

PRACTICAL TRAINING GUIDELINES FOR ELECTRICAL ENGINEERS

A: INTRODUCTION

- (a) Subject to the contents of these practical training guidelines, every trainee in the Electrical engineering discipline shall complete training in the types of works specified for a minimum period of three years or as specified in the Architects, Engineers and Quantity Surveyors Regulation 2014.
- (b) In the case of research workers and other specialists, where the nature of work renders it impracticable to adhere to the requirements set out in the contents of these practical guidelines, the Board shall evaluate each individual's case separately having due regard to the practical training approved for the time being by the Board.
- (c) The main thrust for professional and technician engineer trainees is as follows:-

(i) *Professional engineers:-*

The main thrust is on knowledge, understanding subject matters, analysis and methods. Professional engineers must have analytical capabilities, adaptability to varying situations, ability to identify, rectify and design solutions, management capabilities, power and communication skills, adherence to the professional ethics and conduct as specified in the Architects, Engineers and Quantity Surveyors Regulation 2014 and as amended from time to time.

(ii) *Technician engineers:-*

The main thrust is on know-how of subject matters. Technician engineers must have independent judgement within the field, top class engineering applications, development of cost effective systems and safe procedures, applications of appropriate mathematics, science and related subjects, team and resource management.

B: CONTENTS OF PRACTICAL TRAINING

(a) *Design work*

Every trainee shall work under the supervision of a registered professional Electrical engineer for a minimum period of one year or as determined by the Board in accordance with the Architects, Engineers and Quantity Surveyors Registration Regulations during which time knowledge and experience should be acquired in most of the following areas:

- Application of relevant international and local standards, codes of practice and regulations;
- Application of Computer Aided Design (CAD) Programmes
- Project planning and appraisals;
- Cost estimates
- Development of design philosophy, requirements, assumptions and specifications;
- Design calculations, drawings and bills of quantities;

- Tendering procedures including tender preparation and tender evaluation; - International tendering procedures and practices and
- Analysis of impact on the environment and other systems of design in applications.

(b) Erection at site

Every trainee shall work under the supervision of a registered professional Electrical engineer for a minimum period of one year or as determined by the Board in accordance with the Architects, Engineers and Quantity Surveyors Regulation during which time knowledge and experience should be acquired in most of the following areas:

- Drafting of working programmes;
- Planning of plant/equipment/system, labour and financial requirements;
- Interpretation of drawings, marking and setting of erection works;
- Processing and reporting on erection works;
- Processing of financial appraisals/claims/payment certificates, and
- Supervision, testing and commissioning of works.

(c) Maintenance

Every trainee shall work under the supervision of a registered professional Electrical engineer for a minimum period of 6 months or as determined by the Board in accordance with the Architects, Engineers and Quantity Surveyors Registration Regulations during which time knowledge and experience should be acquired in most of the following areas:

- Routine condition monitoring of plant/equipment/system and rectification where parameters are beyond the required values;
- Preparation of planned maintenance schedules for plant/equipment/system;
- Fault diagnosis and servicing/overhauling techniques for plant/equipment/system and
- Plan, design and specify materials required for corrective and preventive maintenance of plant/equipment/system, including preparation of schedules for costs of materials and labour requirement

(d) General Management

Every trainee shall work under the supervision of a registered professional Electrical engineer for a minimum period of 6 months or as determined by the Board in accordance with the Architects, Engineers and Quantity Surveyors Registration Regulations during which time knowledge and experience should be acquired in most of the following areas:

- Office management including knowledge of organization structures and their translation in practice;
 - Communication skills;
 - Labour management including staff regulations, labour laws and Industrial laws;
 - Materials management including specifications, procurement, storage and handling;
 - Knowledge of Safety regulations and first aid procedures;
 - Planning and control of resources i.e. human, material and finance;
 - Contracts management;
 - Quality management and
 - Energy management.
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