



Republic of the Philippines
House of Representatives
Quezon City, Metro Manila

NINETEENTH CONGRESS
First Regular Session

HOUSE BILL NO. 1037



Introduced by **Representative Francisco Jose F. Matugas II**

EXPLANATORY NOTE

On 13 May 2004, Congress passed R.A. 9297 or the Chemical Engineering Law of 2004. The law, however, has not been fully implemented due to loopholes in its provisions.

Despite the passage of the law, industrial facilities were erected and operated without the guidance and expertise of chemical engineers. This resulted in violations of environmental laws and exposed the public to unsafe practices in the operation of manufacturing processes. Very few companies hire licensed Chemical Engineers.

Moreover, the provisions of R.A. 9297 do not include the adoption of outcomes-based engineering educational parameters which highlight the attainment of skills and attributes of engineers under the Washington Accord. Engineers who graduate under Washington Accord certified programs, through the Philippine Technological Council, should be able to work as engineers in the member countries of the Washington Accord. This will improve the competence of Filipino chemical engineers, increase their mobility as engineers (not as technicians), and afford them more employment opportunities. There is also the need to identify the skills and attributes of Chemical engineering technologists and technicians.

This bill seeks to regulate engineering education, provide for the professional fields of specialization of Chemical Engineers, lay down the requirements for the operation of industrial facilities, and give recognition to qualifications and achievements. Its paramount interest is national development, public safety, and environmental sustainability.

The immediate passage of this bill is, therefore, earnestly sought.


FRANCISCO JOSE F. MATUGAS II
Surigao del Norte, First District
(Siargao Island)



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Introduced by **Representative Francisco Jose F. Matugas II**

**AN ACT PROVIDING FOR A COMPREHENSIVE
CHEMICAL ENGINEERING LAW AND REPEALING
FOR THAT PURPOSE REPUBLIC ACT NUMBER
NO. 9297, OTHERWISE KNOWN AS "THE
CHEMICAL ENGINEERING ACT OF 2004"**

*Be it enacted by the Senate and the House of Representatives of the Philippines in
Congress assembled:*

ARTICLE I

TITLE, STATEMENT OF POLICY, DEFINITION OF TERMS AND SCOPE OF
PRACTICE

SECTION 1. *Title.* - This Act shall be known as the "Comprehensive
Chemical Engineering Law of 2020."

SEC. 2. *Statement of Policy.* - Recognizing that the practice of chemical
engineering is vital to national development, it is hereby declared the policy of
the State to supervise, regulate and uphold the practice of chemical engineering
in the interest of public safety. It shall be the obligation of the State to upgrade
chemical engineering education to guarantee attainment of internationally
accepted skills and attributes of engineers, and to reserve the practice of such
profession to Filipino Chemical Engineers.

SEC. 3. *Definition of Terms.* -

(a) **AIPO** shall mean Accredited Integrated Professional Organization.

(b) **CHED** shall mean the Commission on Higher Education.

(c) **Certificate of Industrial Worthiness** shall refer to a document issued by a certifying professional chemical engineer after an annual industrial inspection and with favorable technical findings.

(d) **Certificate of Process Compliance** shall refer to a document issued by the Board of Chemical Engineering to industrial plants, private and government facilities and institutions engaged in the scope of practice of Chemical Engineering in the Philippines.

(e) **Certifying Registered Professional Chemical Engineer** shall refer to a registered professional chemical engineer who is jointly authorized by the LGUs Engineering Office and the local chapter of the Accredited Integrated Professional Organization ("AIPO") to conduct industrial inspection and to issue Certificate of Industrial Worthiness.

(f) **Chemical Engineering** shall refer to a discipline and profession in Engineering which covers application of knowledge and skills in mathematics, chemistry, physical, biological and molecular sciences, material and energy balances, chemical and biological reactor design and analysis, fluid flow, unit operations, thermodynamics and unit processes coupled with management, economics and technology in using multi-faceted and systems approach to problem analysis and solution creation for the optimal conversion of raw materials to finished products, process design and operation of industrial plant and related facilities giving high regard and consideration to public safety and environmental protection to improve the quality of life.

(g) **Chemical Engineering Laboratory** shall refer to a facility in an academic institution offering Chemical Engineering Programs that have instructional unit operations and process equipment.

(h) **Chemical Engineering Technologist (ChET)** shall refer to a holder of a Bachelor of Engineering Technology (Chemical Engineering), or one who has completed at least 54 units of the professional courses of a Bachelor of Science in Chemical Engineering program, duly registered by the PRC. A ChET

1 may be engaged in performing engineering functions in support of a Professional
2 Chemical Engineer's requirements. A ChET applies established engineering
3 methods, techniques, tools and resources within the engineering technology
4 domain.

5 (i) **Chemical Process Technician (CPTech)** shall refer to someone
6 who has completed at least 36 units of the professional courses of a Bachelor of
7 Engineering Technology (Chemical Engineering) program duly registered by the
8 PRC. The CPTech shall be skillfully qualified and certified to perform functions
9 related to process equipment monitoring and operation and can apply
10 established practices and procedures related to production in an industrial plant
11 or as laboratory technician for Chemical Engineering Laboratories in an
12 academic institution and in laboratories as defined in industrial plants.

13 (j) **Industrial Plant** shall mean any installation, building or structure
14 involved in the pilot or commercial production of consumer and industrial
15 products or utilized for industrial waste treatment processes; and which has
16 equipment and facilities wherein unit processes and operations are carried out.

17 (k) **Industrial Worthiness** shall refer to the quality of being a
18 technically-compliant, sustainable, safe, and environment-friendly industrial
19 plant operation. "Technically-compliant" means compliant with the
20 Implementing Rules and Regulations of this Act and other technical
21 requirements mandated by existing laws.

22 (l) **In-Process Laboratory** shall refer to a satellite installation that
23 industrial plants have in order to perform quality-related analysis or tests that
24 may be required in adjustment of Process Parameters used in commercial and
25 industrial production operations.

26 (m) **LGU** shall mean Local Government Unit.

27 (n) **Pilot Laboratory** shall refer to a miniature version of the
28 industrial plant where pilot trials are conducted for product development and
29 research purposes. Results of these studies are scaled up for commercial
30 production once approved.

(o) **Practice of Chemical Engineering** shall mean performance of activities within the scope of practice of the Chemical Engineering Profession and to affix to his/her name the letters "PChE".

(p) **PRC** shall mean the Professional Regulation Commission.

(q) **Process** shall mean a series of steps or actions taken in order to achieve a particular purpose.

(r) **Process and Operation Laboratory** shall refer to a facility inside an industrial plant wherein physical, chemical, biological, process, and statistical analysis are performed in relation to production operations. It shall also refer, but be not limited to, in-process laboratory, pilot laboratory, research and development laboratory, process simulation laboratory, and quality assurance laboratory.

(s) **Process Control** refers to the manipulation of a control device to maintain a process parameter within an acceptable deviation from an ideally required condition.

(t) **Process Design** shall mean preparation of conceptual plans bringing together all the chemical engineering components and service supply network design concept on flow of activities or operations in an industrial plant intended either for construction of new facilities or for modification of existing facilities.

(u) **Process Engineering** refers to the chemical or biochemical processes and equipment that are used to turn raw materials into an end product and is an essential part of the manufacturing industry.

(v) **Process Equipment** refers to equipment where unit process or unit operation takes place.

(w) **Process Parameters** refer to the current measured value of a particular part of process which is being monitored or controlled.

(x) **Process Simulation Laboratory** shall refer to a facility where process simulation and optimization and mathematical modelling are done using computer applications and software intended for industrial applications.

(y) **Professional Chemical Engineer (PChE)** shall refer to a holder of a B.S. Chemical Engineering degree, duly registered by the PRC, and who can

1 conceptualize, develop, design, manage, improve and apply safe, healthy, ethical
2 and economic ways of utilizing materials and energy in unit processes and
3 operations to achieve physical and chemical changes for the benefit of society and
4 environment through the application of knowledge in mathematics, chemistry,
5 physical, biological and molecular sciences, information technology, and other
6 natural, applied and social sciences, gained by study, research and practice.

7 (z) **Professional Chemical Engineering Subjects** shall mean
8 courses offered in higher educational institutions for the Bachelor of Science in
9 Chemical Engineering Program and other related Engineering programs
10 covering any of the following topics: chemical engineering thermodynamics,
11 chemical engineering mathematics, industrial chemistry, chemical engineering
12 calculations, chemical reaction engineering, physical and chemical principles,
13 industrial processes, momentum transfer, heat transfer, mass transfer,
14 separation processes, particle technology, industrial waste management and
15 control, process equipment and plant design, biochemical engineering and
16 bioengineering, biotechnology, food and drug manufacturing, packaging
17 technology, paints and coating technology, petrochemical engineering, energy
18 engineering, nuclear engineering, semiconductor technology, nanotechnology,
19 environmental management, and emerging technologies.

20 (aa) **Quality Assurance Laboratory** shall refer to a facility inside an
21 industrial plant wherein physical, chemical, biological, process and statistical
22 analysis are performed in relation to production operations.

23 (bb) **Research and Development Laboratory** shall refer to a facility
24 where research and development studies can be performed incorporating
25 physical, chemical, microbiological and nanotechnology tests, if needed.

26 (cc) **Resident Professional Chemical Engineer** shall refer to a
27 regular professional chemical engineer employed in an industrial plant, facility
28 or institution.

29 (dd) **Special Permit to Practice** shall refer to a document issued by
30 the Board of Chemical Engineering to qualified chemical engineers, Foreign or
31 Filipino, who have established themselves as experts in their field of practice.

1 allowing them to practice chemical engineering for a prescribed period as
2 determined by the Board.

3 (ee) **Systems Approach** shall refer to the concept of systematic
4 integration of inputs, outputs and other relevant factors in analyzing problems.

5 (ff) **Unit Operation** shall mean any activity or process intended to
6 achieve physical change which may include, but is not limited to, the storage and
7 handling of solid, gas and liquid materials, heat transfer, mass transfer, and the
8 separation or purification steps in an industrial plant.

9 (gg) **Unit Operation Laboratory** shall refer to any facility in an
10 industrial plant or academic institution that involves the testing, data gathering,
11 and analysis of process parameters and material properties connected with
12 physical transformation(s).

13 (hh) **Unit Process** shall refer to any activity or operation in a
14 manufacturing, industrial, water and waste treatment plant that involves
15 chemical transformation(s).

16 (ii) **Unit Process Laboratory** shall refer to any facility in an
17 industrial plant or academic institution that involves testing and data gathering
18 of process parameters and material properties related to the chemical
19 transformation from raw materials to in-process to finished products.

20 (jj) **Waste Treatment Facility** shall mean any installation, building
21 or structure engaged in the handling, treatment and disposal of solid, liquid or
22 gaseous wastes generated by the community either from residential or
23 institutional sources or from industrial processes.

24 (kk) **Waste Treatment Process** shall mean the operations involved in
25 achieving physical, chemical and biological change in collected wastes so as to
26 attain environmental compliance.

27 **SEC. 4. Scope of Practice. -**

28 A. The scope and nature of the practice of a Professional Chemical Engineer
29 shall embrace and consist of the following:

30 1. **Design and Innovation**

31 a) **Equipment Design** which includes conceptualization of equipment
32 features, material composition, dimensional requirements, functionality

assessment, fabrication requirements, calculations, drawings and supervision of fabrication conforming to established equipment codes.

b) Process Design which includes conceptualization of process flow, revision of processes, optimization of processes, setting of parameters, process control, sampling and testing, validation, verification, preparation of reports, feasibility studies, pilot trials, materials specification, efficiency calculations, conduct of trials, modification of parameters, process simulation and engineering calculations.

c) Industrial Plant Design which includes integration of facilities layout and location, process and equipment design, pilot trials, cost estimation, market study, material and energy management, financial management, personnel, energy, waste and environmental requirements.

d) Inventions or Innovations which include conceptualization, rationalization, design, pilot trials, fabrication of prototype, sampling and testing, patent application, product presentations, commercial scale manufacture and engineering calculations.

2. Process Engineering which includes thorough understanding of industrial processes and corresponding parameters, revision of processes, establishment of process parameters, in-process sampling and testing, engineering calculations, process instrumentation and control, process optimization, efficiency calculations, preparation of reports, preparation of recommendations, development of procedures and management presentations. Industrial processes shall include, but shall not be limited to: (a) glass manufacturing; (b) plastic manufacturing; (c) metal manufacturing; (d) packaging products manufacturing; (e) petroleum and petrochemical engineering; (f) food and beverage manufacturing; (g) sugar and sugarcane by-products manufacturing; (h) pharmaceutical and cosmetics manufacturing; (i) paint, coats and ink manufacturing; (j) rubber manufacturing; (k) non-metallic products manufacturing; (l) pulp and paper products manufacturing; (m) industrial chemical products manufacturing; (n) agricultural products manufacturing; (o) industrial gases production; (p) biofuels production; (q) textile manufacturing; (r)

1 mineral processing; (s) semiconductor equipment and products manufacturing;
2 and (t) currency manufacturing.

3 3. Process Safety Management which includes management of the integrity
4 of operating systems and processes, handling hazardous substances by applying
5 good design principles, engineering and operating practices, and prevention and
6 control of incidents that have the potential to release hazardous materials or
7 energy.

8 4. Biochemical Engineering which includes design and management of
9 biochemical production facilities, supervision of biochemical processes,
10 preparation of process parameters and specifications, sampling and testing, line
11 operations, and engineering calculations.

12 5. Operations Management which includes management of manpower,
13 materials, energy, technological and financial resources for implementation of
14 functions, activities and systems in relation to an industrial plant operation,
15 institutional and environmental facilities.

16 a) Process Management which includes supervision of an industrial
17 process or specific areas in it, monitoring of operational parameters, process
18 control, sampling and testing, preparation of manpower complement, scheduling
19 and planning of materials and production operations, preparation of reports,
20 management presentations, production logistics, disposal logistics and training
21 of personnel on operations.

22 b) Plant Management which includes holding a management-level
23 position in a company that applies the attributes and skills of a chemical
24 engineer. It covers planning, manpower deployment, budget preparation,
25 supervision of processes, quality assurance, preparation of reports, attendance to
26 conferences, participation in working groups formed locally by government
27 agencies, and participation in international working groups.

28 c) Project Management which includes feasibility study, planning,
29 manpower management, facilities management, materials management,
30 calculations, mobilization of project logistics, management presentations and
31 preparation of reports.

6. Education which includes holding positions in an academic institution offering engineering programs, preparation of outcome-based engineering courses, assessment of engineering programs and student outcomes, teaching of subjects or courses included in the curricula of different engineering programs, preparation and grading of examinations, preparation of reports, academic advising, student research advising, consultation activities, project implementation, attendance to relevant conferences on student learning, and participation in international and local university linkage activities.

7. Research and Development which includes conceptualization of products and processes, preparation of feasibility studies, optimization, simulation, engineering process equipment design, process and equipment innovation, materials substitution, conduct of trials, sampling and testing, engineering calculations, intellectual property patent applications, development of standards, preparation of reports and management presentation.

8. Environmental Engineering and Management

a) Environmental Impact Assessment which includes preparation of proposals, sampling and testing, engineering calculations, project presentation, planning, mobilization, preparation of EIA report and compliance monitoring.

b) Environmental Engineering which includes activities related to management of industrial, commercial and institutional wastes, cleaner production process modification, pollution control activities, consultations with LGUs on waste management, preparation of design plans for waste treatment facilities, operation and supervision of waste treatment facilities, preparation of reports, management presentations, sampling and testing, line operations, manpower planning and deployment, and conduct of training related to environmental concerns.

c) Waste Management and Pollution Control which includes identification, characterization and quantification of wastes, preparation of waste management proposals, conduct of training on waste management, design of waste treatment and control facilities, engineering calculations, monitoring and supervision of waste treatment facilities, sampling and testing, preparation

1 of reports, management presentations, and handling activities related to
2 environmental concerns.

3 d) Water Resource Management which includes design and
4 management of water products manufacturing facilities, supervision of water
5 treatment and production processes, preparation of process parameters and
6 specifications, sampling and testing, line operations, and engineering
7 calculations.

8 e) Climate Change Adaptation and Mitigation which includes
9 activities related to initiatives and measures to reduce the vulnerability of
10 natural and human systems against actual or expected climate change effects;
11 and reduction of the emissions of greenhouse gases, technological change and
12 substitution that reduce resource inputs and emissions per unit of output.

13 f) Disaster Risk Reduction and Management which includes activities
14 related to the systematic process of using administrative directives,
15 organizations, and operational skills and capacities to implement strategies,
16 policies and improved coping capacities in order to lessen the adverse impacts of
17 hazards and the possibility of disaster. Prospective disaster risk reduction and
18 management refers to risk reduction and management activities that address
19 and seek to avoid the development of new or increased disaster risks, especially
20 if risk reduction policies are not put in place.

21 9. Quality Assurance and Management

22 a) Quality Management which includes management of manpower,
23 materials, energy, technological and financial resources for implementation of
24 quality-related functions, activities and systems in relation to an industrial plant
25 operation and institutional facilities.

26 b) Quality Assurance which includes operation of the unit operation
27 laboratory and observation techniques applied in the process, establishment of
28 sampling frequency, in-process sampling and testing, analysis and interpretation
29 of results of tests for adjustment of process parameters, process and statistical
30 analysis, monitoring of process parameters, engineering calculations,
31 preparation of reports, management presentations, manpower planning,

operation of testing equipment and management of facilities intended for quality assurance of manufacturing plant operations.

10. Technical Services

a) Technical Sales and Services which include technical sales and service activities covering process equipment, raw materials, packaging materials, reagents, reactants, industrial chemicals, industrial gases, industrial and commercial products, online analytical instruments, analysis of technical data, calibration of equipment, importation and inbound logistics, supervision of transport and installation, processing of technical documents, preparation of sales reports, and inventory management.

b) Technical Consultation which includes provision of service to persons, entities, industries, government agencies, academic institutions and non-governmental organizations related to concerns or issues in any field of specialization offered by Professional Chemical Engineers.

11. Specialized Fields of Chemical Engineering

a) Advanced Device and Materials Testing which includes acquisition of relevant qualifications through graduate courses, experience or research. It covers design and management of advanced device and material products testing and manufacturing facilities, supervision of advanced device and material production processes, preparation of process parameters and specifications, sampling and testing, line operations, and engineering calculations.

b) Energy Engineering which includes acquisition of relevant qualifications through graduate courses, experience or research. It covers design and management of energy generation facilities, energy resource management, supervision of energy production processes, preparation of process parameters and specifications, sampling and testing, line operations, and engineering calculations.

c) Biological Engineering which includes acquisition of relevant qualifications through graduate courses, experience or research. It covers application of chemical engineering principles to analyze biological systems and to solve problems in the interfacing of such systems - plant, animal or microbial - with human-designed machines, structures, processes and instrumentation.

1 d) Biomedical Engineering which includes acquisition of relevant
2 qualifications through graduate courses in cooperation with medical programs,
3 experience or research. It covers knowledge of biology, medical science and
4 chemical engineering theory to develop problem-solving and new procedures and
5 technologies in the form of medical devices and equipment and computer systems
6 and software. The work of biomedical engineers includes everything from
7 creating new machines for diagnostic tests to developing artificial organs for
8 transplant.

9 e) Nuclear Engineering which includes acquisition of relevant
10 qualifications through graduate courses, experience or research. It covers design
11 and management of nuclear facilities, supervision of nuclear processes,
12 preparation of process parameters and specifications, sampling and testing, line
13 operations, and engineering calculations.

14 f) Molecular Engineering which includes acquisition of relevant
15 qualifications through graduate courses, experience or research. It covers design
16 and management of molecular engineering facilities, supervision of molecular
17 processes, preparation of process parameters and specifications, sampling and
18 testing, line operations, and engineering calculations.

19 g) Nano Engineering which includes acquisition of relevant
20 qualifications through graduate courses, experience or research. It covers design
21 and management of nano-engineering, facilities supervision of nano-level
22 production processes, preparation of process parameters and specifications,
23 sampling and testing, line operations, and engineering calculations.

24 h) Forensic Investigation which includes acquisition of relevant
25 qualifications through graduate courses, experience or research. It covers
26 analytical investigation, sampling and testing of evidences related to crimes,
27 crime scenes, terrorist situations, and other incidents that require the technical
28 expertise of engineers, preparation of technical reports and acting as technical
29 expert in court when necessary.

30 i) Emerging Technologies which include the sole authority to provide
31 services as defined in this Act and to sign and seal plans, drawings, permit

1 applications, specifications, reports and other technical documents prepared by
2 himself/herself and/or under his direct supervision.

3 B. A Chemical Engineering Technologist (ChET) applies established
4 engineering methods, techniques, tools and resources within the technology
5 domain. A ChET provides technical support to Professional Chemical Engineers
6 as needed in an industrial plant.

7 C. A Chemical Process Technician (CPTech) performs functions related to
8 manufacturing equipment monitoring and operation and applies established
9 practices and procedures which may require performance of duties related to
10 production or as laboratory technician for Chemical Engineering Laboratories in
11 an academic institution and in laboratories as defined in industrial plants.

12 *SEC. 5. Educational Requirements and Qualifications. -*

13 A. Professional Chemical Engineers (PChE) must have the following
14 qualifications in order to engage in professional practice:

- 15 1) Must be a holder of a Bachelor of Science in Chemical Engineering
16 (BSChE) degree from a CHED-Registered Higher Educational
17 Institution;
- 18 2) Must have passed the Chemical Engineering Licensure
19 Examination administered by the Board of Chemical Engineering of
20 the PRC and issued the Professional License Identification Card
21 and Certificate of Registration;
- 22 3) Must have obtained a valid Professional Tax Receipt;
- 23 4) Must have procured an Official Dry Seal as prescribed by this law
24 and duly issued in coordination with the AIPO; and
- 25 5) Must be of good moral character and a law-abiding citizen of the
26 Philippines.

27 B. A Chemical Engineering Technologists (ChET) must have the following
28 qualifications in order to engage in professional practice:

- 29 1) Must be a holder of a Bachelor of Engineering Technology
30 (Chemical Engineering) (BET-ChE) degree or must have completed
31 at least 54 units of the professional courses of a Bachelor of Science

- 1 in Chemical Engineering program from a CHED Compliant Higher
2 Educational Institution:
- 3 2) Must have passed the Chemical Engineering Technologist
4 Licensure Examination administered by the Board of Chemical
5 Engineering of the PRC and must have been issued the Professional
6 License Identification Card and Certificate of Registration;
- 7 3) Must have obtained a valid Professional Tax Receipt; and
- 8 4) Must be of good moral character and a law-abiding citizen of the
9 Philippines.
- 10 C. Chemical Process Technicians (CPTech) must have the following
11 qualifications in order to engage in professional practice:
- 12 1) Must have completed at least 36 units of the professional courses of
13 a Bachelor of Engineering Technology (Chemical Engineering) from
14 a CHED Compliant Higher Educational Institution;
- 15 2) Must have passed the Chemical Process Technician Licensure
16 Examination administered by the Board of Chemical Engineering of
17 the PRC and must have been issued the Professional License
18 Identification Card and Certificate of Registration;
- 19 3) Must have obtained a valid Professional Tax Receipt; and
- 20 4) Must be of good moral character and a law-abiding citizen of the
21 Philippines.

22
23 ARTICLE II
24 THE PROFESSIONAL REGULATORY BOARD FOR CHEMICAL ENGINEERS
25
26

27 SEC. 6. *Selection and Composition of the Members of the Board.* - The
28 Board of Chemical Engineering, herein referred to as the Board, under the
29 administrative control and supervision of the PRC, shall be composed of a
30 Chairman and two (2) members appointed by the President of the Philippines as
31 taken from the nominees recommended by the AIPO of Chemical Engineers and
32 short-listed by the Commission.

1 The AIPO of Chemical Engineers shall recommend five (5) nominees for
2 every vacant position, six (6) months prior to end of the term of the concerned
3 member. Recommendation and selection of short-listed nominees shall be done
4 for one position at a time.

5 SEC. 7. *Powers and Duties of the Board.* - The Board shall have the
6 following powers and duties:

7 1) Supervise, regulate and uphold the practice of the chemical
8 engineering profession in the Philippines in accordance with the provisions of
9 this Act;

10 2) Determine the requirements and evaluate the qualifications of the
11 applicants for registration and renewal of license of Professional Chemical
12 Engineer (PChE), Chemical Engineering Technologist (ChET), and Chemical
13 Process Technician (CPTech);

14 3) Prescribe the subjects in the licensure examination aligned with the
15 current minimum B.S. Ch.E. and BET-ChE curriculum standards set by CHED,
16 determine the syllabi of the subjects and their relative weights, construct the
17 test questions in the examination, score and rate the examination papers, and
18 submit the examination results to the PRC;

19 4) Issue, together with the PRC, Certificates of Registration and
20 Professional Identification Cards to applicants who have passed the licensure
21 examinations for professional chemical engineers, chemical engineering
22 technologists and chemical process technicians;

23 5) Issue, together with the PRC, licensure examination exemptions,
24 Certificates of Registration and Professional Identification Cards to applicants
25 who have graduated from Internationally Accredited B.S. Ch.E. and BET-Ch.E.
26 programs;

27 6) Issue special permits to persons admitted to the practice of the
28 profession;

29 7) Award Certificates of Recognition for advanced studies and
30 researches and accomplishments in the chemical engineering profession that
31 contribute to its enrichment;

1 8) Oversee the conduct of the Continuing Professional Development
2 programs for Professional Chemical Engineers (PChE), Chemical Engineering
3 Technologist (ChET), and Chemical Process Technician (CPTech);

4 9) Conduct on-site inspection, submit an inspection report to the PRC,
5 and monitor compliance of industrial plants, facilities, institutions and other
6 entities engaged in the scope of practice of Chemical Engineering and seek the
7 assistance of the AIPO in order to carry out these functions;

8 10) Inquire into the conditions affecting the practice of Professional
9 Chemical Engineer (PChE), Chemical Engineering Technologist (ChET), and
10 Chemical Process Technician (CPTech) and adopt measures for the enhancement
11 and maintenance of a high professional, ethical and technical standard.
12 Pursuant thereto, the Board may inspect establishments where chemical
13 engineers practice their profession in order to determine and enforce compliance
14 with the provisions of this Act;

15 11) Issue Certificates of Compliance to Industrial Plants, facilities and
16 institutions engaged in the scope of practice of Chemical Engineering pursuant
17 to the provisions of this Act;

18 12) In coordination with CHED, inspect the facilities, faculty,
19 equipment and other aspects directly related to the chemical engineering
20 program of educational institutions and submit a monitoring report to the PRC;

21 13) Adopt a Code of Ethics and a Code of Technical Standards for the
22 practice of chemical engineering;

23 14) Investigate, in accordance with the rules on administrative
24 investigation promulgated by the PRC, violations of this Act and its
25 implementing rules and regulations, the Code of Ethics and the Code of
26 Technical Standards for chemical engineers, administrative policies, orders and
27 issuances promulgated by the Board;

28 15) Issue *subpoena ad testificandum* and *subpoena duces tecum* to
29 secure
30 the attendance of witnesses or the production of documents in connection with
31 any administrative case before the Board;

1 16) Hear and decide administrative cases filed against chemical
2 engineers and firms employing chemical engineers. The hearing shall be
3 presided by the Chairman or a Member of the Board with the assistance of an
4 Attorney of the PRC. Any decision shall be concurred in by at least a majority of
5 the Board. Decisions of the Board may be appealed to the PRC within fifteen (15)
6 days from notice. Otherwise, such decisions shall become final and executory:

7 17) Administer oaths in connection with the performance of its
8 functions;

9 18) Adopt an official seal and prescribe the seal of the chemical
10 engineering profession;

11 19) Submit an annual report on the proceedings and accomplishments
12 during the year and/or recommendations of the Board to the PRC thirty (30) days
13 after the close of each calendar year; and furnish copies of the same annual
14 report upon the request of stakeholders:

15 20) Prosecute or institute criminal action against any violator of this
16 Act

17 and/or the rules and regulations of the Board;

18 21) Prescribe guidelines and criteria on the Continuing Professional
19 Development (CPD) program for chemical engineers in consultation with the
20 integrated and accredited chemical engineering organizations;

21 22) In case of exigency of services, the Board may deputize other
22 qualified

23 professional chemical engineers duly recommended by the AIPO to serve some of
24 their functions, with due compensation to the appointed deputies;

25 23) Adopt the implementing rules and regulations of this Act; and

26 24) Perform such other functions as may be necessary in order to
27 implement the provisions of this Act.

28 SEC. 8. *Qualifications of the Board Chairman and Members.* - The
29 Chairman and Members of the Board shall be, at the time of their appointment:

30 a) A natural-born Filipino citizen and resident of the Philippines;

b) At least a holder of a bachelor's degree in chemical engineering as conferred by an engineering school of good standing, recognized and accredited by the Government;

c) A professional chemical engineer who has been in active practice for at least ten (10) years;

d) With graduate studies and/or equivalent relevant professional qualifications;

e) A member of good standing of the AIPO;

f) Must be willing to learn and adopt the CHED Curricular Guidelines for the BS Chemical Engineering and BET-ChE programs in the preparation of questions appropriate for the applicants to the Licensure Examinations for chemical engineering practice;

g) Must not, for a period of three (3) consecutive years prior to appointment, be a member of the faculty of any university, college, school or institution conferring an academic degree necessary for admission to the practice of chemical engineering, nor have any pecuniary interest in or administrative supervision over any such institutions of learning;

h) Must not, for a period of three (3) consecutive years prior to appointment, be connected with a review center or with any group or association where review classes or lectures in preparation for the licensure examination are offered or conducted at the time of appointment; and

i) Has never been convicted of any offense involving moral turpitude.

SEC. 9. *Term of Office.* - The Chairman and the Members of the Board shall have a term of three (3) years only, with a maximum of one (1) reappointment. No member of the Board shall serve for more than two (2) regular terms. Vacancies shall be filled for the unexpired term only. The Chairman and Members shall qualify by taking the proper oath prior to assumption of office. The incumbent Chairman and Members shall be allowed to serve for the remainder of their term until a new Board shall have been constituted.

SEC. 10. *Secretary of the Board.* - The Board shall have a Secretary, appointed by the PRC, who shall record the minutes of its meetings and perform

1 such other functions as the Board may require. The Commission shall provide for
2 compensation of the Secretary.

3 SEC. 11. *Removal/Suspension of the Chairman and Members.* - The
4 President, upon recommendation of the Commission, may remove any member of
5 the Board on the following grounds: (a) conflict of interest; (b) neglect of duty; (c)
6 incompetence; (d) commission or tolerance of irregularities in the licensure
7 examination; (e) malpractice, unprofessional or unethical conduct; (f) violation of
8 this Act or the Code of Ethics for Chemical Engineers; and (g) conviction by final
9 judgment of a crime involving moral turpitude. A member shall only be
10 suspended after due notice and hearing where his right to be heard, to defend
11 himself and to be assisted by counsel shall be respected.

12 SEC. 12. *Compensation of the Board.* - The Chairman and Members of the
13 Board shall receive such compensation or honorarium as may be prescribed by
14 the rules and regulations of the Commission.

15 SEC. 13. *Annual Report.* - The Secretary shall prepare an annual report
16 for the consideration and approval of the Board. The Board shall submit an
17 annual report to the PRC after the close of each fiscal year giving a detailed
18 account of the proceedings of the Board during the year and embodying such
19 recommendations to the PRC as the Board may desire to make. The AIPO may
20 request for a copy of the annual report.

21 ARTICLE III
22 LICENSURE EXAMINATION, REGISTRATION AND EXEMPTION
23
24

25 SEC. 14. *Examination Requirement.* - All applicants for registration for
26 the practice of chemical engineering shall be required to pass the licensure
27 examination prescribed herein.

28 SEC. 15. *Holding of Examination.* - Examination of candidates desiring to
29 practice chemical engineering shall be given twice each calendar year on the
30 dates and venues prescribed by the Board. Such examination shall be conducted
31 by the Board.

32 SEC. 16. *Scope of Examination.* - The licensure examination shall cover,
33 but shall not be limited to, the following subjects:

1 a) Professional Chemical Engineer. - Physical and Chemical
2 Principles, General Engineering, and Chemical Engineering: *Provided*, That, the
3 relative weight of Chemical Engineering shall not be less than forty per centum
4 (40%).

5 b) Chemical Engineering Technologist. - Physical and Chemical
6 Principles, General Engineering, and Chemical Engineering (excluding
7 biochemical engineering, separation processes, chemical reactor design,
8 equipment and plant design): *Provided*, That, the relative weight of Chemical
9 Engineering shall not be less than forty per centum (40%).

10 c) Chemical Process Technician. - Analytical and Organic Chemistry,
11 General Engineering, and Chemical Engineering topics relevant to chemical
12 process technician practice.

13 SEC. 17. *Qualifications for Professional Chemical Engineer Examinations.*

14 - Any person applying for admission must have the following qualifications:

- 15 a) Must be a citizen of the Philippines;
16 b) Must be of good moral character;
17 c) Must be a graduate of a school, institute, college or university
18 recognized by the Government and has been conferred the degree of Bachelor of
19 Science in Chemical Engineering; and
20 d) Must not have been convicted of an offense involving moral
21 turpitude by a court of competent jurisdiction.

22 SEC. 18. *Qualifications for Chemical Engineering Technologist*
23 *Examinations.* - Any person applying for admission must have the following
24 qualifications:

- 25 a) Must be a citizen of the Philippines;
26 b) Must be of good moral character;
27 c) Must be a graduate of Bachelor of Engineering Technology -
28 Chemical Engineering program or has completed at least 54 units of the
29 professional courses of a Bachelor of Science program in Chemical Engineering
30 according to CHED guidelines; and
31 d) Must not have been convicted of an offense involving moral
32 turpitude by a court of competent jurisdiction.

1 SEC. 19. *Qualifications for Chemical Process Technician Examinations.* -

2 Any person applying for admission must have the following qualifications:

- 3 a) Must be a citizen of the Philippines;
- 4 b) Must be of good moral character;
- 5 c) Must have completed at least 30 units of a Bachelor of Engineering
- 6 Technology- Chemical Engineering program according to CHED guidelines; and
- 7 d) Must not have been convicted of an offense involving moral
- 8 turpitude by a court of competent jurisdiction.

9 SEC. 20. *Examination Fees.* - Every applicant permitted to take the

10 chemical engineering examination shall pay such fees as may be prescribed by

11 the Board before said applicant is allowed to take the examination.

12 SEC. 21. *Report of Rating.* - The Board shall complete the correction of

13 examination papers within twenty (20) days from the last day of the

14 examination. The PRC shall report the rating of examinees not more than thirty

15 (30) days after the Board has completed the correction of examination papers.

16 SEC. 22. *Exemption from Licensure Examination.* - All applicants who

17 have graduated from Internationally Accredited B.S. Ch.E. and Technology

18 programs are entitled to apply for exemption from licensure examination,

19 provided that all requirements are met according to the provisions of this Act.

20 This shall be construed to mean that all qualified applicants may or may not

21 apply, and that all applicants for exemption shall still submit additional school

22 portfolio requirements and shall undergo screening. Only those passing the

23 screening process shall be exempted and properly registered.

24 SEC. 23. *Issuance of Certificate of Registration and Professional*

25 *Identification Card.* - The PRC shall, on recommendation of the Board, enter in

26 the Roster of Chemical Engineers, Chemical Process and Engineering

27 Technologists, Manufacturing Process Technician, and issue a Certificate of

28 Registration and Professional Identification Card to each person who obtained a

29 general average of no less than seventy per centum (70%) and a rating of no less

30 than fifty per centum (50%) in any examination subject and applicants who were

31 screened to be qualified for exemption. Every Certificate of Registration shall

32 state the full name of the registrant and his registration number, and shall be

1 signed by the Chairman and Members of the Board and the PRC and
2 authenticated by the official seal of the PRC indicating that the person named
3 therein is entitled to the practice of the profession with all the privileges
4 appurtenant thereto. The said Certificate of Registration shall remain in full
5 force and effect until suspended or revoked in accordance with this Act.

6 A professional identification card bearing the signature, number, date of
7 issuance, expiry date, duly signed by the Chairman of the PRC shall likewise be
8 issued to every registrant who has paid the prescribed fee.

9 *SEC. 24. Renewal of Professional License.* - The professional license issued
10 to a Professional Chemical Engineer and Chemical Process and Engineering
11 Technologist shall be valid for three (3) years from its issuance and shall be
12 renewed every after three (3) years on the birth month of the Professional
13 Chemical Engineer and Chemical Process and Engineering Technologist upon
14 presentation or submission of the required Continuing Professional Development
15 credit units earned and payment of prescribed fees.

16 *SEC. 25. Seal of Professional Chemical Engineer.* - Each chemical engineer
17 shall, upon registration, obtain a seal as prescribed by the Board bearing the
18 professional's name, registration number and the legend "Professional Chemical
19 Engineer." Plans, specifications, designs, reports and other professional
20 documents prepared by or executed under the supervision of, and issued by the
21 professional shall be stamped on every sheet with said seal, indicating therein
22 his/her current Professional Tax Receipt (PTR) number, date and place of
23 payment, and current membership number in the AIPO, when filed with
24 Government authorities or when submitted or used professionally.

25 *SEC. 26. Fees for Registration.* - Every person issued a Certificate of
26 Registration as a professional chemical engineer shall pay to the PRC such fees
27 as the PRC may prescribe.

28 *SEC. 27. Exemptions from Registration and Issuance of Special Permit to*
29 *Practice.* - Registration shall not be required of the following persons upon proper
30 application for exemption with the Board:

31 a) Chemical engineers, recognized as experts in their specific fields of
32 chemical engineering, called in by the Republic of the Philippines for

1 consultation or for a specific design, installation or project: *Provided, That their*
2 *practice shall be confined to such work:*

3 b) Chemical engineers who have distinguished themselves in their
4 respective fields of specialization, contracted as professors or lecturers on
5 chemical engineering subjects by Philippine schools, or colleges, institutes or
6 universities on a direct hire or exchange basis, subject to verification of
7 credentials by the Board; and

8 c) Chemical engineers who have distinguished themselves in their
9 respective fields of specialization, contracted as consultants, technology
10 providers or specialists on chemical engineering processes by Philippine
11 industrial firms on a direct hire basis, subject to verification of credentials by the
12 Board.

13 SEC. 28. *Suspension or Revocation of Certificate of Registration and*
14 *Cancellation of Special Permit to Practice.* - Any of the following shall be
15 sufficient ground for the suspension or revocation of a Certificate of Registration
16 and cancellation of Special Permit to Practice:

17 a) Any act of incompetence, negligence, or illegal practice of chemical
18 engineering resulting to damage to property and environment, injury or loss of
19 lives;

20 b) Acts inimical to the chemical engineering profession;

21 c) Gross immorality or commission of any act involving moral
22 turpitude;

23 d) Violation of this Act, the rules and regulations, other policies of the
24 Board and the Code of Ethics.

25 Complaints against professional chemical engineers and firms employing
26 chemical engineers may be filed by any person or by the Board *motu proprio*.
27 Complaints shall be in writing and sworn to by the persons executing them.
28 Complaints shall be filed with the Secretary of the Board: *Provided, That the*
29 *action of the Board shall be subject to appeal to the PRC within fifteen (15) days*
30 *from notice, whose decision on the matter shall be final.*

31 SEC. 29. *Reissuance of Revoked Certificate of Registration and Special*
32 *Permit to Practice and Replacement of Lost Certificates.* - The Board may, for

1 reasons it may deem sufficient and upon proper petition, reissue revoked
2 Certificates of Registration and Special Permits to Practice.

3 A new Certificate of Registration and Special Permit to Practice may be
4 issued to replace a lost, destroyed or mutilated Certificate or Permit, subject to
5 the rules and regulations of the Board, and upon payment of the appropriate fees
6 to the PRC.

7
8 ARTICLE IV
9 PRACTICE OF CHEMICAL ENGINEERING
10

11
12 SEC. 30. *Vested Rights, Automatic Registration of Chemical Engineers.* -
13 All chemical engineers who are registered at the time this Act takes effect shall
14 automatically be recognized as Professional Chemical Engineers.

15 SEC. 31. *Who May Practice Chemical Engineering.* - Except as may be
16 provided in this Act, only professional chemical engineers may practice chemical
17 engineering. No firm, partnership, corporation or association may be licensed
18 and registered as such for the practice of chemical engineering, but duly licensed
19 and registered chemical engineers may form partnerships among themselves or
20 with other licensed and registered engineers and architects and use the title
21 "Chemical Engineers," "Engineers and Architects" in their partnership name.

22 SEC. 32. *Prohibitions in the Practice of Chemical Engineering.* - No person
23 shall practice chemical engineering or render chemical engineering service,
24 without a valid certificate of registration, a valid professional identification card,
25 or a special permit to practice.

26 Any person who shall commit the following acts shall be guilty of
27 misdemeanor:

28 a) Practice chemical engineering or render chemical engineering
29 services, or pass himself off or advertise himself as a chemical engineer without a
30 valid certificate of registration and/or a valid professional identification card or
31 when such has been suspended or revoked;

32 b) Attempt to use as his own the certificate or seal of another person or
33 impersonate any professional chemical engineer;

1 c) Attempt to use a revoked or suspended certificate of registration or
2 an expired professional license;

3 d) Sign a document involving design, plan, technical specification and
4 the like on behalf of a professional chemical engineer; or

5 e) Furnish the Board or PRC any false information or document in
6 order to secure a Certificate of Registration or renewal of Professional
7 Identification Card.

8 SEC. 33. *Roster of Chemical Engineers.* - The PRC shall keep a roster of all
9 professional chemical engineers, chemical process and engineering technologists
10 and manufacturing process technicians, stating their names, registration
11 numbers, and places of business. The PRC shall regularly update such roster and
12 make it available to all interested parties upon formal written request free of
13 charge.

14 SEC. 34. *Submission of Designs and Specifications for Government*
15 *Approval.* - Any proposal, design, specification, working drawings or plan for
16 processes and equipment in an industrial plant or any part thereof submitted to
17 any government agency, national or local, including government-owned or
18 controlled corporations, shall not be processed or approved, nor shall such plant
19 be issued any permit, license, franchise, authorization or certification, unless
20 such proposal, design, specification, working drawing or plan is signed by a
21 professional chemical engineer, with his/her seal and registration number affixed
22 thereto.

23 SEC. 35. *Hazard Allowance, Health and Accident Insurance, and Legal*
24 *Assistance.* - Professional chemical engineers, chemical process and engineering
25 technologists and manufacturing process technicians who are exposed to
26 workplace and process hazards as part of their regular responsibilities are
27 entitled to commensurate hazard allowance, medical benefits, and insurance
28 coverage. These should be indicated as separate items in the compensation
29 package and cannot be incorporated in the basic salary.

30 Legal assistance shall be provided by the employer to professional
31 chemical engineers, chemical process and engineering technologists and

1 manufacturing process technicians who face civil or criminal suits arising from
2 work done in good faith.

3 SEC. 36. *National Career Progression and Specialization.* - There shall be
4 an institutionalized national chemical engineering career progression and
5 specialization program to be formulated by the Board in consultation with the
6 AIPO, Civil Service Commission, and concerned government agencies: *Provided,*
7 That any chemical engineer, before being allowed to work in specialty areas, to
8 perform beyond generalist function or have specific specialties, must finish the
9 formal education or training towards specialization and possess recognized
10 practice competencies.

11 SEC. 37. *Code of Technical Standards.* - The existing Code of Technical
12 Standards for the Practice of Chemical Engineering shall be transformed into the
13 Philippine Chemical Engineering Standards (PChES) and shall serve as Code of
14 Technical Standards of all professional chemical engineers in the practice of
15 their profession. The Board, in collaboration with the AIPO of chemical
16 engineers, the Department of Science and Technology, Department of
17 Environment and Natural Resources, Department of Trade and Industry,
18 Department of Public Works and Highways, Department of Agriculture,
19 Department of Interior and Local Government, Department of Health,
20 Department of Energy, Department of Labor and Employment, and other
21 concerned agencies and private organizations, shall develop new standards
22 under the PChES.

23 SEC. 38. *Foreign Reciprocity.* - No foreign chemical engineer shall be
24 granted any of the rights or privileges under this Act unless the country of which
25 he is a subject or citizen grants the same or similar rights or privileges to
26 Filipino chemical engineers.

27 SEC. 39. *Act Not Affecting Other Professions.* - This Act shall not be
28 construed to affect or prevent the practice of any other lawfully recognized
29 profession.

30 SEC. 40. *Indication of Registration/Professional License Number and*
31 *Professional Tax Receipt Payment.* - The professional chemical engineer and
32 chemical process and engineering technologist shall be required to indicate his

1 Certificate of Registration, Professional Identification Card number, date of
2 issuance and the duration of validity, including the Professional Tax Receipt
3 (PTR), in the documents he signs, uses, or issues in connection with the practice
4 of his profession.

5 SEC. 41. *Membership in the Accredited Integrated Professional*
6 *Organization (AIPO).* - There shall be an integrated national organization of
7 chemical engineers duly accredited by the Board and the PRC. A chemical
8 engineer duly registered with the Board and the PRC shall automatically become
9 a member of such organization subject to the provisions on membership of the
10 current constitution and by-laws of the AIPO for chemical engineers. The
11 member shall receive the benefits appurtenant thereto upon payment of the
12 required fees and dues.

13
14 ARTICLE V
15 INDUSTRIAL PLANTS CLASSIFICATION AND RELATED ISSUES
16

17
18 SEC. 42. *Classification of Industrial Plants.* - Industrial plants shall be
19 classified as follows:

20 a) *Micro-Scale Industrial Plants* are plants operating with less than
21 ten (10) production personnel with only one shift and not operating any steam
22 boiler;

23 b) *Small-Scale Industrial Plants* are plants operating with ten (10),
24 but not more than fifty (50), production personnel with one or more shifts. They
25 must be operating a combined capacity of not more than twenty (20) horsepower
26 of all unit operations and unit processes, and/or are operating steam boiler/s with
27 a combined capacity of less than twenty (20) horsepower. Micro-scale industrial
28 plants operating more than one shift shall be classified as small-scale industrial
29 plants.

30 c) *Medium-Scale Industrial Plants* are plants operating with fifty (50),
31 but not more than two hundred (200), production personnel with one or more
32 shifts. They must be operating a combined capacity of more than twenty (20)
33 horsepower, but not more than two hundred (200) horsepower, of all unit

1 operations and unit processes and/or operating steam boiler/s with a combined
2 capacity of twenty (20) to two hundred (200) horsepower.

3 d) *Large-Scale Industrial Plants* are plants operating with more than
4 two hundred (200) production personnel with one or more shifts. They must be
5 operating a combined capacity of more than two hundred (200) horsepower of all
6 unit operations and unit processes and/or operating steam boiler/s with a
7 combined capacity of more than two hundred (200) horsepower.

8 Despite the foregoing, establishments operating with more than one (1)
9 industrial plant in different areas shall be classified in accordance with their
10 capacity or description per industrial plant.

11 The upgrading or downgrading of the type of industrial plant shall only be
12 done once a year after the industrial inspection.

13 SEC. 43. *Pollution Control & Abatement and Waste Treatment.* - The
14 pollution control and abatement and waste treatment facilities of any
15 establishment shall be managed, operated, or supervised by a registered
16 professional chemical engineer. The overall waste management of any
17 establishment shall be under the supervision of a registered professional
18 chemical engineer.

19 The plan for pollution control and abatement devices and facilities, such
20 as wastewater treatment facility, air pollution control device and treatment,
21 disposal for toxic and hazardous, and other related technologies and devices
22 which are part of building permit requirements, shall be signed by a registered
23 professional chemical engineer with his or her seal affixed. LGUs shall
24 implement this in addition to other building permit requirements.

25 SEC. 44. *Process and Operation Laboratory.* - Process and operation
26 laboratories shall be managed, operated, or supervised by a registered
27 professional chemical engineer.

28 SEC. 45. *Technical Guidelines.* - Within thirty (30) days from the approval
29 of this Act, the Board of Chemical Engineering shall enact technical guidelines to
30 implement any technical details therein effectively.

31
32 ARTICLE VI

CERTIFICATE OF PROCESS COMPLIANCE

SEC. 46. *Certificate of Process Compliance.* - The Board, after inspection, shall issue a Certificate of Process Compliance, valid for three (3) years, to industrial plants, private and government facilities and institutions engaged in the practice of Chemical Engineering in the Philippines: *Provided*, That such practice is carried out only by professional chemical engineers holding valid Certificate of Registration and Professional Identification Card issued by the Board. In addition, said industrial plants, private and government facilities and institutions shall be compliant with all related regulatory requirements, Risk Management Plan and the Philippine Chemical Engineering Standards. The management or administration of such industrial plants, private and government facilities and institutions, shall be held liable for violations of this Act.

SEC. 47. *Risk Management Plan.* - All industrial plants shall establish a Risk Management Plan focusing on workplace and process safety to prevent exposures and reduce risks and to minimize or eliminate materials and process toxicity. The plan shall include established operational and process control measures on how materials are handled, workers are protected, and potential risks are reduced.

SEC. 48. *Personnel Required in Industrial Plant, Facility and Institution.* - In the interest of public safety and environmental protection, professional chemical engineers shall be designated to supervise and address workplace and process safety requirements in industrial plant operations. Regardless of the size of the industrial plant, all process equipment and plant design shall be approved by a professional chemical engineer.

All micro, small, medium and large-scale industrial plants, facilities and institutions engaged in manufacturing operations, which include laboratory facilities such as pilot, in-process, process simulation, research and development, quality assurance, and chemical engineering laboratories, shall have at least the following complement of resident professional chemical engineers:

1 a) *Micro and Small-Scale Industrial Plants* shall have one (1)
2 professional chemical engineer: *Provided*, That every plant in this category
3 operating in more than one (1) shift every twenty-four (24) hours shall have, in
4 addition to the minimum personnel herein required, one (1) professional
5 chemical engineer in-charge of each and every additional shift.

6 b) *Medium-Scale Industrial Plants* shall have four (4) professional
7 chemical engineers to handle process engineering, operations, quality assurance
8 and environmental management: *Provided*, That every plant in this category
9 operating in more than one (1) shift every twenty-four (24) hours shall have, in
10 addition to the minimum personnel herein required, two (2) professional
11 chemical engineers in- charge of each and every additional shift.

12 c) *Large-Scale Industrial Plants* shall have ten (10) professional
13 chemical engineers to handle unit operations and processes, process engineering,
14 operations, quality assurance and environmental management: *Provided*, That
15 every plant in this category operating in more than one (1) shift every twenty-
16 four (24) hours shall have, in addition to the minimum personnel herein
17 required, at least five (5) professional chemical engineers in-charge of each and
18 every additional shift. If deemed necessary, professional chemical engineers shall
19 be added over and above the minimum requirement as determined by the Board
20 or by the plant management.

21 d) *For academic and research institutions*, only professional chemical
22 engineers shall handle professional chemical engineering courses. Research
23 related chemical engineering processes shall be under the supervision of
24 professional chemical engineers. Support staff for chemical engineering
25 laboratories shall be at least a Chemical Engineering Technologist.

26 e) *For design and consultancy firms*, only professional chemical
27 engineers shall prepare process equipment and plant design specifications for
28 industrial plants, facilities and institutions.

29 SEC. 49. *Process Compliance.* - Industrial process shall be reviewed,
30 certified, signed, and sealed by a Professional Chemical Engineer.

- 1 n) Manpower Requirements for Chemical Engineers and other related
2 Production Personnel;
3 o) Environmental Protection; and
4 p) Other Related Issues.

5 The industrial inspection shall be conducted periodically (more than once
6 a
7 year) if:

- 8 a) There are hazardous and toxic substances or materials involved in
9 the operation;
10 b) Personnel in the plant are engaged in hazardous work or services;
11 and
12 c) Waste streams of the operations shall threaten the health and
13 safety of the personnel.

14 The certifying registered professional chemical engineer shall be required
15 to sign a non-disclosure agreement and shall respect intellectual property rights
16 related to the inspection.

17 SEC. 53. *Industrial Worthiness.* - After an annual industrial inspection
18 and with favorable technical findings, the Certifying Registered Professional
19 Chemical Engineer shall issue a Certificate of Industrial Worthiness to the
20 concerned industrial plant/s, affixing his or her signature and seal. If the
21 establishment is engaging two or more industrial plants in different areas, a
22 separate certificate shall be issued for each industrial plant.

23 A chemical engineer employed or engaged by the establishment shall not
24 be
25 allowed to inspect and certify the same establishment.

26 No establishment shall be issued a business permit by the LGU concerned
27 without the Certificate of Industrial Worthiness.

28 SEC. 54. *Application Fee.* - An establishment, which is starting to engage
29 in industrial plant operation, shall pay an application fee to the appropriate
30 LGU as follows:

- 31 a) Micro-Scale Industrial Plant: Php 5,000
32 b) Small-Scale Industrial Plant: Php 10,000

1 c) Medium-Scale Industrial Plant: Php 30,000

2 d) Large-Scale Industrial Plant: Php 50,000

3 The LGU's Engineering Office shall only issue a permit to operate an
4 industrial plant after the issuance of the Certificate on Industrial Worthiness.

5 The application fee shall be adjusted every three years by the LGU based
6 on price index adjustments.

7 *SEC. 55. Professional Fee of Certifying Registered Professional Chemical*
8 *Engineer.* - A minimum professional fee shall be paid by the establishment to the
9 certifying registered professional chemical engineer after industrial inspection
10 on a per industrial plant basis:

11 a) Micro-Scale Industrial Plant: Php 2,000

12 b) Small-Scale Industrial Plant: Php 3,000

13 c) Medium-Scale Industrial Plant: Php 5,000

14 d) Large-Scale Industrial Plant: Php 10,000

15 The professional fee shall be adjusted every three years by the LGU based
16 on price index adjustments.

17 *SEC. 56. Industrial Worthiness Review.* - Within fifteen (15) days after
18 industrial inspection and issuance of unfavorable technical findings, any
19 establishment may submit a request to the LGU's Engineering Office for
20 industrial worthiness review. Within five (5) days after the receipt of the review
21 request, the Engineering Office shall convene the LGU Industrial Review Panel.

22 A review fee, prescribed by the Engineering Office, shall be paid by the
23 establishment to the LGU. The total review fees collected shall be utilized for the
24 honoraria of the Review Panel Chairperson and members.

25 *SEC. 57. LGU Industrial Review Panel.* - The LGU Industrial Review
26 Panel shall be composed of three (3) registered professional chemical engineers
27 who are selected by lottery from the list of all certifying registered professional
28 chemical engineers. The most senior shall be the Chairperson of the Panel. The
29 Panel shall conduct industrial re-inspection and documentary review within ten
30 (10) days from its formation and may issue a Certificate of Industrial Worthiness
31 after its favorable technical review findings. A new Review Panel shall be
32 constituted each time there is a request for industrial worthiness review.

1 SEC. 58. *Administrative Appeal.* - The technical review findings of the
2 LGU Industrial Review Panel may be appealed to the Board of Chemical
3 Engineering within fifteen (15) days after notice by the concerned party of the
4 unfavorable technical review findings. The Board shall conduct industrial re-
5 inspection and documentary review and may issue a Certificate of Industrial
6 Worthiness after its favorable technical review findings. The findings of the
7 Board shall be final.

8
9 ARTICLE VIII
10 CHEMICAL ENGINEERING EDUCATION AND CONTINUING
11 PROFESSIONAL DEVELOPMENT
12
13

14 SEC. 59. *Curriculum Development and Updating.* - The CHED, in
15 consultation with the Board and the industry stakeholders, shall develop and
16 continuously update the Chemical Engineering Curriculum in accordance with
17 the required competencies on the practice of the profession prescribed under this
18 Act, in order to align with international standards of chemical engineering
19 education and practice, and to be responsive to the industry requirements.

20 SEC. 60. *Continuing Professional Development (CPD).* - Continuing
21 Professional Development is an integral part in the practice of the chemical
22 engineering profession and is considered relevant to sustained competency
23 enhancement, capacity building and renewal of professional license. A CPD
24 Program shall be prescribed and promulgated by the Board in consultation with
25 the AIPO of Chemical Engineers, concerned government agencies, and
26 stakeholders. The Board shall prescribe the guidelines in the implementation of
27 the CPD programs for chemical engineers. It shall maintain the CPD Council
28 which shall be composed of a Chairperson coming from the Board, a member
29 from the AIPO of chemical engineers and a member from the academe. The CPD
30 for professional chemical engineers is hereby made mandatory for the practice of
31 the profession. The CPD credit units earned by the professional shall be required
32 in the renewal of professional license and accreditation systems for advance level
33 of practice and other international accreditations. The CPD credit units earned
34 by a chemical engineer shall likewise be applied as the training requirement for

1 promotion of positions in government agencies and private firms and for teaching
2 positions in academic institutions, and shall be accumulated subject credit
3 transfer under the Pathways and Equivalencies of the Philippine Qualification
4 Framework.

5
6
7 ARTICLE IX
8 TRANSITORY PROVISIONS
9

10
11 SEC. 61. *Vested Rights.* - All chemical engineers who are registered under
12 Republic Act 9297, at the time of the effectivity of this Act, shall automatically be
13 considered Professional Chemical Engineers and shall hold the same registration
14 number. The validity and period of their existing professional license shall
15 continue in force until its date of expiry.

16 All persons occupying positions of Chemical Process and Engineering
17 Technologists and Manufacturing Process Technicians for a minimum of three
18 (3) years, at the time of effectivity of this Act, shall be automatically qualified for
19 registration.

20 SEC. 62. *Securing Certificate of Process Compliance.* - There shall be a five
21 (5) year grace period for industrial plants, facilities and institutions to apply and
22 secure Certificates of Process Compliance.

23
24 ARTICLE X
25 GENERAL PROVISIONS
26

27
28 SEC. 63. *Code of Ethics.* - The Board shall adopt a Code of Ethics which
29 shall be promulgated by the AIPO.

30 SEC. 64. *Penal Clause.* - (a) Any person who shall violate any of the
31 provisions of this Act shall be guilty of misdemeanor and shall, upon conviction,
32 be sentenced to a fine of not less than One Hundred Thousand Pesos
33 (P100,000.00) nor more than One Million Pesos (P1,000,000.00), or imprisonment
34 for a period of not less than six (6) months but not more than five (5) years, or
35 both at the discretion of the court. This shall include any person who:

1 a) Practices chemical engineering or renders chemical engineering
2 services, or passes himself/herself off or advertises himself/herself as a chemical
3 engineer without a valid certificate of registration and/or valid professional
4 identification card or when such has been suspended or revoked;

5 b) Attempts to use as his/her own, the certificate or seal of another
6 person, or impersonates any professional chemical engineer;

7 c) Attempts to use a revoked or suspended certificate of registration or
8 an expired professional license;

9 d) Signs a document involving design, plan, technical specification and
10 the like on behalf of a professional chemical engineer; or

11 e) Furnishes the Board or Commission any false information or
12 document in order to secure a Certificate of Registration or renewal of
13 Professional Identification Card.

14 (b) The responsible officer, employee or director of any industrial plant,
15 facility or institution who shall violate any of the provisions of this Act shall be
16 guilty of misdemeanor and shall, upon conviction, be sentenced to a fine of not
17 less than Three hundred thousand pesos (P300,000.00) but not more than Three
18 million pesos (P3,000,000.00) or imprisonment for a period of not less than six (6)
19 months but not more than one (1) year, or both at the discretion of the court.

20 SEC. 65. *Enforcement Assistance to the Board.* - The Board shall be
21 assisted by the PRC in carrying out the provisions of this Act and its
22 implementing rules and regulations and other policies. The lawyers of the PRC
23 shall act as prosecutors against illegal practitioners and other violators of this
24 Act and its rules. The duly constituted authorities of the government shall
25 likewise assist the Board and the PRC in enforcing the provisions of this Act and
26 its rules.

27 SEC. 66. *Implementing Rules and Regulations.* - Subject to the approval of
28 the PRC, the Board shall adopt and promulgate such rules and regulations
29 including Code of Ethics for Chemical Engineers and Philippine Chemical
30 Engineering Standards for the Practice of Chemical Engineering to carry out the
31 provisions of this Act, which shall be effective after sixty (60) days following their
32 publication in the Official Gazette or in a major newspaper of general circulation.

1 SEC. 67. *Separability Clause.* - If any section of this Act shall be declared
2 unconstitutional or invalid, such shall not invalidate any other section of this
3 Act.

4 SEC. 68. *Repealing Clause.* - Republic Act No. 9297 is hereby repealed and
5 all other laws, decrees, orders, rules and regulations, ordinances, and other
6 issuances or parts thereof which are inconsistent with this Act are hereby
7 superseded, repealed or amended accordingly.

8 SEC. 69. *Effectivity.* - This Act shall take effect fifteen (15) days following
9 its publication in the Official Gazette or in any major newspaper of general
10 circulation.

11 *Approved,*