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Ministerial Regulation

Prescribing Other Activities Constituting the Objectives of the Council of Engineers

B.E. 2560 (2017)

By virtue of Section 5, paragraph one, and Section 7 (8) of the Engineers Act, B.E. 2542 (1999), the Minister of Interior hereby issues this Ministerial Regulation:

The Council of Engineers shall have the following objectives in undertaking other activities under Section 7 (8) as follows:

(1) to promote, support, and provide for the certification of knowledge and professional competence in the practice of the engineering profession and the regulated engineering profession;

(2) to promote, support, and provide for the registration of engineering professionals and the regulated engineering professional pursuant to the ASEAN Mutual Recognition Arrangement on Engineering Services, as well as other international agreements relating to cross-border engineering services.

Given on 20 April B.E. 2560 (2017)
General Anupong Paochinda
Minister of Interior

Note: The grounds for the promulgation of this Ministerial Regulation are that it is expedient to prescribe that the Council of Engineers shall have the objectives of promote, support, and provide for the certification of knowledge and professional competence in the practice of the engineering profession and the regulated engineering profession, as well as the registration of engineering professionals and the regulated engineering professionals, in order that Thai engineers may benefit from the ASEAN Mutual Recognition Arrangement on Engineering Services and other international agreements relating to cross-border engineering services. It is, therefore, necessary to issue this Ministerial Regulation.

Ministerial Regulation

Prescribing Fields of the Engineering Profession and the Regulated Engineering Profession, B.E. 2565 (2022)

By virtue of the definitions of "Engineering Profession" and "Regulated Engineering Profession" in Section 4, and Section 5, paragraph one, of the Engineers Act, B.E. 2542 (1999), the Minister of Interior hereby issues this Ministerial Regulation as follows:

Clause 1 This Ministerial Regulation shall come into force upon the expiration of one hundred and eighty days from the date of its publication in the Government Gazette.

Clause 2 The following Ministerial Regulations shall be repealed:

(1) Ministerial Regulation Prescribing Fields of the Engineering Profession and the Regulated Engineering Profession, B.E. 2550 (2007);

(2) Ministerial Regulation Prescribing Fields of the Engineering Profession and the Regulated Engineering Profession (No. 2), B.E. 2560 (2017).

Clause 3 The following fields of engineering shall be prescribed as engineering Profession:

(1) Agricultural Engineering

(2) Computer Engineering

(3) Chemical Engineering

(4) Coastal Engineering

(5) Biomedical Engineering

(6) Naval Architecture and Marine Engineering

(7) Building Maintenance Engineering

(8) Fire Protection Engineering

(9) Petroleum Engineering

(10) Energy Engineering

(11) Mechatronics Engineering

(12) Automotive Engineering

(13) Railway Systems Engineering

(14) Information Engineering

(15) Surveying Engineering

(16) Environmental Engineering

(17) Water Resources Engineering

(18) Aeronautical Engineering

(19) Food Engineering

Clause 4 Engineering professions in the following fields shall be prescribed as regulated engineering professions:

(1) Civil Engineering

(2) Mining Engineering

(3) Mechanical Engineering

(4) Electrical Engineering

(5) Industrial Engineering

(6) Environmental Engineering

(7) Chemical Engineering

Provided that only works of the types and sizes prescribed in this Ministerial Regulation for each field of engineering profession shall constituted regulated engineering professions.

Clause 5 The works in each field of Regulated Engineering Profession are as follows:

(1) Consulting Work means the provision of advice, inspection and diagnosis, or certification of works.

(2) Project Planning Work means the study, evaluation of feasible alternatives, or planning of a project.

(3) Design and Calculation Work means the application of engineering principles and expertise to develop details for construction, erection, manufacture, or the layout of plants and machinery, together with calculations presented in the form of drawings, specifications, or estimates.

(4) Construction or Production Control Work means the supervision or control of construction, erection, manufacture, installation, repair, modification, demolition, or relocation of works to ensure compliance with drawings, specifications, and engineering professional principles.

(5) Examination and Review Work means research, analysis, testing, and the collection of data and statistics for use as criteria, or in connection with the examination and diagnosis of works, technical review, or the assessment of process safety management or environmental management.

(6) Operational Supervision Work means the supervision of the use and maintenance of works, whether individual components or systems, to ensure compliance with drawings, specifications, and engineering professional principles.

Clause 6 The types and sizes of works in the Regulated Engineering Profession in the field of Civil Engineering are as follows:

(1) Buildings having a height of three storeys or more; buildings in which the structure at any storey has a height of four meters or more; buildings having a distance of five meters or more between the center lines of columns or other supports; or buildings having any part projecting two meters or more beyond the outer edge of its support.

(2) Public buildings under the law on building control, of all sizes.

(3) Buildings of the types prescribed in the ministerial regulation concerning the load-bearing capacity, resistance, and durability of buildings and of the ground supporting buildings in resisting earthquake vibrations.

(4) Buildings having an aggregate area of 150 square meters or more, situated on sloping land having a gradient of 35 degrees or more.

(5) Warehouses, silos, cold storage facilities, granaries, or distribution centers having a capacity of 100 cubic meters or more.

(6) Grandstands having an area of 1,000 square meters or more, or any part of the grandstand floor having a height of 2.50 meters or more above the base level or the ground on which it is constructed.

(7) Piers or shipyards for vessels having a displacement tonnage of 50 metric tons or more.

(8) Dams, weirs, or water-control irrigation structures having a height of 1.50 meters or more.

(9) Water conveyance tunnels, water pipes, drain pipes, or drainage channels having an internal diameter of 0.80 meter or more, or a cross-sectional area of 0.50 square meter or more, or a water flow rate of 1 cubic meter per second or more.

(10) Irrigation systems or drainage systems covering an area of 500 rai or more per project.

(11) Alignment and level-setting works for railway systems, public transport routes, highways, public ways, or airport runway, taxiway, or apron, of all sizes.

(12) Works for strengthening structures or foundations, of all sizes.

(13) Works for lifting or relocating buildings of all types having a total building weight of 50 metric tons or more, or an area of 150 square meters or more.

(14) Extension, demolition, or alteration works for buildings of all types that cause the building to deviate from the approved plans or specifications by more than five percent of the building area, or increase the load on any part of the building structure by more than ten percent.

(15) Earth excavation works having a depth of more than three meters from ground level, or an excavation pit opening area of more than 10,000 square meters.

(16) Earth filling works where the area of a contiguous earth mound exceeds 2,000 square meters and the height of the earth mound is two meters or more, measured from the level of adjacent land belonging to another owner.

(17) Structures in the nature of towers, stacks, or religious monuments, such as water towers, cable car towers, monuments, Buddha images, or stupas, having a height of 6 meters or more.

(18) Structures for the transmission, reception, or installation of telecommunications equipment or electric poles, having a height of 25 meters or more measured from the base level of the structure, or having a weight of 200 kilograms or more.

(19) Bridge structures of all types in which the distance between the center lines of columns or piers in any span is 10 meters or more.

(20) Underground structures, tunnels, temporary underground structures, retaining structures, flood-protection embankments, irrigation canals, or drainage canals, having a height or depth of 1.50 meters or more.

(21) Structures for railway systems, public transport routes, highways, public ways, or airport runway, taxiway, or apron, of all sizes.

(22) Structures for storing fluids, such as water tanks, oil tanks, or swimming pools, having a capacity of 50 cubic meters or more.

(23) Load-bearing structures in the form of beams, columns, floors, walls, panels, or stairs, composed of precast concrete or precast prestressed concrete, of all sizes.

(24) Pipe-supporting structures for pipes having a diameter of 0.30 meter or more, or where the aggregate cross-sectional area of all pipes is 0.10 square meter or more.

(25) Structures supporting or installing movable amusement rides having a speed of 6 kilometers per hour or more, or having a height of 2.50 meters or more from the ground level at which the ride is installed to the highest level reached by riders, or having any water-related part with a water depth of 0.80 meter or more.

(26) Structures of tower cranes or derrick cranes, of all sizes.

(27) Signs or structures erected for attaching or installing signs, having an area of 50 square meters or more and a height above ground level of 15 meters or more; or signs or structures erected for attaching or installing signs, having an area of 25 square meters or more, which are installed on a roof, deck, or canopy, or attached to any part of a building.

(28) Piles having a length of 6 meters or more, or having a safe load capacity of 3 metric tons or more.

(29) Scaffolds or shoring having a height of 4 meters or more.

(30) Concrete formwork and supporting structures for concrete formwork for:

(a) columns, panels, or walls having a height of 4 meters or more;

(b) beams or slabs in which the distance between the center lines of columns or other supports is 5 meters or more, or having a height of 3 meters or more;

(c) load-bearing supports having a height of 3 meters or more

Clause 7 The types and sizes of works in the Regulated Engineering Profession in the field of Mining Engineering are as follows:

(1) Mining works include:

(a) mining operations under the law on minerals, of all types and scales;

(b) tunneling or the creation of openings in rock or ore, or the creation of cavities through mineral dissolution, of all scales;

(c) engineering works involving the use of explosives, of all scaless;

(d) mineral dressing or the separation of various materials from used products through mineral dressing processes using mechanical power, of all scaless;

(e) the inspection and assessment of the quantity of minerals extracted through mining, of all scaless;

(f) feasibility studies for mining investment or the improvement of the quality of minerals or materials through mineral dressing processes, of all types and scales;

(g) rehabilitation of areas following mining operations or mine closure within mining areas, of all types and scales;

(h) control of soil or rock failure within mining areas, of all types and scales.

(2) Metallurgical works include:

(a) the separation and preparation of materials for the extraction of metals from waste, used household products, and industrial waste residues through mineral dressing and metallurgical processes involving hazardous chemicals;

(b) mineral dressing or the separation of various materials from used products by mineral dressing processes, of all scaless;

(c) the smelting of iron ore or the production of steel by metallurgical processes, of all scaless;

(d) the smelting of other ores, or the extraction of metals, alloying metals, or metal compounds from ores, slag, scrap metal, materials, or other substances, including metal refining through metallurgical processes involving hazardous chemicals;

(e) the production of finished or semi-finished metal products through forming processes, such as melting, casting, fabrication, welding, powder metallurgy, or material addition processes, employing thirty or more workers;

(f) improvement of metal properties through heat treatment, surface finishing, or metal coating processes, employing thirty or more workers;

(g) analysis of physical, mechanical, and chemical properties, non-destructive testing, material characterization, or analysis of metal failure, degradation, corrosion, and the prevention of damage through metallurgical processes.

Clause 8 The types and sizes of works in the Regulated Engineering Profession in the field of Mechanical Engineering are as follows:

(1) Consulting Work in relation to the works under (2), (3), (4), (5), or (6), of all types and scales.

(2) Project Planning Work:

(a) machinery, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. having a power rating of not less than 100 kilowatts per project;
3. being used in a building having a floor area of not less than 2,000 square meters;
4. being used in a building capable of accommodating not less than two hundred persons.

(b) steam generators or other vapor generators, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. using heat of not less than 20 million megajoules per year;
3. having a heat input of not less than 1 megawatt per project;
4. being used in a building having a floor area of not less than 2,000 square meters;
5. being used in a building capable of accommodating not less than two hundred persons.

(c) pressure vessels, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. being used in a building having a floor area of not less than 2,000 square meters;
3. being used in a building capable of accommodating not less than two hundred persons.

(d) industrial furnaces, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. using heat of not less than 20 million megajoules per year;
3. having a heat input of not less than 1 megawatt per project;
4. being used in a building having a floor area of not less than 2,000 square meters;
5. being used in a building capable of accommodating not less than two hundred persons.

(e) air-conditioning, refrigerating, or heating equipment, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. having a cooling or heating capacity of not less than 350 kilowatts per project.

(f) fluid systems in pressure or vacuum piping, where any one of the following applies:

1. having a value of not less than thirty million Baht per project;
2. having a fluid power of not less than 100 kilowatts;
3. being used in a building having a floor area of not less than 2,000 square meters;
4. being used in a building capable of accommodating not less than two hundred persons.

(g) fire extinguishing systems or fire protection systems, where any one of the following applies:

1. having an aggregate value of not less than three million Baht per project;

2. covering an area of not less than 2,000 square meters.

(h) energy management, where any one of the following applies:

1. having electricity consumption of not less than 1 megawatt;

2. having total thermal energy consumption of not less than 20 million megajoules per year.

(3) Design and Calculation Work, where any one of the following applies:

(a) machinery having a power rating of not less than 7.50 kilowatts per machine;

(b) steam generators or other vapor generators, of any scale;

(c) pressure vessels, of any scale;

(d) industrial furnaces having a heat input of not less than 40 kilowatts;

(e) air-conditioning, refrigerating, or heating equipment, where any one of the following applies:

1. being designed for the manufacture of equipment having a cooling or heating capacity of not less than 25 kilowatts per unit;

2. being designed for assembly into a system having a cooling or heating capacity of not less than 70 kilowatts.

(f) fluid systems in pressure or vacuum piping, where any one of the following applies:

1. having a fluid gauge pressure in the piping of not less than 500 kilopascals;

2. having a gauge vacuum lower than minus 50 kilopascals.

(g) fire extinguishing systems or fire protection systems covering an area of not less than 2,000 square meters;

(h) energy management, where any one of the following applies:

1. having electricity consumption of not less than 1 megawatt;

2. having total thermal energy consumption of not less than 20 million megajoules per year.

(4) Construction or Production Control Work:

(a) machinery having a power rating of not less than 20 kilowatts per machine;

(b) steam generators or other vapor generators, where any one of the following applies:

1. having a gauge pressure of not less than 500 kilopascals;

2. having a steam or other vapor production rate of not less than 500 kilograms per hour per machine.

(c) pressure vessels, where any one of the following applies:

1. having a gauge pressure of not less than 500 kilopascals;

2. having a volume of not less than 1 cubic meter per unit.

(d) industrial furnaces having a heat input of not less than 400 kilowatts;

(e) air-conditioning, refrigerating, or heating equipment having a cooling or heating capacity of not less than 70 kilowatts per unit, or an aggregate cooling or heating capacity of not less than 200 kilowatts;

(f) fluid systems in pressure or vacuum piping, where any one of the following applies:

1. having a fluid gauge pressure in the piping of not less than 500 kilopascals;

2. having a gauge vacuum lower than minus 50 kilopascals.

(g) fire extinguishing systems or fire protection systems covering an area of not less than 2,000 square meters;

(5) Examination and Review Work:

(a) the works under (2), (3), (4), or (6), of all types and scales;

(b) passenger lifts or freight lifts capable of carrying persons, of all scales;

(c) fluid systems in pressure piping for fuel gas in vehicles, of all scales.

(6) Operational Supervision Work:

(a) machinery having an aggregate power rating of not less than 500 kilowatts per system, or a power rating of not less than 250 kilowatts per machine;

(b) steam generators or other vapor generators, where any one of the following applies:

1. having a gauge pressure of not less than 500 kilopascals;

2. having a steam or other vapor production rate of not less than 20,000 kilograms per hour per machine.

(c) pressure vessels, where any one of the following applies:

1. having a gauge pressure of not less than 1,300 kilopascals;

2. having a volume of not less than 10 cubic meters per unit.

(d) industrial furnaces having a heat input of not less than 1,500 kilowatts per furnace;

(e) air-conditioning, refrigerating, or heating equipment having an aggregate cooling or heating capacity of not less than 1,750 kilowatts;

(f) fluid systems in pressure or vacuum piping, where any one of the following applies:

1. having a fluid gauge pressure in the piping of not less than 500 kilopascals;

2. having a gauge vacuum lower than minus 50 kilopascals.

(g) fire extinguishing systems or fire protection systems covering an area of not less than 2,000 square meters;

(h) energy management, where any one of the following applies:

1. having electricity consumption of not less than 1 megawatt;

2. having total thermal energy consumption of not less than 20 million megajoules per year.

Clause 9 The types and sizes of works in the Regulated Engineering Profession in the field of Electrical Engineering are as follows:

(1) Electrical Power Works:

(a) Consulting Work in relation to the works under (b), (c), (d), (e), or (f), of all types and scales;

(b) Project Planning Work:

1. electricity generation systems having an aggregate capacity of not less than 1,000 kilovolt-amperes, or having a line-to-line system voltage of not less than 3.30 kilovolts;
2. transmission systems, distribution systems, and electrical utilization systems having an aggregate capacity of not less than 1,000 kilovolt-amperes, or having a line-to-line system voltage of not less than 12 kilovolts;
3. electrical systems and electrical machinery having an aggregate power rating of not less than 100 kilowatts;
4. energy management having electricity consumption of not less than 1 megawatt, or having total thermal energy consumption of not less than 20 million megajoules per year.

(c) Design and Calculation Work:

1. electrical systems or electrical equipment having a capacity of not less than 300 kilovolt-amperes, or having a line-to-line system voltage of not less than 3.30 kilovolts;
2. electrical systems for public buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
3. fire alarm systems and lightning protection systems for high-rise buildings or extra-large buildings under the law on building control, or condominium buildings under the law on condominiums;
4. electrical systems for controlled-use buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
5. electrical systems for controlled-use buildings under the law on building control used for the storage of hazardous substances, specifically explosives and flammable substances, of all scales;
6. electrical systems and electrical machinery having an aggregate power rating of not less than 7.50 kilowatts;
7. energy management having electricity consumption of not less than 1 megawatt, or having total thermal energy consumption of not less than 20 million megajoules per year.

(d) Construction or Production Control Work:

1. electrical systems or electrical equipment having a capacity of not less than 1,000 kilovolt-amperes, or having a line-to-line system voltage of not less than 12 kilovolts;

2. electrical systems for public buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
3. fire alarm systems and lightning protection systems for high-rise buildings or extra-large buildings under the law on building control, or condominium buildings under the law on condominiums;
4. electrical systems for controlled-use buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
5. electrical systems for controlled-use buildings under the law on building control used for the storage of hazardous substances, specifically explosives and flammable substances, of all scales;
6. electrical systems and electrical machinery having an aggregate power rating of not less than 20 kilowatts.

(e) Examination and Review Work:

1. electrical systems having an aggregate capacity of not less than 1,000 kilovolt-amperes, or having a line-to-line system voltage of not less than 12 kilovolts;
2. fire alarm systems and lightning protection systems for high-rise buildings or extra-large buildings under the law on building control, or condominium buildings under the law on condominiums;
3. electrical systems for public buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
4. electrical systems for controlled-use buildings under the law on building control, having an aggregate electrical load of not less than 200 kilovolt-amperes;
5. electrical systems for controlled-use buildings under the law on building control used for the storage of hazardous substances, specifically explosives and flammable substances, of all scales;
6. energy management having electricity consumption of not less than 1 megawatt, or having total thermal energy consumption of not less than 20 million megajoules per year;
7. passenger lifts or freight lifts capable of carrying persons, of all scales.

(f) Operational Supervision Work:

1. electrical systems or electrical equipment having a capacity of not less than 1,000 kilovolt-amperes, or having a line-to-line system voltage of not less than 12 kilovolts;
2. electrical systems and electrical machinery having an aggregate power rating of not less than 500 kilowatts, or having a power rating of not less than 250 kilowatts per machine;
3. fire alarm systems and lightning protection systems for high-rise buildings or extra-large buildings under the law on building control, or condominium buildings under the law on condominiums.

(2) Electrical Communication Works:

(a) Consulting Work in relation to the works under (b), (c), or (d), of all types and scales;

(b) Project Planning Work:

1. systems having radiocommunication stations using radio frequencies in accordance with the National Frequency Allocation Table, with an Equivalent Isotropically Radiated Power (EIRP) per carrier per station of not less than 30 watts;

2. cable systems supporting public transportation systems, namely road, rail, water, or air transport, of all scales;

3. telecommand systems, telemetry systems, or remote control systems for public transportation systems, namely road, rail, water, or air transport, of all scales.

(c) Design and Calculation Work, Construction or Production Control Work, and Examination and Review Work:

1. systems having radiocommunication stations using radio frequencies in accordance with the National Frequency Allocation Table, with an Equivalent Isotropically Radiated Power (EIRP) per carrier per station of not less than 30 watts;

2. cable systems supporting public transportation systems, namely road, rail, water, or air transport, of all scales;

3. telecommand systems, telemetry systems, or remote control systems for public transportation systems, namely road, rail, water, or air transport, of all scales.

(d) Operational Supervision Work:

systems having radiocommunication stations using radio frequencies in accordance with the National Frequency Allocation Table, with an Equivalent Isotropically Radiated Power (EIRP) per carrier per station of not less than 3.30 kilowatts.

Clause 10 The types and sizes of works in the Regulated Engineering Profession in the field of Industrial Engineering are as follows:

(1) Consulting Work, Project Planning Work, Design and Calculation Work, Construction or Production Control Work, and Examination and Review Work:

(a) factories under the law on factories, such as factory layout planning or the planning of machinery movement within factories;

(b) production systems; the manufacture or assembly of anything; processes for the production of finished or semi-finished materials; melting, casting, rolling, welding, turning, metal coating, heat treatment, plating, or the processing of metal, wood, or other materials, employing not less than fifty workers, or involving an investment of not less than twenty million Baht, excluding land costs;

(c) production support systems, safety systems, semi-automatic systems, automatic systems, or intelligent systems for making, manufacturing, assembling, packaging, repairing, maintaining, testing,

improving, transforming, conveying, storing, or destroying anything, employing not less than fifty workers, or involving an investment of not less than twenty million Baht, excluding land costs;

(d) ore smelting and metal refining, involving any of the following production quantities:

1. tin, not less than 2 tonnes per day;
2. lead, zinc, copper, or antimony, not less than 5 tonnes per day;
3. iron or steel, not less than 10 tonnes per day;
4. radioactive waste under the law on nuclear energy for peace;

(e) industrial engineering management systems in manufacturing industries or service industries involving risk assessment, safety management, quality control, quality assurance, and logistics systems management, involving an investment of not less than twenty million Baht, excluding land costs;

(f) fire extinguishing systems or fire protection systems having an aggregate value of not less than three million Baht or having a fire protection area of not less than 2,000 square meters.

(2) Operational Supervision Work:

(a) structures and machinery used for pollution control, waste treatment, toxic substance disposal, hazardous substance disposal, radioactive waste management, or the disposal of anything in factories under the law on factories, or involving an investment of not less than twenty million Baht, excluding land costs;

(b) ventilation systems, lighting systems, and other systems relating to pollution control, waste treatment, toxic substance disposal, hazardous substance disposal, radioactive waste management, or the disposal of anything in factories under the law on factories, or involving an investment of not less than twenty million Baht, excluding land costs;

(c) production processes involving chemical reactions, the use of flammable substances, the use of hazardous substances, fractional distillation, or operations conducted in equipment operating at pressures above atmospheric pressure, in factories under the law on factories, or involving an investment of not less than twenty million Baht, excluding land costs;

(d) fire extinguishing systems or fire protection systems having an aggregate value of not less than three million Baht, or having a fire protection area of not less than 2,000 square meters;

(e) systems or machinery used in production systems, production support systems, semi-automatic systems, automatic systems, intelligent systems, or safety systems for making, manufacturing, assembling, packaging, repairing, maintaining, testing, improving, transforming, conveying, storing, or destroying anything, employing not less than fifty workers, or involving an investment of not less than twenty million Baht, excluding land costs.

Clause 11 The types and sizes of works in the Regulated Engineering Profession in the field of Environmental Engineering are as follows:

(1) water supply systems having a maximum production capacity of not less than 500 cubic meters per day;

(2) Potable water systems for:

(a) communities or buildings having a maximum production rate or maximum water supply rate of not less than 50 cubic meters per day;

(b) factories under the law on factories, of all scales of potable water systems;

(c) industrial estates under the law on industrial estate authority, of all scales of potable water systems.

(3) Wastewater systems for:

(a) communities or buildings having a maximum wastewater handling capacity of not less than 30 cubic meters per day;

(b) factories under the law on factories, of all scales of wastewater systems;

(c) industrial estates under the law on industrial estate authority, of all scales of wastewater systems.

(4) Wastewater reuse systems for:

(a) communities or buildings having a maximum wastewater reuse capacity of not less than 30 cubic meters per day;

(b) factories under the law on factories, of all scales of wastewater reuse systems;

(c) industrial estates under the law on industrial estate authority, of all scales of wastewater reuse systems.

(5) Drainage systems for:

(a) areas having a total water flow volume of not less than 10,000 cubic meters per day;

(b) land subdivision areas under the law on land subdivision, of all scales of such land subdivision areas.

(6) air pollution control systems for premises having sources of pollution under the law on enhancement and conservation of national environmental quality, with an air emission volume of not less than 300 cubic meters per hour;

(7) noise or vibration pollution management systems for factories under the law on factories, or buildings or public buildings under the law on building control, where the levels exceed the standards prescribed by law;

(8) soil remediation systems or water remediation systems for contaminated sites having an area of not less than 3,000 square meters;

(9) solid waste management systems at the following premises:

(a) communities generating solid waste of not less than 5,000 kilograms per day;

(b) factories under the law on factories, or public buildings or large buildings under the law on building control, generating solid waste of not less than 2,000 kilograms per day;

(c) sources generating infectious waste under the law on public health, of all scales;

(d) sources causing contamination by radioactive materials under the law on nuclear energy for peace, of all scales.

(10) industrial waste management systems, of all scales;

(11) fire extinguishing systems or fire protection systems having an aggregate value of not less than three million Baht per system, or having a fire protection area of not less than 2,000 square meters;

(12) groundwater systems or aquifer recharge systems, having a capacity of not less than 1,000 cubic meters per day;

(13) environmental impact assessment under the law on enhancement and conservation of national environmental quality, relating to engineering works in the field of environmental engineering.

Clause 12 The types and sizes of works in the Regulated Engineering Profession in the field of Chemical Engineering are as follows:

(1) production processes of factories under the law on factories or business establishments relying on chemical, physico-chemical, biochemical, or electrochemical reactions to obtain the specified products, using power of not less than 500 kilowatts or the equivalent;

(2) production processes of factories under the law on factories or business establishments that cause raw materials to undergo changes in physical properties or changes of state in order to obtain the specified products, using power of not less than 500 kilowatts or the equivalent;

(3) production processes of factories under the law on factories or business establishments in which the raw materials or products are powders or granules that may cause explosions or generate static electricity, using power of not less than 500 kilowatts or the equivalent;

(4) production processes of factories under the law on factories or business establishments using or generating toxic substances, flammable substances, or Type 3 hazardous substances under the law on hazardous substances, of all scales;

(5) production processes of factories under the law on factories or business establishments relying on chemical reactions under a gauge pressure of not less than 2 atmospheres, or under an absolute pressure lower than 1 atmosphere;

(6) waste management or treatment processes arising from the production processes of factories under the law on factories or business establishments, using chemical catalysts, biochemical catalysts, biological catalysts, or production units assisting in waste treatment, with power used in the waste treatment process of not less than 20 kilowatts or the equivalent;

(7) systems for the storage, transportation, or transfer of hazardous substances under the law on hazardous substances, chemicals, or powders or granules that may cause explosions or generate static electricity, having a capacity of not less than 20 metric tons;

(8) production processes having, or comprising, any of the following equipment:

(a) distillation tower or column systems or vessel systems used for the separation of substances by means of differences in boiling points, and including vessel systems using differences in boiling points together with other related processes for the separation of substances or products, using power of not less than 7.50 kilowatts or the equivalent;

(b) other substance separation equipment systems, such as membrane separation units or packed-bed filters, using power of not less than 7.50 kilowatts or the equivalent;

(c) other size-separation equipment systems, such as bag filters, cyclones, or electrostatic precipitators, using power of not less than 7.50 kilowatts or the equivalent;

(d) evaporator systems or vessel systems used for the separation of substances by causing molecules at the surface of a liquid to become vapor molecules through pressure reduction, heating, or both, depending on the saturated vapor pressure, having a capacity exceeding 500 litres, or using power of not less than 7.50 kilowatts or the equivalent;

(e) reactor systems in the form of vessels or other forms in which chemical reactions occur, or in which changes in chemical structure or chemical bonds occur, whether or not catalysts are used, in order to produce substances or products having properties different from the reactants, relying on chemical reactions under a gauge pressure of not less than 3 atmospheres or under a pressure lower than 1 atmosphere absolute, using power of not less than 7.50 kilowatts or the equivalent, or having a production capacity of not less than 100 kilograms per hour, or having a size of not less than 1,000 litres;

(f) adsorption tower systems or vessel systems used for the separation or removal of substances, in which mass transfer occurs from a fluid phase to a solid phase, and including vessel systems using materials for the separation or removal of substances, using power of not less than 7.50 kilowatts or the equivalent;

(g) absorption tower systems or vessel systems used for the separation or removal of substances, in which mass transfer occurs from a fluid phase to a fluid phase, and including vessel systems using materials as media to provide mass-transfer area, using power of not less than 7.50 kilowatts or the equivalent;

(h) extraction tower systems or vessel systems used for separating desired substances that are components in mixtures by dissolving them with suitable solvents, and including the use of carrier substances to react with the desired substances in mixtures for the separation of substances or products, having a capacity exceeding 1,000 litres, or using power of not less than 7.50 kilowatts or the equivalent;

(i) heat exchanger systems or vessel systems used for heat exchange through water or other media in order to continuously receive or transfer heat, where the temperature of the heating medium exceeds 100 degrees Celsius, and including vessel systems using materials as media to provide heat-transfer area, with a total material surface area of not less than 5 square meters, or using power of not less than 7.50 kilowatts or the equivalent;

(j) furnace systems, decomposition furnace systems, or combustion furnace systems using fuel or other thermal energy sources in chemical industrial factories, having an operating temperature of not less than 500 degrees Celsius, or using power of not less than 40 kilowatts or the equivalent;

(k) crystallizer systems, vessel systems used for separating substances by using heat to reduce the amount of solvent, or vessel systems used for separating substances by lowering or increasing temperature so that the solution reaches a supersaturated state, and including vessel systems used for separating substances by adding any substance that changes the properties of the solvent or solute and causes crystallization into separated solids, having a capacity exceeding 1,000 litres, or using power of not less than 7.50 kilowatts or the equivalent;

(l) ion-exchange tower systems or vessel systems used for the separation or removal of substances by ion or charge exchange, having a capacity exceeding 1,000 litres, or using power of not less than 7.50 kilowatts or the equivalent;

(m) sedimentation tank systems or vessel systems used for separating substances by gravity, using power of not less than 7.50 kilowatts or the equivalent;

(n) pressure vessel systems in production processes, or closed vessel systems in which the pressure differential between the inside and outside of the vessel exceeds 1.50 times atmospheric pressure at sea level and having a diameter greater than 103 millimeters.

(9) fire extinguishing systems or fire protection systems of factories under the law on factories, namely factories engaged in activities relating to chemicals or chemical materials, or petroleum refineries, of all scales.

Clause 13 This Ministerial Regulation shall not apply to practitioners of the science and technology profession solely in respect of works in the Regulated Engineering Profession in the field of Environmental Engineering and works in the Regulated Engineering Profession in the field of Chemical Engineering.

Given on the 16th June B.E. 2565

General Anupong Paochinda
Minister of Interior

Note: The grounds for the promulgation of this Ministerial Regulation are that the works, types, and sizes of work in the Regulated Engineering Profession prescribed by the Ministerial Regulation Prescribing Fields of the Engineering Profession and the Regulated Engineering Profession, B.E. 2550 (2007), are no longer consistent with current circumstances, in which engineering science and technology have advanced rapidly. Certain types of engineering work may affect the safety of life, body, and property of the public, as well as environment quality. It is therefore appropriate to revise and improve the works, types, and sizes of work in the Regulated Engineering Profession to be consistent with current circumstances, including other laws prescribing requirements relating to engineering safety. It is therefore necessary to issue this Ministerial Regulation.