

THE PROPOSED ELECTRICAL ENGINEERING LAW OF 2017...

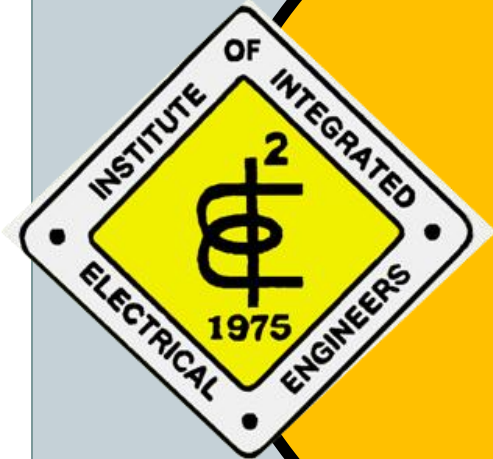
A PRESENTATION DURING THE 42nd IIEE ANNUAL NATIONAL CONVENTION, SMX, MOA, PASAY CITY

PART II

WHAT ARE THE SIGNIFICANT
CHANGES OF THIS PROPOSED NEW
LAW FROM THAT OF R.A. 7920?

HB # 1622/
SB # 1127

SALIENT POINTS...



WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED NEW LAW FROM THAT OF R.A. 7920?

HIGHLIGHTS

1) A Declaration of Policy

Note that in R.A. 7920, **there is no Declaration of Policy.**

In this Bill, Declaration of Policy states that:

**ART. I, SECTION 2
DECLARATION OF POLICY**

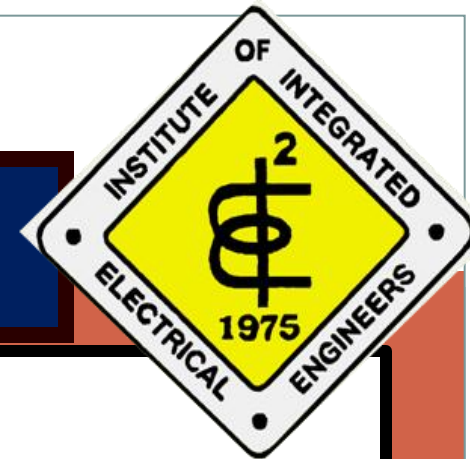
5 *SEC. 2. Declaration of Policy.* — The State recognizes the importance of electrical
6 practitioners in nation-building. Towards this end, the State fosters, develops and nurtures a
7 pool of proficient & quality electrical engineering practitioners whose standards of practice
8 shall be outstanding, honorable & globally competitive. The State shall provide rational
9 regulatory measures that are responsive to the growing needs of the electrical engineering
10 profession considering the advances in technology and globalization.

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED
NEW LAW FROM THAT OF R.A. 7920?

HIGHLIGHTS

2) Wider Definition of Terms Used as Reference in
Regulating the
Practice of the Electrical Profession.

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED NEW LAW FROM THAT OF R.A. 7920?



The proposed new law manifests more comprehensive definition of terms surrounding the profession.

- ❖ From 15 terms defined in RA 7920 to 55 in this proposed law.
- ❖ This new set of Definition of Terms will help clear the ambiguity of scopes, coverage of practice, specific systems or processes to differentiate other disciplines and to eliminate misinterpretation.

(See Section 3a – 3ss).

ART. I, SEC. 3: DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
1	<u>"Electrical Engineering"</u>	3a
2	<u>"Practice of Electrical Engineering"</u>	3b
3	<u>"Electrical Practice of Responsible Character"</u>	3c
4	<u>"Authorized Electrical Engineering Practitioner"</u>	3d
5	<u>"Consulting Electrical Engineer"</u>	3e
6	<u>"Electrical System Designer"</u>	3f
7	<u>"Electrical Engineer-in-Charge"</u>	3g
8	<u>"Electrical Project Engineer-in-Charge"</u>	3h
9	<u>"Electrical System"</u>	3i

DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
10	<u>“Electrical System Design”</u>	3j
11	“Service Agreement”	3k
12	<u>“Electrical Works or Projects”</u>	3l
13	<u>“Electrical Equipment or Machinery”</u>	3m
14	<u>“Electric Supply Equipment”</u>	3n
15	<u>“Utilization Equipment”</u>	3o
16	<u>“Electric Power Plant”</u>	3p
17	<u>“Industrial Plant or Factory or Manufacturing Plant”</u>	3q
18	<u>“Industrial Complex”</u>	3r

DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
19	<u>“Electrical Eqpt Manufacturing Plant”</u>	3s
20	<u>“Commercial Establishment”</u>	3t
21	<u>“Commercial Complex”</u>	3u
22	<u>“Institutional Buildings”</u>	3v
23	<u>“Capacity of Industrial Plant”</u>	3w
24	<u>“Capacity of Electric Power Plant”</u>	3x
25	<u>“Power Grid or Grid”</u>	3y
26	<u>“Grid System Operation & Control”</u>	3z
27	<u>“Distribution System Operation & Control”</u>	3aa

DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
28	<u>“Substation”</u>	3bb
29	<u>“System Nominal Voltage or Voltage”</u>	3cc
30	<u>“kVA or MVA”</u>	3dd
31	<u>“kW or MW”</u>	3ee
32	<u>“Watercraft”</u>	3ff
33	<u>“Electric Locomotive”</u>	3gg
34	<u>“Unsafe Installations”</u>	3hh
35	<u>“Unsafe Design”</u>	3ii
36	<u>“Philippine Electrical Code”</u>	3jj

DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
37	<u>“Electrical Plans”</u>	3kk
38	<u>“As-Built Plans”</u> or <u>“As-Built Drawings”</u>	3ll
39	<u>“Office of the Building Official”</u>	3mm
40	<u>“Certified Electrical System Inspector”</u>	3nn
41	<u>“Certified Electrical Plan Inspector”</u>	3oo
42	<u>“Distribution Utility or DU”</u>	3pp
43	<u>“Electric Cooperative”</u> or <u>“EC”</u>	3qq
44	<u>“Electrical Firm”</u>	3rr
45	<u>“Continuing Professional Development”</u>	3ss

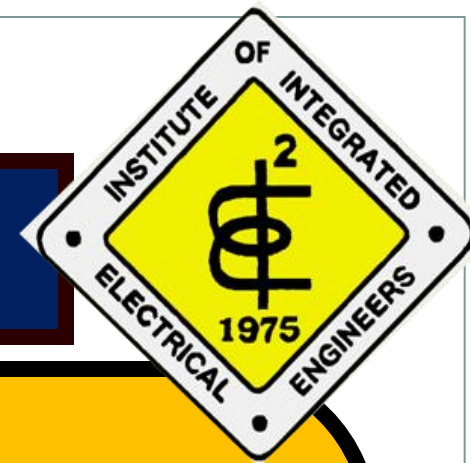
DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
46	“Electrical Consultancy Service”	3b.1
47	“Professional Design Service”	3b.2
48	“Electrical Systems for Dwellings & Residence”	3i.I
49	“Electrical Systems of Buildings & Commercial Complexes”	3i.II
50	“Electrical Systems of Factories & Industrial Complexes”	3i.III
51	“Electrical Systems of Power Plants”	3i.IV
52	“Power Transmission System”	3i.V
53	“Power Distribution System”	3i.VI
54	“Electrical System for Watercrafts”	4i.VII

DEFINITION OF TERMS

ITEM	TERMS DEFINED	SECTION
55	“Electrical System for Electric Locomotives”	3i.VIII

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED NEW LAW FROM THAT OF R.A. 7920?



HIGHLIGHTS

- 3) More Substantive Provisions for the Field of Practice of Responsible Character of Electrical Practitioners.

The “practice of electrical engineering” refers to the professional act of responsible character of performing electrical engineering services in the form of:

- 1) Consultancy Services (*Section b1*)**
- 2) Professional Design Services (*Section b2*)**
- 3) Management, Supervision or Taking Charge of:**
 - ❖ **Electrical Construction or Projects (*Section b3*)**
 - ❖ **Operation, Maintenance of Electrical Systems & Processes (*Section b4*)**
 - ❖ **Manufacture, Fabrication & Repair of Electrical Equipment (*Section b5*)**
 - ❖ **Sale, Supply & Distribution of Electrical Equipment & Components (*Section b6*)**
- 4) Teaching of Electrical Engineering Subjects in Colleges & Universities (*Section b7*)**
- 5) Employment in Government Offices as Electrical Engineers (*Section b8*)**

By 'responsible character', the provisions on the fields of practice are enhanced with civil accountability as follows:

- 1) A Professional EE (PEE) who authored the Plans & Designs as Electrical System Designer-on-Record with the Office of the Building Official shall have full **Civil Liability** over the Plans, Designs, Specifications, and Contract Documents bearing his signature & seal for a **period of 15 years**,
- 2) A Professional EE (PEE) or Registered EE (REE) who is directly responsible in the supervision of an electrical construction in compliance of the Plans & Designs-on-Record with the Office of the Building Official shall have full **Civil Liability** over the quality workmanship of the installation process for a **period of 15 years**.
- 3) Moreover, the proposed Law requires the faithful compliance to the **Philippine Electrical Code** and **Philippine-Recognized International Standards** for System Design & Installation methods/processes.

ART. I, SECTION 3c (Definition of Terms)

78 *c) Electrical Practice of Responsible Character* – refers to the maturity, experience,
79 confidence and the accountability over the practitioner’s work whether design, execution or
80 implementation of projects or operation and maintenance, as guaranteed safe to lives and the
81 preservation of properties to include the responsibility over the safety and well being of the
82 personnel under the practitioner’s supervision.

ART. I, SECTION 3d (Definition of Terms)

83 *d) Authorized Electrical Engineering Practitioner* refers to a person professionally and
84 academically qualified, registered and licensed to practice electrical engineering as defined in
85 this Act, with a Certificate of Registration by the Professional Regulatory Board of Electrical
86 Engineering and a valid professional identification card issued by the Professional
87 Regulations Commission as Professional Electrical Engineer, Registered Electrical Engineer
88 or Registered Master Electrician.

89 *e) Consulting Electrical Engineer* refers to a highly-experienced, academically
90 qualified, recognized by a professional organization, licensed and authorized Professional
91 Electrical Engineer, who with acknowledged outstanding proficiency in specialized fields of
92 Electrical Engineering, provides expert Consultancy and Professional Design Services to
93 clients;

ART. I, SECTION 3f & 3g (Definition of Terms)

94 *f) Electrical System Designer* refers to the authorized Professional Electrical Engineer
95 having a Service Agreement with a Client as defined in this Act, who is directly responsible
96 for the authorship of plans and designs of the Electrical System of a Project-on-Record with
97 the Office of the Building Official and who shall assume the civil liability for the plans,
98 specifications and contract documents bearing his signature and seal;

99 *g) Electrical Engineer-In-Charge* refers to the authorized Electrical Engineering
100 Practitioner registered and licensed to practice Electrical Engineering, who is directly
101 responsible of the supervision or taking charge of the operation, tending and maintenance of
102 electric plants, electric power transmission and distribution systems, substations and
103 switching stations, industrial plants and complexes, commercial buildings and complexes,
104 electric locomotives and watercrafts, and other facilities involving electrical systems subject
105 to limitations as defined in this Act;

ART. I, SECTION 3h (Definition of Terms)

106 *h) Electrical Project Engineer-In-Charge* refers to the authorized Electrical Engineering
107 Practitioner registered and licensed to practice Electrical Engineering, who is directly and
108 professionally responsible in the supervision of electrical construction in faithful compliance
109 of the design plans-on-record of a Project-on-Record with the Office of the Building Official
110 (OBO), and who shall be liable and accountable for the civil liability over the quality
111 workmanship of the installation process;

ART. IV, SECTION 32a (Field of Practice)

924 **SEC. 32. *Field of Practice.*** – The field of practice of responsible character for
925 Professional Electrical Engineers, Registered Electrical Engineers, and Registered Master
926 Electricians shall be as follows:

927 a) The Professional Electrical Engineer's field covers the practice of the electrical
928 engineering profession in its full scope without limits as to voltage levels or MVA capacities
929 to include the sole authority to design electrical systems, provided that such designs, plans
930 and specifications related therein shall bear his signature and seal as author of official
931 documents appurtenant thereto the responsibilities and accountabilities, as defined in this Act.

932 Further, that the Professional Electrical Engineer-of-Record with the Office of the
933 Building Official and Author of Electrical Documents submitted bearing his seal and
934 signature shall have full liability over these said documents for a period of fifteen (15) years;
935 unless his responsibility is assumed by another Professional Electrical Engineer who made
936 modification to the electrical system under the new employ of the establishment owner or
937 management.

938 Further, that a professional electrical engineer shall be eligible for any position that
939 requires a Master's Degree holder in a government or private institution, including teaching
940 professional subjects in electrical engineering course whether in public or private schools.

ART. IV, SECTION 32b (Field of Practice)

941 b) Subject to the limitations as defined in this Act, a Registered Electrical
942 Engineer's field of practice includes the taking charge and supervision of projects execution
943 and installation works; operation and maintenance of electrical systems in power plants,
944 industrial plants, commercial buildings or complexes, watercrafts, electric locomotives, and
945 other electric systems; to include manufacture and repair of electrical equipment and
946 machines, switchboards, transformers, generators, motors, electrical apparatuses; teaching of
947 electrical engineering subjects and allied sciences; and the sale and distribution of electrical
948 equipment requiring engineering calculations or application of engineering data.

949 Further, that the Registered Electrical Engineer-of-Record with the Office of the
950 Building Official on documents issued bearing his name and signature over the supervision of
951 an electrical installation shall have full civil liability over these said installations for a period
952 of fifteen (15) years; unless his responsibility is assumed by another Registered Electrical
953 Engineer who made modification to the electrical system under new employ of the
954 establishment owner or management.

ART. IV, SECTION 32c (Field of Practice)

955 c) Subject to the limitations as defined by this Act, a Registered Master
956 Electrician's field of practice includes the installation, erection, wiring of electrical projects;
957 operation, maintenance and repair of electrical machinery, equipment and devices in an
958 electric system of residential, institutional, commercial and industrial plants, in power plants,
959 industrial substations, watercrafts, electric locomotives, to include installation of
960 transmission, distribution and substation system equipment; erection and installation of
961 electric poles, towers and other related structures, installation of line hardwares, stringing of
962 power lines, switching equipment and devices; banking of transformers; to include but not
963 limited to operation, maintenance and repair thereat. *Provided*, That if the scope of work, or
964 the machinery, equipment or the electrical system involved is rated in excess of seven
965 hundred fifty kilovolt-amperes (750 kVA), or in excess of six hundred volts (600 V), the
966 Registered Master Electrician shall be under the supervision of a professional electrical
967 engineer or a registered electrical engineer.

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED
NEW LAW FROM THAT OF R.A. 7920?

HIGHLIGHTS

4) Clearer Mandate on:

“Who are Authorized to Practice’ Electrical
Technology & Electrical
Engineering Profession.

A more purposive characterization on who are 'authorized to practice' electrical engineering is better defined.

Note that: Passing the board examinations, registration with the PRC as professionals and taking the professional oath are not enough.

In this proposed Law, **the professional is not allowed to practice unless his PROFESSIONAL ID is valid.**

He may have the license for a lifetime but without this valid identification, his practice would be a violation. **(See Sections 3d.**



"Authorized Electrical Engineering Practitioner" –

refers to a person professionally and **academically qualified**, registered & licensed to practice in any grade of electrical engineering as defined in this Act, with a Certificate of Registration by the Professional Regulatory Board of Electrical Engineering and a *valid Professional Identification Card* issued by the Commission as Professional Electrical Engineer, Registered Electrical Engineer, or **Registered Master Electrician.** (See ***Section 3d***)

ART. 1, SECTION 3c (Definition of Terms)

78 *c) Electrical Practice of Responsible Character* – refers to the maturity, experience,
79 confidence and the accountability over the practitioner’s work whether design, execution or
80 implementation of projects or operation and maintenance, as guaranteed safe to lives and the
81 preservation of properties to include the responsibility over the safety and well being of the
82 personnel under the practitioner’s supervision.

ART. 1, SECTION 3d (Definition of Terms)

83 *d) Authorized Electrical Engineering Practitioner* refers to a person professionally and
84 academically qualified, registered and licensed to practice electrical engineering as defined in
85 this Act, with a Certificate of Registration by the Professional Regulatory Board of Electrical
86 Engineering and a valid professional identification card issued by the Professional
87 Regulations Commission as Professional Electrical Engineer, Registered Electrical Engineer
88 or Registered Master Electrician.

ART. IV, SECTION 33a
(Sundry Provisions Relative to the Practice of EE)

968 **SEC. 33. *Prohibitions in the Practice of Electrical Engineering.*** – It shall be unlawful
969 for any person to:

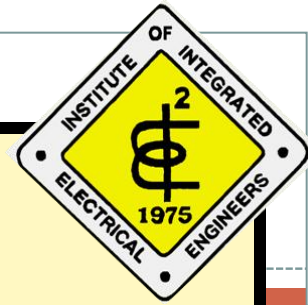
970 a) Practice or offer to practice electrical engineering in the Philippines without
971 having previously obtained a certificate of registration, professional license and a valid ID
972 issued by the PRC qualifying him as an Authorized Electrical Engineering Practitioner as
973 defined in this Act, except as provided for in Section 15 hereof;

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED
NEW LAW FROM THAT OF R.A. 7920?

HIGHLIGHTS

5) Clearer Mandate on:

‘Who Are Authorized to Teach’ Electrical
Engineering Courses in Colleges &
Universities.



A more purposive characterization on who are *“authorized to teach”* in the electrical engineering course.

“Teaching Electrical Engineering” is one scope of practice of electrical engineering since history (R.A. 184).

‘Teaching’ without the authority to practice Electrical Engineering as defined in this proposed Law would be a violation. ***(See Sections 3b7.***

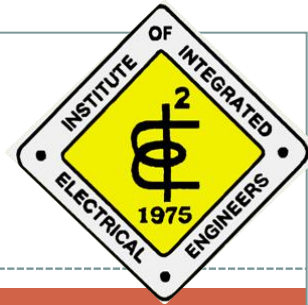
In this proposed Law, the minimum requirements for the 'field of practice of teaching electrical engineering' shall be:

1) For Basic Electrical Engineering subjects & allied sciences:

- ❖ Registered EE (REE), or;
- ❖ Professional EE (PEE)

2) For Professional Electrical Engineering subjects:

- ❖ Professional EE (PEE), or;
- ❖ Registered EE (REE) with a Masteral or Doctorate Degree related to electrical engineering



ART. I, SECTION 3b7
FIELD OF PRACTICE OF ELECTRICAL ENGINEERING
Definition of Terms

69 7) Teaching of basic and professional electrical engineering subjects in
70 government-recognized engineering schools including allied sciences, the Electrical
71 Engineering Law, the Philippine Electrical Code and International Electrical Standards
72 and their applications into the electrical industry;

ART. IV, SECTION 33n

Sundry Provisions: Prohibitions in the Practice of Electrical Engg

1019 n) Teach basic electrical engineering subjects and allied sciences unless the person
1020 is a duly Registered Electrical Engineer or Professional Electrical Engineer authorized to
1021 practice as defined by this Act; and

ART. IV, SECTION 33o

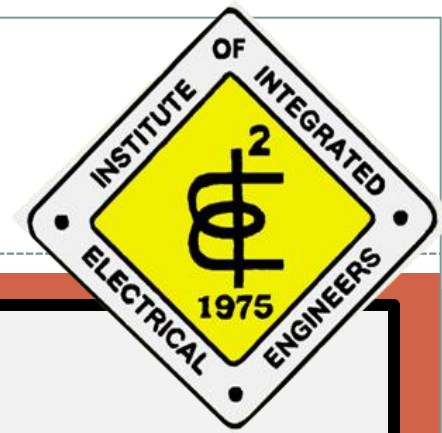
Sundry Provisions: Prohibitions in the Practice of Electrical Engg

1022 o) Teach professional subjects in electrical engineering course unless the person is
1023 an authorized Professional Electrical Engineer; or an authorized Registered Electrical
1024 Engineer with a Masteral or Doctorate Degree related to electrical engineering.

WHAT ARE THE SIGNIFICANT CHANGES OF THIS PROPOSED NEW LAW FROM THAT OF R.A. 7920?

HIGHLIGHTS

6) The Much-Improved Employability amongst Licensed Electrical Practitioners, as embodied in the Provision for 'Minimum Complement of Licensed Practitioners' in Power Plants, Industrial Plants, Transmission/ Distribution Systems & Commercial Complexes,



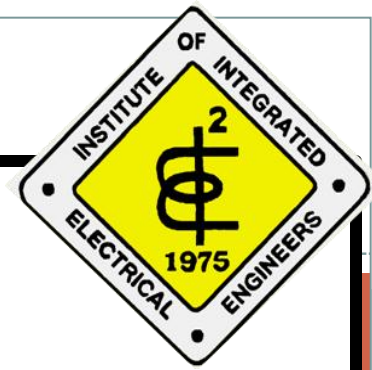
A wider and more comprehensive field & coverage of the practice of the profession introducing the concept of kVA capacities as a measureable reference for the minimum requirements of complement of licensed personnel is one of the highlights of this proposed law.

Note that the reference to kVA or MVA Capacities as viz-a-viz requirements of complement of personnel is not covered by both R.A. 184 & R.A. 7920.

PLEASE NOTE THAT:

- 1) In RA 7920, the REE is allowed to practice the full scope of the profession without limits as to voltage & capacity including designing; except “sealing”.
- 2) *This means that regardless of how small or how enormous the Power Plant, or the Grid, or the Industrial or Commercial Complex is; RA 7920 only requires only one REE per shift. In several instances of reality, this provision is physically & technically illogical or impractical, but sadly, compliant to the Law.*
- 3) That’s why in this proposed Law, the concept of kVA capacities as measureable reference viz-a-viz the field & coverage of resident manning complement of electrical practitioners inside the Industry, Utility, Grid , Commercial Complexes & other Establishments; is one of the major features this proposed Law.

By “CAPACITY” it means...



“Capacity of Industrial Plant, Commercial Establishment, Process Work or Project” –

refers to the rated capacity in **Kilovolt-Amperes (kVA)** or **Megavolt-Amperes (MVA)** of electrical works or projects, or industrial or commercial establishments for the purpose of this Act shall be the Total Kilovolt-Ampere (KVA) or Total Megavolt-Ampere (MVA) rating of all generators and transformers ***wherein which are installed to make available the capability to provide certain amount of power*** for use as electric supply equipment in such works, projects or plants, or establishments whether in operation or not, and without regard to the connected loads requiring power from power sources.

The extensive focus on the minimum personnel requirements has been broadened in more specific terms, to include that of the *registered master electricians*.

This *'complement of authorized electrical practitioners'* will not only help ensure public safety and preservation of lives & properties inside public or private establishments but also enhances and strengthens the employability & dignity of the profession.

ART. I, SECTION 3dd
Definition of Terms

304 *dd)* For purposes of this Act, the term, *kVA* or *MVA* refers to the capacity of an
305 electric plant or ratings of supply equipment expressed in kilovolt-amperes or megavolt-
306 amperes. *kVA* or *MVA* is also referred to as the connected load of industrial plants,
307 commercial edifices and other establishments expressed in kilovolt-amperes or megavolt-
308 amperes;

ART. I, SECTION 3w
Definition of Terms

262 *w) Capacity of Industrial Plant, Commercial Establishment, Process Work or Project*
263 refers to the rated capacity in Kilovolt-Amperes (kVA) or Megavolt-Amperes (MVA) of
264 electrical works or projects, or industrial or commercial establishments for the purpose of this
265 Act shall be the Total Kilovolt-Ampere (kVA) or Total Megavolt-Ampere (MVA) rating of
266 all generators and transformers *installed to make available the capability to provide certain*
267 *amount of power* for use as electric supply equipment in such works, projects or plants, or
268 establishments whether in operation or not, and without regard to the connected loads
269 requiring power from power sources;

ART. I, SECTION 3x
Definition of Terms

270 *x) Capacity of Electric Power Plant* refers to the aggregate or total rated capacity in
271 Kilovolt-Amperes (kVA) or Megavolt-Amperes (MVA) of all generators within the plant to
272 include the capacities of transformer tie-ups with other power sources that are owned,
273 operated & controlled by the plant which are installed to make available the capability to
274 provide certain amount of power without regard whether in operation or not;

ART. IV, SECTION 35
Sundry Provisions Relative to the Practice
of Electrical Engineering

1079 **SEC. 35.** *Minimum Personnel Required for Industrial and Commercial*
1080 *Complexes.* – Except as otherwise provided in this Act, every building or commercial
1081 complex, industrial plant, factory, manufacturing plant in an industrial complex or any
1082 electrical system or process in operation, shall have not less than the following complement
1083 of authorized electrical engineering practitioners:

ART. IV, SECTION 36
Sundry Provisions Relative to the Practice
of Electrical Engineering

1128 **SEC. 36.** *Minimum Personnel Required for Electric Power Plants.* – Except as
1129 otherwise provided in this Act, any Electric Power Plant in operation shall have not less than
1130 the following complement of resident authorized electrical engineering practitioners:

ART. IV, SECTION 37
Sundry Provisions Relative to the Practice
of Electrical Engineering

1154 **SEC. 37.** *Minimum Personnel Required for Power Substation of Grid and*
1155 *Distribution Utilities.* – Except as otherwise provided in this Act, Power Substations of Grid
1156 and Distribution Utilities shall have not less than the following complement of resident
1157 authorized electrical engineering practitioners:

ART. IV, SECTION 38
Sundry Provisions Relative to the Practice of Electrical Engineering

1174 *SEC. 38. Minimum Personnel Required for Grid System Operation.* – Except as
1175 otherwise provided in this Act, all resident authorized electrical practitioners in Grid System
1176 Operations shall have minimum requirements of at least Registered Electrical Engineers or
1177 Professional Electrical Engineers during shift operations and one Professional Electrical
1178 Engineer as Head or Managing Electrical Engineer for every department, division or section,
1179 as the case may be.

1180 Further, that additional qualified personnel shall be employed to ensure safe operation
1181 and safeguard public welfare, commensurate to the size and complexity of operation.

ART. IV, SECTION 39
Sundry Provisions Relative to the Practice of Electrical Engineering

1182 *SEC. 39. Minimum Personnel Required for Distribution System Operation.* –
1183 Except as otherwise provided in this Act, all resident electrical practitioners in Distribution
1184 System Operations shall have minimum requirements of at least Registered Electrical
1185 Engineers or Professional Electrical Engineers during shift operations, and one Professional
1186 Electrical Engineer as Head or Managing Electrical Engineer for every department, division
1187 or section as the case may be.

1188 Further, that additional qualified personnel shall be employed to ensure safe operation
1189 and safeguard public welfare, commensurate to the size and complexity of operation.

ART. IV, SECTION 40
Sundry Provisions Relative to the Practice of Electrical Engineering

1190 **SEC. 40.** *Minimum Personnel Required in Electrical Construction Works or*
1191 *Projects.* – For electrical works or projects under construction the installation, erection,
1192 wiring, in an electric system in residential, institutional, commercial and industrial buildings,
1193 power plants, substations, shipbuilding and other electrical projects shall have the following
1194 complement of authorized electrical engineering practitioners:

ART. IV, SECTION 41
Sundry Provisions Relative to the Practice of Electrical Engineering

1208 **SEC. 41.** *Minimum Personnel Required for an Electrical Equipment*
1209 *Manufacturing Plant.* –
1210 a) The minimum personnel requirement for this type of plant shall be covered
1211 under Section 35 of this Act;
1212 b) *Provided, however,* That full-time professional electrical engineers shall be
1213 mandatory for the designing section of the plant overseeing, supervising and ensuring
1214 over the design of special equipment as transformers, motors, switchgears,
1215 switchboards, control-gears, motor control centers, power panels and panelboards,
1216 and the like.

ART. IV, SECTION 42
Sundry Provisions Relative to the Practice of Electrical Engineering

1217 **SEC. 42.** *Minimum Personnel Required in Watercrafts and Electric Locomotives. –*
1218 Watercrafts or electric locomotives operating with installed generating capacity up to the
1219 maximum size and voltage available for these units - shall have the following complement of
1220 authorized electrical engineering practitioners:

Let's see some specifics in the next
slides...

THE PROPOSED NEW EE LAW

SECTION 35A: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Capacities: 150 kVA up to 300 kVA

One (1) *resident* Registered Master Electrician (RME) as authorized electrical practitioner responsible and civilly liable as to the integrity and safety of the electrical system to include any changes, alteration, addition, subtraction of any parts of the electrical system thereof;

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel of one (1) RME per shift.

THE PROPOSED NEW EE LAW

SECTION 35B: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Above 300 kVA up to 750 kVA

One (1) *resident* Registered Master Electrician (RME) as authorized electrical practitioner responsible and civilly liable as to the integrity and safety of the electrical system to include any changes, alteration, addition, subtraction of any parts of the electrical system thereof;

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel herein required as:

One (1) *resident* Registered Master Electrician (RME) per Shift

AND

One (1) *resident* Registered Master Electrician (RME) *or* one (1) *resident* Registered Electrical Engineer (REE) as Head whose scope of responsibility includes operation & maintenance.

THE PROPOSED NEW EE LAW

SECTION 35c: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Above 750 kVA up to 5000 kVA

Two (2) *resident* Registered Master Electricians (RME)

AND

One (1)) *resident* Registered Electrical Engineer (REE) *or* Professional Electrical Engineer (PEE)

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel herein required as:

Two (2) *resident* Registered Master Electricians (RME) per Shift

AND

One (1) *resident* Registered Electrical Engineer (REE) *or* one (1) *resident* Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW

SECTION 35D: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Above 5000 kVA up to 20,000 kVA

Three (3) *resident* Registered Master Electricians (RME)

AND

One (1)) *resident* Registered Electrical Engineer (REE) *and one (1) resident* Professional Electrical Engineer (PEE)

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel herein required as:

Three (3) *resident* Registered Master Electricians (RME) and One (1) Registered Electrical Engineer (REE) per Shift

AND

One (1) *resident* Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW

SECTION 35E: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Above 20,000 kVA up to 60,000 kVA

Four (4) *resident* Registered Master Electricians (RME)

AND

Two (2)) *resident* Registered Electrical Engineers (REE) *and one (1) resident* Professional Electrical Engineer (PEE)

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel herein required as:

Four (3) *resident* Registered Master Electricians (RME) and Two (2) Registered Electrical Engineers (REE) per Shift

AND

One (1) *resident* Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW

SECTION 35F: MINIMUM PERSONNEL REQUIRED

INDUSTRIAL & COMMERCIAL COMPLEXES

Above 60,000 kVA...

Five (5) *resident* Registered Industrial Electricians (RIE)

AND

Three (3)) *resident* Registered Electrical Engineers (REE) *and one (1) resident* Professional Electrical Engineer (PEE)

Provided, That every factory, building or commercial complex in this category operating in more than one shift in every twenty-four hours, shall have the minimum personnel herein required as:

Five (5) *resident* Registered Industrial Electricians (RIE) and Three (3) Registered Electrical Engineers (REE) per Shift

AND

One (1) *resident* Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 36A: MINIMUM PERSONNEL REQUIRED

POWER PLANTS **(OPERATING MORE THAN ONE SHIFT)**

Up to 20,000 kVA...

One (1) Registered Master Electrician (RME) and One (1) Registered Electrical Engineer (REE) per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 36B: MINIMUM PERSONNEL REQUIRED

POWER PLANTS **(OPERATING MORE THAN ONE SHIFT)**

Above 20,000 kVA Up to 60,000 kVA...

Two (2) Registered Master Electricians (RME) and One (1) Registered Electrical Engineer (REE) per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 36C: MINIMUM PERSONNEL REQUIRED

POWER PLANTS **(OPERATING MORE THAN ONE SHIFT)**

Above 60,000 kVA Up to 200,000 kVA...

Four (4) Registered Master Electricians (RME) and Two (2) Registered Electrical Engineers (REE) and One Professional Electrical Engineer (PEE) as Head of Shift Operation per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 36D: MINIMUM PERSONNEL REQUIRED

POWER PLANTS **(OPERATING MORE THAN ONE SHIFT)**

Above 200,000 kVA...

Six (6) Registered Master Electricians (RME) and Three (3) Registered Electrical Engineers (REE) and One Professional Electrical Engineer (PEE) as Head of Shift Operation per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 37A: MINIMUM PERSONNEL REQUIRED

POWER SUBSTATIONS OF GRID & DISTRIBUTION UTILITIES (DU'S)

FOR SINGLE OR CLUSTERS OF MANNED SUBSTATIONS OF GRID OR DISTRIBUTION UTILITIES (DU'S) UP TO 75 MVA IN SPECIFIC INCLUSIVE AREA OR LOCATION:

One (1) Registered Master Electrician (RLE) and One (1) Registered Electrical Engineers (REE) per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 37B: MINIMUM PERSONNEL REQUIRED

POWER SUBSTATIONS OF GRID & DISTRIBUTION UTILITIES (DU'S)

FOR SINGLE OR CLUSTERS OF MANNED SUBSTATIONS OF GRID OR DISTRIBUTION UTILITIES (DU'S) ABOVE 75 MVA UP TO 200 MVA IN SPECIFIC INCLUSIVE AREA OR LOCATION:

Two (2) Registered Master Electricians (RME) and One (1) Registered Electrical Engineers (REE) per Shift as resident complement.

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW



SECTION 37C: MINIMUM PERSONNEL REQUIRED

POWER SUBSTATIONS OF GRID & DISTRIBUTION UTILITIES (DU'S)

FOR SINGLE OR CLUSTERS OF MANNED SUBSTATIONS OF GRID OR DISTRIBUTION UTILITIES (DU'S) ABOVE 200 MVA IN SPECIFIC INCLUSIVE AREA OR LOCATION:

As resident complement:

Three (3) Registered Master Electricians (RME) *and* Two (2) Registered Electrical Engineers (REE) per Shift *and* One (1) Professional Electrical Engineer (PEE) as Head of Shift Operations

AND

One (1) resident Professional Electrical Engineer (PEE) in-Charge as Managing Electrical Engineer whose scope of responsibility includes over-all operation and maintenance.

THE PROPOSED NEW EE LAW

SECTION 38: MINIMUM PERSONNEL REQUIRED

GRID SYSTEM OPERATION

Regardless of the size and complexity of Grid System Operations, all resident authorized electrical practitioners in this category shall have a minimum requirement of at least Registered Electrical Engineers or Professional Electrical Engineers during shift operations and one Professional Electrical Engineer as Head or Managing Electrical Engineer for every department, division or section as the case may be.

Further, That Grid System Operation shall have operational control over unmanned, automated substations of all types and sizes under its control.

Furthermore, that additional qualified personnel shall be employed to ensure safe operation and safeguard public welfare, commensurate to the size and complexity of operation.

THE PROPOSED NEW EE LAW

SECTION 39: MINIMUM PERSONNEL REQUIRED

DISTRIBUTION SYSTEM OPERATION

Regardless of the size and complexity of Distribution System Operations, all resident electrical practitioners in this category shall have a minimum requirement of at least *Registered Electrical Engineers or Professional Electrical Engineers during shift operations, and one Professional Electrical Engineer as Head or Managing Electrical Engineer for every department, division or section as the case may be.*

Further, that Distribution System Operation shall have operational control over unmanned automated substations of all types and sizes under its control.

Further, that; additional qualified personnel shall be employed to ensure safe operation and safeguard public welfare, commensurate to the size and complexity of operation.

THE PROPOSED NEW EE LAW

SECTION 40A: MINIMUM PERSONNEL REQUIRED

Electrical Construction Works or Projects

For electrical works or projects under construction; the installation, erection, wiring, in an electric system in residential, institutional, commercial & industrial buildings, power plants, substations, shipbuilding and other electrical projects

150 kVA up to 750 kVA capacity

One (1) Registered Master Electrician (RME) as Electrician-In-Charge, *and*, one (1) Registered Electrical Engineer as Project Engineer-In-Charge,

AND

One (1) Professional Electrical Engineer as Project Manager or Consultant.

THE PROPOSED NEW EE LAW

SECTION 40B: MINIMUM PERSONNEL REQUIRED

Electrical Construction Works or Projects

For electrical works or projects under construction; the installation, erection, wiring, in an electric system in residential, institutional, commercial & industrial buildings, power plants, substations, shipbuilding and other electrical projects

Over 750 kVA up to 5,000 kVA Capacity

Two (2) Registered Master Electricians (RME) as Electricians-In-Charge, *and*, one (1) Registered Electrical Engineer as Project Engineer-In-Charge,

AND

One (1) Professional Electrical Engineer as Project Manager or Consultant.

THE PROPOSED NEW EE LAW

SECTION 40C: MINIMUM PERSONNEL REQUIRED

Electrical Construction Works or Projects

For electrical works or projects under construction; the installation, erection, wiring, in an electric system in residential, institutional, commercial & industrial buildings, power plants, substations, shipbuilding and other electrical projects

Over 5,000 kVA Capacity

Three (3) Registered Master Electricians (RME) as Electricians-In-Charge, *and*, two (1) Registered Electrical Engineers (REE) as Project Engineer-In-Charge,

AND

One (1) Professional Electrical Engineer as Project Manager, and One (1) Professional EE as Consultant.

THE PROPOSED NEW EE LAW

SECTION 41 A&B: MINIMUM PERSONNEL REQUIRED

ELECTRICAL EQUIPMENT MANUFACTURING PLANT

41a: The minimum personnel requirement for this type of plant shall be covered under Section 35 of this Act.

42.b: Provided however, that; full-time professional electrical engineers shall be mandatory for the designing section of the plant overseeing, supervising & ensuring over the design of special equipment as transformers, motors, switchgears, switchboards, control-gears, motor control centers, power panels & panelboards, and the like.

THE PROPOSED NEW EE LAW

SECTION 42A: MINIMUM PERSONNEL REQUIRED

Watercrafts & Electric Locomotives

Watercrafts or electric locomotives *operating* with installed generating capacity up to the maximum size and voltage available for these units - shall have the following complement of authorized electrical engineering practitioners:

UP TO 750 KVA WITH VOLTAGES NOT EXCEEDING 600 VOLTS

One (1) Registered Industrial Electrician (RIE)

OR

One (1) Registered Electrical Engineer (REE)

THE PROPOSED NEW EE LAW

SECTION 42B: MINIMUM PERSONNEL REQUIRED

Watercrafts & Electric Locomotives

Watercrafts or electric locomotives operating with installed generating capacity up to the maximum size and voltage available for these units - shall have the following complement of authorized electrical engineering practitioners:

ABOVE 750 kVA UP TO 5,000 kVA

One (1) Registered Master Electrician (RME)

AND

One (1) Registered Electrical Engineer (REE) or One (1) Professional Electrical Engineer (PEE)

THE PROPOSED NEW EE LAW

SECTION 42C: MINIMUM PERSONNEL REQUIRED

Watercrafts & Electric Locomotives

Watercrafts or electric locomotives operating with installed generating capacity up to the maximum size and voltage available for these units - shall have the following complement of authorized electrical engineering practitioners:

ABOVE 5,000 kVA

Two (2) Registered Master Electricians (RIE) and One (1) Registered Electrical Engineer (REE)

AND

One (1) Professional Electrical Engineer (PEE) as Head or Managing Engineer

THE PROPOSED NEW EE LAW

SECTION 43: MINIMUM PERSONNEL REQUIRED

Other Provisions for Complement of Electrical Practitioners

43 a: Provided, however, that; in all the aforementioned cases, to include the case of clusters of buildings or factories or facilities, Grid or DU substations or switching stations where physical presence & supervision of the minimum personnel required is impossible for reasons of geography, distance and/or density of electrical equipment; additional qualified personnel shall be employed to ensure safe operation & maintenance of the electrical system and to safeguard public welfare, lives and properties;

THE PROPOSED NEW EE LAW

SECTION 43: MINIMUM PERSONNEL REQUIRED

Other Provisions for Complement of Electrical Practitioners

43 b: Provided further, that; in the case of operation, maintenance or construction projects:

- 1) A Registered Master Electrician can technically supervise the activities of fellow registered master electricians or non-licensed personnel but assumes the full responsibilities & accountabilities as to the scope and limitations mandated in this Act,**
- 2) A Registered Electrical Engineer can technically supervise fellow REE's, RME's or non-licensed personnel but assumes the full responsibilities & accountabilities as to the scope and limitations mandated in this Act,**
- 3) A Professional Electrical Engineer can technically supervise fellow PEE's REE's, RME's or non-licensed personnel but assumes the full responsibilities & accountabilities as to the scope and limitations mandated in this Act.**

THE PROPOSED NEW EE LAW

SECTION 43: MINIMUM PERSONNEL REQUIRED

Other Provisions for Complement of Electrical Practitioners

43 C: This section shall not apply to any installation which has a connected capacity of less than 100 kVA and employs voltages of not more than two hundred fifty volts (250 V) and for installations that do not require resident personnel for their safe operation;

Provided, however, that; for every changes, alteration, revisions, addition, and 'as-built plans' of any parts of the electrical system, the plans and designs shall bear the signature and seal of an authorized professional electrical engineer;

Provided, further, that; a yearly assessment will be conducted and certified to be in a safe operating condition by a professional electrical engineer, or registered electrical engineer, or registered industrial or registered line electrician.

END OF
PRESENTATION

THANK YOU

