BEE) and the Private Accredited Professional Organizations (APO), IIEE, the first APO.

Basic education ensures competence to: a. Develop graduates who are well founded on mathematics, physical sciences, theories, and principles and practice of electrical engineering.

b. Assure the relevance of BSEE curriculum to industry needs technological advancement, and Global competition

2. Licensure Aspect

The Professional Regulation Commission is tasked with the testing and examination, registration, and renewal of licenses of registered engineers and master electricians after having complied with requirements of continuing education.





The grades of electrical engineers and technologists are (a) Professional Electrical Engineers, Registered Electrical Engineers and Registered Master Electricians. The implementation Enforcement and Regulation of all levels of Electrical Engineers and Technologists (Master Electrician) shall still be the government, PRC/ BEE on this aspect, the Institute of Integrated Electrical Engineers, the accredited professional organization or APO has for its service to the members to facilitate the renewal of their license and assist in their registration for examination.



The licensing of electrical engineers and technologists or master electricians will endure highly qualified Practitioners thru a system of licensure examination based on Electrical Engineering and Technology Fundamentals , laid out in the K-12 basic education that develops graduates well founded in mathematics, physics, theories, principles and practice of electrical engineering or technology outcome based for industry matching, geared for technological advancement and prepared for competition both locally and globally.



3. Practice Aspect

There are 9 practices of electrical engineering profession comprising of the following:

- 1. Design Services
- 2. Electrical Engineering Consultation
- 3. Inspection and appraisal
- 4. Research and development
- 5. Sales
- 6. Educational Services
- 7. Electrical Services
- 8. Operation and
- 9. Maintenance Services

All of the above professional practices are guided by the safety code of practice namely the Philippine Electrical Code Parts I and II, where the standard specification for design plans, materials and workmanship are thoroughly spelled out including process inspection, test and commissioning.

The IER entities involved in the Practice aspect of Electrical Engineering are the Government agencies such as the DTI, DOE, DPWH, DOT etc. while the Private Entities are the IIEE, PCCI, PCA, and SPECS. The Professional Institution, the IIEE has working committees on:

a. Professional Practice
b. Ethics
c. The Philippine Electrical Code
d. Advocacy
e. Others

The Electrical Engineering Practitioners have a Socio-Economic Responsibility in this aspect of practice

1. To safeguard public welfare, client interest through safe, reliable, cost effective design, plans installation, operation, maintenance and fit-up.

2. To preserve and protect the good name and image of the Institute and integrity of the Profession.

3. To support and assist the PRC/ BEE in the (3.1) Strict implementation of RA 7920 (3.2) Faithful compliance to its provision as a duty and moral obligation (3.3) Monitoring, reporting, sanctioning malpractice committed by IIEE members and foreigners or expatriates (3.4) Illegal practice and (3.5) malpractice.

4. Continuing Education

Continuing education is an aspect that demands an engineer to remain updated on the rapid development of electrical engineering being influenced by the modern day technologies brought about by computers at gigabyte speeds even approaching the terrabyte levels thereby raising the speed of practice of electrical engineers and master electricians.

Continuing education is facilitated by means of the following scope:

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a. Seminars b. Conventions c. Conference d. Advanced studies e. Plant Visits f. Foreign Tours g. Student Exchange Program h. Technical Exchange Program IER entities involve the government such as PRC/ BEE, DOST, PAEC and others and private entities such as IIEE and the Industry.

The role of continuing education is to ensure the competence and trustworthiness of electrical engineers and master electricians, to promote their interest and welfare through continuing technical, sociocultural and management and entrepreneurial values.

5. Research and development aspect

It is not enough under the current trend of high speed, high technology environment for electrical engineers and master electricians to merely sustain a level of competence but it is essential to grow the competence and skills through research innovation and creativity to be competitive.

This can only be done by research in practice as much as in the academe, to develop new materials, new process and procedures as well as new products. Applied research can be developed in practice because the traditional products, materials, methods, systems and procedures show deficiencies, a need for an improvement to overcome inherent defects is in order.

Basic research will find itself in the industry and the academe or the industry will tap the academe in finding answers to their ideas and concepts of a challenging problem. The scope of research and development includes the following:

 a. The problem and its background
 b. Review of related information and studies

c. Methodology

d. Presentation, analysis and interpretation of data
e. Summary of findings, conclusions and recommendations The IER entities in this aspect of R & D will be if government, DOST state schools, colleges, universities while private institutions will be IEEF, industries and private academic institutions.

The role of Research is to ensure growing competence of engineers and master electricians to guarantee their competitiveness in the Asean Economic Community beginning next year 2015.



