HOUSE OF REPRESENTATIVES
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Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City, Metro Manila

Eighteenth Congress
First Regular Session

HOUSE BILL NO. 2970

Introduced by: **Cong. Manuel T. Sagarbarria**

EXPLANATORY NOTE

On May 13, 2014, Republic Act No. 9297 was passed, otherwise known as the Chemical Engineering Law on 2014. The law repealed Republic Act No. 318 which was passed into Law on June 19, 1948. It took almost 56 years to the day that the old Chemical Engineering Law was repealed in order to declare the policy of the state regarding the practice of chemical engineering in the Philippines, to upgrade chemical engineering education to ensure that Filipino chemical engineers are at par with the best in the world.

However, right after the passage of RA No. 9297 in 2004, the ASEAN Mutual Recognition Arrangement (MRA) on Engineering Services was signed on December 9, 2005 in Kuala Lumpur by the Governments of Brunei Darussalam, Cambodia, Indonesia, PDR Lao, Malaysia, Philippines, Singapore, Thailand and Vietnam. The integration of 10 ASEAN member states into a single Market and Production base established the ASEAN Economic Community in 2015 wherein there will be flow of goods, free flow of capital, free flow of investment and free flow of professional services. The ASEAN framework of services (AFAS) has the following objectives namely: 1) To facilitate mobility of engineering services of professionals; 2) To exchange information in order to promote adoption of best practices on standards and qualification.

In view of this development, aside from other Mutual Recognition Arrangements (MRAs) with other international economic groupings or individual countries in Asia, Europe , U.S.A., North and South America and Africa that may be established in the years to come, the bill seeks the revisions of some provisions in RA No. 9297 in order for the professional law to align with there MRAs to ensure that Flilipino chemical engineers remain competitive with the best not only in ASEAN but the rest of the world.

Therefore, it is respectfully requested that Congress enact the amendments in Republic Act. No. 9297 known as the Chemical engineering Law of 2004.

MANUEL T. SAGARBARRIA
Representatives
2nd District Negros Oriental

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City, Metro Manila

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Introduced by: **Cong. Manuel T. Sagarbarria**

AN ACT AMENDING CERTAIN PROVISIONS OF REPUBLIC ACT NO. 9297, OTHERWISE KNOWN AS "THE CHEMICAL ENGINEERING LAW OF 2004"

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

ARTICLE 1

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

SECTION 1- Section 2 of RA No. 9297, otherwise known as the Chemical Engineering Law of 2004 (RA No. 9297 for brevity), is hereby amended to read as follows:

SECTION 2. Statement of the Policy- it is hereby declared the policy of the State to supervise and regulate the practice of the Chemical Engineering vital to national development, upgrade chemical engineering education in order to ensure that our chemical engineers are at par with the best in the world, and to reserve the practice of such profession to Filipino citizens [**and foreign nationals who have complied with all the legal requirements for the practice of the profession.]**

SECTION 2- Section 3, Paragraph 1 of RA No. 9297 is hereby amended to read as follows:

Section 3. Definition of Terms. – **[Chemical Engineering is the profession in which a knowledge of mathematics, chemistry, and other natural sciences such as physics and biology gained by study, experience and practice is applied with judgement to develop economic and environmentally safe ways employing unit processes, unit operations, physical and chemical principles in using materials and energy in a sustainable manner.]** Practice of chemical engineering shall mean the rendering or offering of professional chemical engineering service for a fee, salary, reward or compensation, paid to

him or through another person, or even without such reward or compensation. The term shall be synonymous with the term "rendering chemical engineering service".

Section 3, Sub-Paragraph (d) of RA No. 9297 is hereby amended to read as follows:

(d)Professional chemical engineering subjects **[aside from applied mathematics, physics, chemistry and biology]** shall mean any of the following and similar chemical engineering topics: chemical engineering thermodynamics; chemical engineering calculations; physical and chemical principles; industrial processes; momentum transfer; heat transfer; mass transfer; industrial wastes management and control; process equipment and plant design; biochemical engineering and bio-engineering; **[and nuclear engineering, molecular chemical engineering, nano-engineering; environmental chemical engineering; and materials engineering, waste water and water supply engineering; renewable energy sourcing and engineering and other process industries involving a chemical change or atom engineering.]**

(i) **Nuclear Engineering is the application of the breakdown or fission, as well as, fusion of atomic nuclei and the application of other sub-atomic physics, based on nuclear physics. Includes in particular the interaction and maintenance of systems and components such as nuclear reactor, nuclear power plants, nuclear weapons, nuclear medicine, nuclear safety and nuclear waste disposal.**

(ii) **Molecular Chemical Engineering is a precision form of chemical engineering which requires the natural manipulation of molecules with the use of devices such as scanning tunneling microscope that includes protein engineering, the creation of protein.**

(iii) **Nano Engineering which is synonymous to nanotechnology is the manipulation of matter with at least one dimension at 1 to 100 nanometers. This includes nanomaterials, fullerenes, nanoparticles, applications in nanomedicine, nanotoxicology, molecular self-assembly, nanoelectronics, nanometrology, and molecular nanotechnology.**

(iv) **Environmental Engineering includes the integration of science and engineering principles for the improvement of the natural environment, provide healthy water, air and land for human habitation. It includes waste water management, air pollution control, recycling, waste disposal, radiation protection, industrial hygiene, environmental sustainability, public health issues and knowledge of environmental laws, rules and regulations.**

(v) **Material Engineering or Materials Science is an interdisciplinary field involving the properties of materials**

and its application to various areas of science and engineering in investigating the relationship between the composition and the structure of materials at atomic or molecular scales and their macroscopic properties.

(vi) **Waste Water and Water Supply Engineering is a branch of engineering involved in the development of sources of supply, transmission, distribution and treatment of water for industry, residential, irrigation and other purposes. It includes management of water supplies for human and environmental health, collection of waste through centralized sewer systems, delivery to treatment plants to remove pollutants, design, installation and operation of treatment plants.**

(vii) **Renewable Energy Sourcing and Engineering include biomass heat and power generation, fuel sourcing and supply, geothermal, hydropower, solar, wind and other renewable sources.**

SECTION 3, Sub-Paragraph (e) of RA No. 9297 is hereby amended to read as follows:

(e)Chemical engineer shall mean a person duly registered and a holder of a valid Certificate of Registration and Professional Identification Card issued by the Board of Chemical Engineering and the Professional Regulation Commission. **[Moreover, a Chemical Engineer principally works in the industry, on research, design and engineering, managing installations and directing manufacturing operations, process control, solutions provider, environmental engineering and biochemical/biological engineering, planning, academe, and in marketing and distribution channels. Basically, the chemical engineer works in industry where unit processes and unit operations are involved to convert inorganic and organic materials as well as metallic ores into usable intermediate raw materials and commercial products. In addition, the chemical engineer designs environmental, biochemical/biological, biometaphysical, nano-engineering and catharsis processes.]**

SECTION 3 – Section 4, Sub-Paragraphs (1), (2), (3), (4), (5), (6), (7), (8), (9) and (10) of RA No. 9297 are hereby amended to read as follows:

SECTION 4. Scope of Practice. – Professional chemical engineering service shall embrace the following similar services in relation to industrial plants:

(1) Consultation requiring chemical engineering knowledge, skill and proficiency. **[Professional service involves the improvement and enhancing of production processes, systems development,**

quality and efficiency improvement and application of mature and emerging technologies.]

(2) Investigation [involves the application of science such as forensics and chemical engineering principles in investigating materials, products, structures, components, equipment and systems that fail to attain design capacities, efficiency and safety requirements.]

(3) Estimation and/or valuation [involve the application of value and cost engineering for the organized approach in providing the necessary functions at the least cost and the identification and elimination of unnecessary costs without affecting the quality of installations, products and service, cost control, cost forecasting and risk analysis.]

(4) Planning [involves the systematic approach in working out the sequence of activities that are required to complete a project and linking them all together using available resources to attain the best possible effect.]

(5) Preparation of feasibility studies [involves the evaluation and analysis of the potential success of a proposed project based on extensive investigation and research to support the process of decision making of the project proponent.]

(6) Designing [involves the process with general validity and applicability of a wide variety of engineering situations by creation of systems, devices, and processes useful to and sought by proponents to accomplish the desired goal with the use of latest design tools like ACAD, Sketch-up and other similar software.]

(7) Preparation of specifications [is the setting of explicit technical standard requirements to be satisfied by a material, design, product or service. The specifications may be set by government agencies, standards organizations (ASTM, ISO, CEN, AIChE, AOAC, USP, codex, etc.), trade associations, corporations and other referenced by a contract or procurement document.]

(8) Supervision of installation [involves the inspection of materials, equipment supplied to project site, carry out quality control to reference with the technical specifications, completeness against packing lists, monitoring of scheduled tasks and activities, making adjustments when necessary to ensure completion of installation on schedule and within budget.]

(9) Operation, including quality management, but excluding chemical analysis and operation of the chemical laboratory, [involves the operation and quality management of industrial plants producing process materials, food and nutrition products, chemicals, fuel/lubricants and additives, synthetic products, packaging products, explosives, agricultural chemicals, personal and

health care products including power/energy generation and other operation involve the application of chemical engineering principles; but excluding chemical analysis and operation of the chemical laboratory;] and

(10) The teaching, lecturing and reviewing of professional chemical engineering subjects in the curriculum of the Bachelor of Science in Chemical Engineering degree, **[that may be amended from time to time by the Commission on Higher Education (CHED) in coordination with the Academe and the Board of Chemical Engineering]**, or a subject in the Chemical Engineering licensure examination given in any school, college, university or any other educational institution shall be considered a professional chemical engineering service.

SECTION 4 – Article III of Section 16, Paragraph (d) of RA No. 9297 is hereby amended to read as follows:

(d) That he/she has not been convicted of an offense involving moral turpitude **[or obliquity]** by a court of competent jurisdiction.

SECTION 5 – The following provisions should be added to Article III under the title LICENSURE EXAMINATION AND REGISTRATION of RA No. 9297, as SECTION 25 SECTION 26 and SECTION 27, and shall read as follows:

[Section 25. Renewal of Professional License. – The professional license issued to a Chemical Engineer shall be valid for THREE (3) years from its issuance and, unless the holder thereof is exempt from CPE/CPD requirements, shall be renewed every after THREE (3) years on the birth month of the Chemical Engineer upon presentation/ submission of the required Continuing Professional Education/Development credit units earned and payment of prescribed fees as verified and validated by the accredited professional organization.]

[Section 26. Categories. – Certificates of Registration for the practice of chemical engineering shall be of TWO (2) categories and in order of rank as follows:

(a) Professional Chemical Engineer;

(b) Chemical Engineer]

[Section 27. Qualifications of Applicants for Professional Chemical Engineer.- Any applicant to the professional chemical engineering license must, at the time of filing of his application, establish to the satisfaction of the Board that:

(a) He/She is a citizen of the Philippines;

(b) He/She must not have been convicted of a crime involving moral turpitude or obliquity by a court of competent jurisdiction;

(c) He/She has a valid Certificate of Registration and he is a registered Chemical Engineer and a holder of a valid professional license;

(d) He/She has graduated from an engineering school or college of recognized standing, after completing an approved course in chemical engineering;

(e) He/she has a specific record of at least TWELVE (12) years of active chemical engineering practice, reckoned from the time he/she registered a chemical engineering practice; and

(f) He/She is competent to practice, as attested to by at least TWO (2) professional chemical engineers.]

SECTION 6 – The following sections found on Article IV under the title PRACTICE OF CHEMICAL ENGINEERING of RA No. 9297, are amended by changing their numerical designation as follows:

A. [Section 25 shall be designated as SECTION 28

B. Section 26 shall be designated as SECTION 29

C. Section 27 shall be designated as SECTION 30

D. Section 28 shall be designated as SECTION 31

E. Section 29 shall be designated as SECTION 32

F. Section 30 shall be designated as SECTION 33

G. Section 31 shall be designated as SECTION 34

H. Section 32 shall be designated as SECTION 35

I. Section 33 shall be designated as SECTION 36

J. Section 34 shall be designated as SECTION 37

K. Section 35 shall be designated as SECTION 38

L. Section 36 shall be designated as SECTION 39

M. Section 37 shall be designated as SECTION 40

N. Section 38 shall be designated as SECTION 41

O. Section 39 shall be designated as SECTION 42]

APPROVED.