The Engineers' Bill: Evolution and Current Status

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The need for the Engineers' Bill, to be enacted, was strongly felt post Gujarat earthquake. The action to draft the bill was initiated by the Ministry of Human Resources (MHRD). The first draft was circulated in the year 2007. Subsequently, in 2009, the final draft was circulated.

The Constitution of India treats all the citizens equally, as regards to the civil rights. Certain professionals were recognized to be defined by specific acts and regulated by the respective councils, which are accorded rights-to-self-discipline. Law, Medicine, Accountants, Architects, etc., are some of the professions to name a few. An engineering professional is the one providing any service or creative work in the field of engineering. An adequate performance requires engineering and technology education, training and experience in the application of special knowledge of mathematical, physical and engineering sciences to provide such a service. The service shall make an effective use of natural, financial and human resources. It includes, but is not limited to, consultation, studies, investigations, evaluation, conceptualization, planning, design, execution and supervision / management of engineering projects and systems, operation and management of manufacturing and allied units and other systems. Teaching along with research / consultancy in any engineering discipline in an academic institution or research organization shall be considered as part of the engineering profession.

Evolution and Current Status

Most of the developed and developing countries regulate the profession of engineering. India cannot be an exception. The need for Engineers' Bill to be enacted was strongly felt post Gujarat earthquake. The action to draft the bill was initiated by the Ministry of Human Resources (MHRD). The first draft was circulated in the year 2007. Subsequently, in 2009 the final draft was circulated. The Engineers' Bill was not taken-up and introduced in the Parliament because of lacking in its due priority or the distorted priorities.

Need for the Engineers' Bill to be enacted

The dwindling standards in engineering education and ethics among engineers are leading to sub-standard products and public amenities. The Volvo pollution control certification episode, the arrest of Roorkie IIT professors, the

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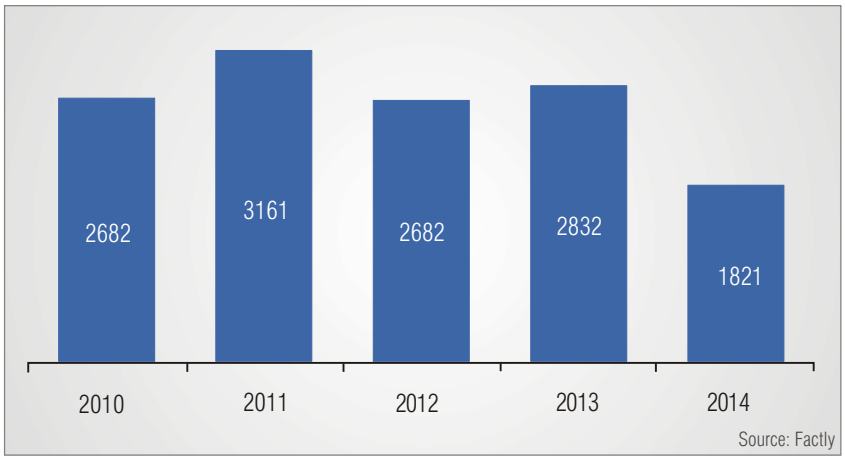
Kolkata flyover collapse etc., are just a few recent examples. Unless the engineers are made responsible, they will not be empowered to implement the standards. Accountability is attached to responsibility. The empowered council will help to regulate and improve the profession / practice of engineering. Hence, the Engineers' Act is being introduced to improve the commitment and responsibility of the engineers.

Technology is visualized to play a key role in sustainable socio-economic development. Efficient use of resources physical, financial and human, will be a determining factor in raising the rate of growth. It has to be ensured that activities of engineering and technology are performed by competent persons upholding professional ethics.

Engineers and technologists are expected to take decisions with due professional integrity. It is necessary to properly regulate the practice of engineering by an 'Act' of the Parliament to protect public interest, ensure safety and welfare of the people. For the regulation of the engineering profession, as mandated in this Bill, a separate statutory authority will be set-up that shall lay down from time-to-time, specifications for competency in professional practice. It will also have the mandate for recognition of competency through a process of registration and renewal, keeping in view the need for CPD - Continuous Professional Development.

Recognizing the engineering education and engineering practice systems in the country have a vast spread and are growing at a rapid pace, the AICTE and other professional Institutions like the Institution of Engineers (India) and various other professional societies and organizations are currently involved in improving and / or regulating the quality of education, training, research, and professional practice in engineering and technologies. It is the intent of the legislature to co-ordinate the activities of all such organizations, promote co-operative links among them and give them the necessary authority for enforcing a common code of ethics.

The intent of the legislature is also to utilize the knowledge and experience of competent societies in regulating the profession by laying down norms of professional conduct to take appropriate penal action against failure to follow them.



Number of Deaths Due to Collapse of Structures

The Engineers' Bill will

- Facilitate recognition of qualified professionals;
- Regularize the existing and future engineers through a register;
- Organize the profession of engineering through its council;
- Control the practice of profession with laid-down ethics within the frame work;
- Fix accountability of engineers in practice to uphold the standards and quality, resulting in safety of the end-users of all engineering works.

The proposed body of Indian Council of Engineers (ICE)

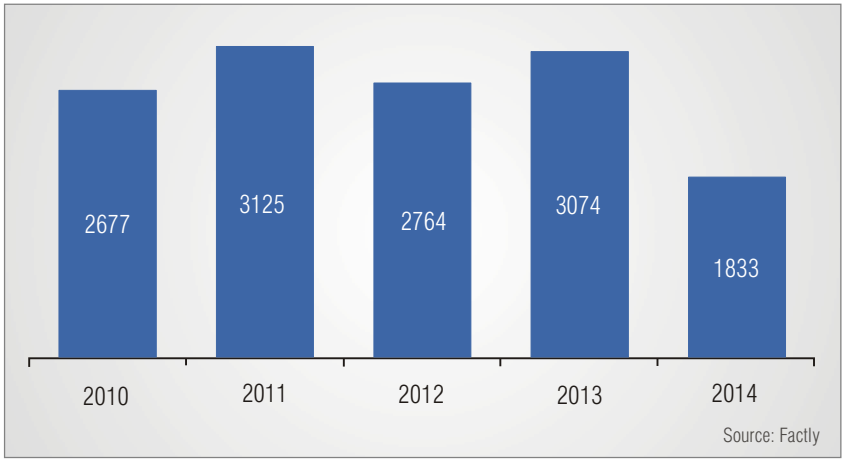
- ICE will be the regulating body to enact the Engineers' Bill;
- ICE will not accord the PE Professional Engineer status;
- ICE will authorize its constituent institutions / member societies to provide PE status;
- ICE may authorize IE (I) to give two categories of PE;
- PE - India Professional Engineer (India);
- PE - International Professional Engineer (International).

PE is based on

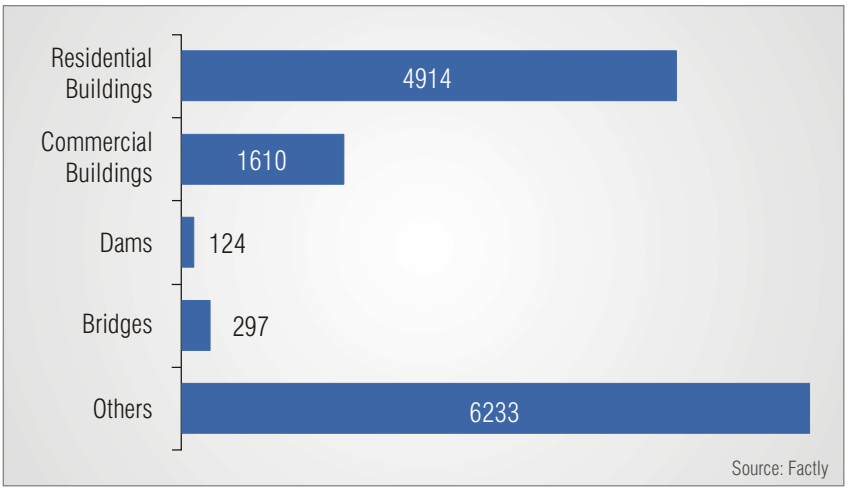
- Qualification, experience, core professional experience, CPD continuing professional development, tests, interviews, periodic renewal;
- The PE categories can be as many as ICE may decide from time-to-time (at present, they are twelve);
- ICE can invite professional bodies to be part of any of the twelve categories.

The Salient Features

- All graduate engineers are entitled to register as engineers;
- The 'Er.' title are only for the registered engineers;
- Only registered engineers can practice or be employed as engineers;
- Engineer must adhere to the 'Code of Ethics' and norms laid down by ICE;
- Membership renewal after 5 years



Number of Incidents - Collapse of Structures



Number of Deaths by Collapse of Various Structures (2010-2014)

and 10 years, thereon;
- Renewal of membership shall be based on CPD, ethics and feedback.

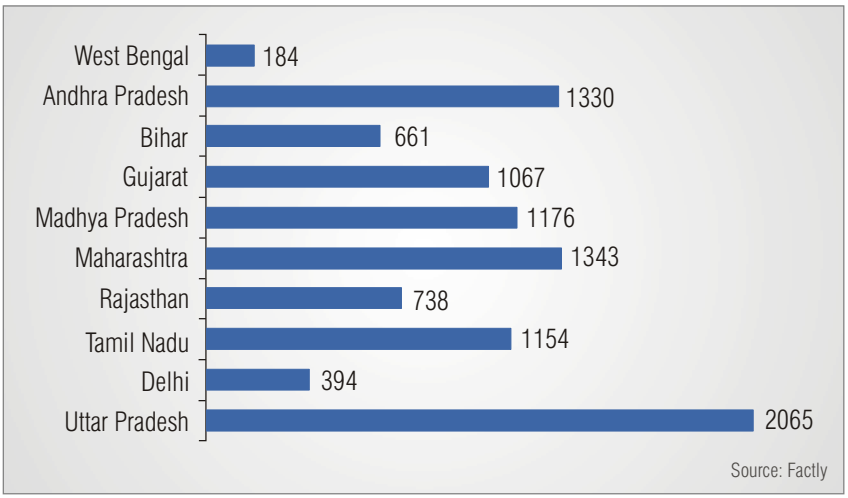
Registration with Other Public Bodies

Once a person is registered as a registered engineer, the person shall be deemed to have been registered by a central or state government, municipal or other local or public body. It requires registration of engineers under a law, rules or regulations.

Other Powers of ICE are:

- Disciplinary action on registered engineers can be taken by the ICE;
- ICE can initiate suo-moto action;
- Initially, engineers may register voluntarily. After 2 to 3 years, registration for the engineers will be compulsory to be identified as engineers;
- Registration and renewal fees may be fixed by the ICE as per other bodies;
- Existing infrastructure of institutions for implementation of norms to be utilized;
- The members of ICE should agree that they will develop, monitor, maintain and promote acceptable standards and criteria for international mobility of PE;
- Identify and encourage implementation of best practices and process for training and assessment of engineers intending to practice at the professional level;
- Continue monitoring and information exchange by:

i) Regular communication and information exchange concerning assessment procedures, criteria, systems, manuals, publications and register of recognized practitioners;
ii) To study the operation of the procedures of other participants, observe meetings of Boards/Commissions responsible for implementing key aspects of procedures and meetings of the governing bodies of the participants;
iii) Establish Indian / International register of PEs with UID, which would provide a readily accessible frame work for recognition by the responsible bodies of the substantial equivalence in the competence of experienced professional engineers.



Number of Deaths by Collapse of Structures (2010-2014)

Indian Law Makers and the Government to Prioritize Enacting Engineers' Bill Immediately:

An engineer or team of engineers, is expected to ideally design a utility facility for safe and intended performance in efficient, effective, economic and safe way. There is no act or authority to penalize unqualified or incapable engineer failing in his duty. Hence, there is no onus on an engineer to acquaint himself with desired knowledge and develop professionally.

An engineering contractor or supervisor is expected to execute a project in safe and with desired quality. When he doesn't perform, he is only penalized financially but is not forced to upgrade or improve performance through CPD.

An engineer in government service is also expected to deliver certain projects and there is no compulsion on him to upgrade his knowledge and performance. An engineers act can minimize all the losses in projects and industry production improving assurance in quality, safety and economy. More than all the loss of life, due to poor quality infrastructure, built environment, industrial production, etc., can be minimized. Road accidents, building collapses, construction failures, bridge collapses, poor quality products, environmental pollution etc., cause many unreported deaths.

- The Engineers' Act is needed to protect lives of workers and end-users;
- The Engineers' Act is needed to ensure desired quality and delivery of products and projects;
- The Engineers' Act is needed to minimize wastage of resources in our country;
- The Engineers' Act will enhance organizing the sector and add to GDP.

Therefore, the Engineers' Bill shall be enacted on high priority for better mobility of engineers and better organized and accountable engineering sector.◆