



The Indian Engineer

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From Chairman's Desk



An important role of Engineering Council of India (ECI) is to enable networking among its members and disseminate information to them. ECI is like a confederation of professional engineering associations/societies/institutions and is making efforts to help them in their professional activities. This Newsletter is a step in that direction. It will provide latest information relating to engineering profession, enable the member organizations to exchange information about their activities, programmes and events, and provide a forum for interaction. The success of this effort will depend largely on the support and information feeding by our members.

This being the first issue, attempt has been made to cover as much as possible about the member organizations' profile and activities. In some cases where information was not received from them, it has been taken from their web site. As it is proposed to be a quarterly Newsletter, I would request all the member organizations to provide information on their activities during the previous quarter as well as the programmes/events scheduled during the next quarter. I would also request for suggestions to improve the Newsletter and make it more useful to them.

(Uddesh Kohli)



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Engineering Profession included in the Delhi Master Plan provision

In September, 2006 Notification issued by the Ministry of Urban Development on the Master Plan of Delhi-2001, Engineering was excluded from the list of professions permitted to operate from residences. ECI took up the matter with the Ministry of Urban Development, DDA, MCD, Lt Governor, Monitoring Committee constituted by the Supreme Court and other concerned bodies. Chairman, ECI, also discussed this important issue with the Minister of Urban Development.

Following the efforts made by ECI jointly with its members and other bodies, Engineers have now been included in the list of Professionals in the Master Plan of Delhi-2021. ECI wishes to thank all the members who supported these efforts

From the History of Roads

The Maurya empire had a very good network of roads. These roads were constructed and maintained by a "ministry of public works". Important roads were 24' wide. The Royal Highway connecting Taxila with Pataliputra has now been reconstructed as the Grand Trunk road. Indian roads were noted for the travellers' amenities all along their length.

*Source: *Bulletin of ACCE(I)*, 5(2), 7(Oct.-Dec., 2005)

Appointments

Shri N. T. Nair has taken over the charge of the President of the Institute of Electrical and Electronics Engineers.

Shri J. C. Marwah has taken over as the Secretary General of the Indian Institute of Metals.

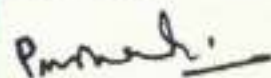
From Editor's Desk

In the WTO environment, engineering profession needs to develop in conformity with the international standards and requirements. For India to take part in the trade in engineering services, it should, therefore, realize equivalence of professional competence of its engineers as per the international standards largely that of the Engineers Mobility Forum (EMF). This implies that the registration of professional engineers, their continuing professional development, ethics and morality will have to be as per the standards set by the EMF and such other bodies, like, say, for example, Asia Pacific Economic Cooperation Agreement (APEC). Engineering Council of India (ECI) has developed systems and procedures which generally conform to these international standards.

The Engineers' Act is one of the important components of the framework for bringing in the equivalency of the Indian professional engineers and professional engineering organizations vis-à-vis those of the EMF. It is, therefore, important that the Engineers' Bill becomes the Engineers' Act speedily. ECI has prepared the Engineers' Bill with the involvement of its Member Associations and it has been submitted to the Government of India. ECI is pursuing the matter with the Ministry of Human Resources Development (HRD).

The trade basket of engineering services also contains diploma holders in engineering and the skilled engineer workers. This is categorized as the second and the third tiers of the engineering services, respectively. ECI has the responsibility to bring these categories of engineering professionals into the equivalency net. This is a big task. ECI is working out the modalities for completing this task. Member Associations of ECI have also been involved in this work. But the progress is slow. We are conscious of this and attempt is being made to speed up this work.

Membership strength of the Member Associations of ECI is a cause of worry. All working professional engineers are not members of the professional bodies of their field of specializations. For example, there are around 4,00,000 working metallurgical and material engineers in the country; whereas only around 9000- engineers of this specialization are on the rolls of the Indian Institute of Metals. Efforts are needed for increasing membership of all our Member Associations and ECI will support all these efforts.



(P. N. Shali)

Our Congratulations

ECI congratulates Indian Institute of Metals for its Diamond Jubilee.

- We congratulate Dr. J. J. Irani, Hon. Member & Past President of the Indian Institute of Metals, on being conferred with 'Padmabhusan' award for his dedicated services and contributions to the nation.
- We congratulate Dr. Baldev Raj, Hon. Member & Immediate Past President of the Indian Institute of Metals, on being conferred with 'Padmasree' award for his dedicated services and contributions to Science & Engineering.
- We congratulate Dr. Placid Rodriguez, Hon. Member & Past President of the Indian Institute of Metals, on being conferred with the Lifetime Achievement award, 2006 by 'Indian Institute of Welding'

ECI Membership

Membership of the ECI is open to the societies / organizations of engineers who meet the following conditions:

- has been established statutorily or legally registered
- has at least 100 corporate members
- has existed for at least four years the accounts being audited annually

Request for Members

Please forward us the information on awards won, PhDs obtained and any other achievements of your Members for publication in the newsletter - The Indian Engineer. The information may be sent on e-mail or by post.

The Information

Member associations of ECI are requested to provide information on the CPD programmes held during Jan-March 2007 along with soft / hard copies of important photographs. Also, information on the slated programmes for 2007-08 may be provided.

ENGINEERING COUNCIL OF INDIA (ECI)

ECI, the apex body of all professional associations/bodies of engineers, was established on April 4, 2002 by coming together of a large number of professional organizations & institutions of engineers to work for the advancement of engineering profession in various disciplines and for enhancing the image of engineers in society by focusing on quality and accountability of engineers and to enable the recognition of expertise of Indian engineers and their mobility at international level in the emerging WTO/GATS environment. The main mission of the ECI is to work for the advancement of engineering profession in India to the level obtainable in the developed countries.

ECI has been engaged on the following tasks :

- Develop systems for certification of the competence of the professional engineers for undertaking professional activities through a registration system
- Develop systems for the certification of the competence of engineering organizations offering consultancy services
- Develop system for the certification of Continuing Professional Development (CPD) of professionalisation and integrate these with the registration process to upgrade the expertise continuously

- Lay down norms of professional conduct and procedures for taking appropriate action for promotion of these norms
- Develop a Resource Centre for the professional engineers, including various data bases
- Network with international fora such as Engineers Mobility Forum (EMF)
- Prepare a draft Engineers' Bill, covering the process of registration of Professional Engineers and Consulting Engineering Organizations

Workshop with the States

The Indian States utilize engineering services in a big way. The issues relating to development of engineers are, therefore, of great relevance to the State Governments and its concerned institutions/ organizations. ECI proposes to conduct a half-day state-level workshop for highlighting the issues relating to social accountability, advancement and competency development of the state engineers in the context of international requirements as well as the current economic environment of competition. This workshop will also deliberate on the need of an Engineers' Bill, inter alia, for creating a central statutory body similar to medical, architectural, legal and other professions including a similar legislation, if considered necessary at the state level.

REGISTRATION OF PROFESSIONAL ENGINEERS

According to the Ministry of HRD, Govt. of India, registration of engineers is a statutory function and can only be undertaken by a statutory body created under the enactment of law. Any registration started in the absence of such an authority may not stand judicial scrutiny and would not be legal. Until the Engineers' Bill is passed by the Parliament and it becomes the law, registration of Professional Engineers by any institution/agency in India will, therefore, not be legally valid.

Indira Gandhi National Open University (IGNOU)

IGNOU is facilitating development of education through distance learning. It conducts programmes for awarding certificates, diplomas, degrees and post-graduate degrees. IGNOU has agreed to work with the ECI and its Member Associations for the benefit of engineers. It is willing to look into the question of giving university degree of IGNOU to the candidates who are issued Associate Membership Certificates by the Member Associations of ECI after examination. The matter is under active consideration of the ECI and IGNOU.

Other Conference

3rd Indian Steel and Steel-Making Raw Materials Conference was held at Taj Palace Hotel, New Delhi on 14-16 February, 2007 sponsored by SMS metallurgy, a group of companies internationally active in metallurgical plant and rolling mill technology as well as tube, long product and forging technology. The very fabric of the Indian steel industry was looked at in the conference.

Flash from the Corporate World

We congratulate M/s Tata Steel for successfully winning the Corus acquisition at US\$ 12.1 billion and becoming the 5th largest Steel producer in the world and making it a fortune 500 corporate.

Why do we need the Engineers' Bill?

- Without this Bill, in the eyes of the Indian Law, the Profession of Engineering does not exist.
- It was amply demonstrated by the recent list of "Professionals" initially included in the list by

ENGINEERS' BILL

ECI has prepared a draft Engineers' Bill after extensive consultations and submitted it to the Ministry of HRD, Govt. of India. The Draft Bill lays down the criteria and statutory framework for the process of registration of Professional Engineers and Consulting Engineering Organisations. The draft is under consideration of the Ministry.

Ministry of Urban Development i.e., "Architects, Lawyers, Doctors and Chartered Accountants" which excluded Engineers.

- This is despite the fact that the Profession of Engineering makes the maximum contribution to the development of the country.
- Why then are the Engineers willingly excluded from this list? Because each profession in the accepted list has a legislated Regulatory body, but the Engineering Profession does not have any.
- Is that the only reason why we should have the Engineers' Bill? *No, there are other reasons too.*
- Let us take a look at these reasons.
- @ *We have requirement at National as well as International level for enactment of the regulatory Engineers' Bill.*

National Level Requirements

We need the regulatory Engineers' Bill to identify those with proven competence to practice the profession of engineering in order to ensure safety and welfare of public/society, to introduce a system for licensing/ certification of Engineers, to prevent unqualified/under-qualified/incompetent engineers from practicing the profession, to safeguard the society from unethical and incompetent engineers, to ensure that professionals

follow the prescribed Technical Codes, Standards and Byelaws, to ensure that the level of technical competence of professionals is updated on a continuing basis, to introduce and enforce a Code of Ethics, to ensure accountability of professionals to their clients and society, to improve the present distorted image of engineering profession in the society and to attract bright young graduate engineers to the engineering profession.

International Level Requirements

We need the regulatory Engineers' Bill to fulfill the requirements of GATS & WTO, to regulate entry of foreign professionals even in the country, to ensure reciprocity in exchange of professionals with other countries, to become a member of Engineers' Mobility Forum, to establish international equivalence for registration and licensing procedures and to facilitate cross-border mobility of engineers.

Obituary

We deeply mourn the sad demise of Maj. Gen. (Retd.) C. M. Logani, Secretary General, The Institution of Electronics & Telecommunication Engineers and convey our heart-felt condolences and prayers for the peace of the departed soul.

2007 International Engineering Meetings (IEM)

June 18, 2007 & June 22, 2007
Omni Shoreham Hotel, Washington, D.C., U.S.A.

New Member

The Indian Association of Structural Engineers have joined ECI as its 25th member.

Challenges in Engineering Practices

1. An engineer's role is to apply engineering principles & skills in an ethical manner for the benefit of the society. In the present day world, technical breakthrough has revolutionized engineering activity. Engineering challenges include high-rise buildings, energy conservation, environmental protection for sustainable development, infra-structural facilities, super expressways, bridges, railways, airports and seaports, satellites and satellite-launching stations, onshore and offshore oil terminals, ships and aircrafts. Engineering technology and new materials are emerging at an accelerated pace. Engineering has come to be a tradable commodity. The WTO helps increase international trade by promoting lower trade barriers and providing a platform for the negotiation of trade/business.

General Agreement on Trade in Services (GATS)

Trade in Services refers to the sale and delivery of an intangible product, called a service, between producers and consumers who are, in legal terms, based in different countries, or economies. The engineering, the financial services and the telecommunications services sectors, etc. are examples of services sectors.

During the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), the GATS was drafted, and became enshrined as one of the four pillars of the international treaty comprising the WTO Agreement in 1995. GATS is defined by the Four Modes of Supply.

- Mode 1. Cross border trade, which is defined as delivery of a service from the territory of one country into the territory of other country;
- Mode 2. Consumption abroad - this mode covers supply of a service of one country to the service consumer of any other country;
- Mode 3. Commercial presence-which covers services provided by a service supplier of one country in the territory of any other country, and
- Mode 4. Presence of natural persons - which covers services provided by a

service supplier of one country through the presence of natural persons in the territory of any other country. A "Natural Person" is a human being, as distinct from legal persons such as companies or organizations. Countries can freely decide where to liberalize on a sector-by-sector basis, including which specific mode of supply they want to cover for a given sector.

India's interests particularly lies in Modes 4 and 1. Mode 4 is particularly applicable to independent professionals as well as skilled technicians. Mode 1 offers scope for capitalizing on access through Consultancy services. India is well placed to take advantage of the emerging situation of workforce shortage in the developed world. WTO Classification of Services sector lists engineering services and integrated engineering services under professional services, including a separate category of construction & related engineering services. Regional trade in services agreements is also negotiated and signed between regional economic groupings such as CARICOM, NAFTA and ASEAN.

1.3 Washington Accord (WA)

The Accord pertains to the recognition of equivalency of accredited engineering education programmes leading to the engineering degree. It is, therefore, a key foundation for the practice of engineering at the professional level in each of the countries or territories covered by the Accord. The signatory-to-the-Accord countries agree that the criteria, policies and procedures used by them in accrediting engineering academic programmes are comparable and that the accreditation decisions rendered by one signatory are acceptable to the other signatories. Each signatory will make every reasonable effort to ensure that the bodies responsible for registering or licensing professional engineers to practise in its country or territory accept the substantial equivalence of engineering academic programs accredited by the signatories to this agreement. Members to the accord include countries such as Australia, Canada, Hon Kong - China, Ireland, New Zealand, South Africa, UK, USA and Japan, Germany, Singapore and Malaysia.

Engineers Mobility Forum (EMF)

The EMF agreement is a multi-national agreement between engineering organisations in the member-jurisdictions which creates the framework for the establishment of an international standard of competence for professional engineering, and then empowers each member organization to establish a section of the International Register of Professional Engineers (IPER). EMF facilitates cross-border mobility of registered practitioners - Professional Engineers. Full Members of the EMF include countries such as Australia, Canada, Hong Kong China, Ireland, Japan, South Korea, Malaysia, New Zealand, South Africa, United Kingdom and United States of America.

Asia Pacific Economic Cooperation Agreement (APEC)

There is an agreement in place between the APEC member-countries for the purpose of recognizing "substantial equivalence" of professional competence in engineering. APEC countries can apply to become members of the agreement by demonstrating that they have, in place, systems which allow the competence of engineers to be assessed to the agreed international standard set by the APEC Engineer Agreement. The economies which have been assessed as having the systems in place to operate an APEC Engineer Register include New Zealand, Australia, the United States, Malaysia, Hong Kong-China, Japan, Korea, Canada and Indonesia. Most of the APEC agreement members are also members of the EMF agreement, but the latter is truly global so that countries such as the United Kingdom, Ireland and South Africa have become members of EMF even though they cannot join the APEC agreement.

Registration on the (IPER) of EMF, with APEC Engineer benefits, ensures that professional engineers in New Zealand have the opportunity to have their professional standing recognized within the APEC region thereby contributing to the globalization of professional engineering services. This is of particular benefit to engineering firms that are providing services to other APEC economies but it also adds value to individuals who may wish, at some stage, to work in these economies.

Each member economy of the APEC Agreement has given an undertaking that the extra assessment required to be registered on the local professional engineering register will be minimised for those registered under the APEC Engineer Agreement.

Other International Initiatives

- a) **Sydney Accord.** The deliberations of the Ottawa Working Group resulted in the signing of the Sydney Accord, which for technologists is the equivalent of WA for engineers.

The agreement is very similar to WA. The signatories are all the WA countries except USA who, at this stage, remains an observer. In Canada, technologists and technicians are dealt with by a separate body, namely, the Canadian Council for Technologists and Technicians.

- b) **Engineering Technologists Mobility Forum.** The Ottawa Intent Working Group has also been

working on the establishment of an Engineering Technologists Mobility Forum (ETMF). This forum will be similar to EMF. A further intention of the agreement is to recognize those professional technologists as well who attain competence levels through alternate routes.

- c) **Dublin Accord.** An agreement exists between UK and Ireland, called the Dublin Accord, for educational qualifications for technicians. Canada, Ireland, UK and South Africa agreed in 2001 to continue to explore options and this exercise may lead to Canada and South Africa joining the Dublin Accord.

Extra-Territorial Accreditation

WA is an instrument for recognition of educational programs accredited in the jurisdiction of an accrediting body. Some countries are going beyond their territorial areas for accreditation. USA and Canada are mandated to carry out visits to other countries which do not have accreditation

systems in order to establish "substantial equivalence" of programs to those in their jurisdictions. The UK Engineering Council undertakes accreditation of universities in other countries at their request and accredits degrees awarded by them. Such accreditation, however, has no standing in the WA.

United States Council for International Engineering Practice (USCIEP), promotes outside USA practices.

In USA license depends on 3 elements :

- | | |
|-------------------------|--|
| 1 Education | ABET(Accreditation Board for Engineering & Technology) |
| 2 Examination | NCEES(National Council of Examiners for Engineering and Surveying) |
| 3 Professional Practice | NSPE (National Society of Professional Engineers).
Responsible for Ethical, Competent and Licensed Engineering Practice |

About our Members

1. The Aeronautical Society of India (ASI)

ASI, a premier professional society, is dedicated to the advancement of the aerospace as a profession, education in the field of aeronautics and aerospace and to conceive, visualize and define national aeronautics policy for facilitating its formation.

2. Indian Institution of Plant Engineers (IPE)

IPE is dedicated to the improvement of productivity, efficiency, utilization and thereby increasing the profitability of industrial plants in the country.

3. Association of Consulting Civil Engineers (India) (ACCE)

Its aims include fostering ideals of profession, establishing rules for professional and ethical conduct, bringing to the members the latest technological advancements in the world, identifying the areas in which consultants can contribute to the betterment of the country and developing social awareness and responsibility amongst the members.

4. Broadcast Engineering Society (India) (BES)

It is the biggest body of broadcast professionals in India for promoting the

cause of Radio and TV broadcasting in the country through lectures, seminars, conferences and exhibitions.

5. Computer Society of India (CSI)

It is the largest IT (Information Technology) professionals' society in India for the advancement of the theory and practice of computer science, computer engineering and technology and related arts and sciences.

6. Construction Industry Development Council (CIDC)

It is a body formed jointly by the Planning Commission, Government of India and the Construction Industry. It has been working on several issues since its inception for the benefit of construction industry. CIDC and the Govt. of Canada have joined hands to create an "Indo-Canada Infrastructure Meet".

7. Consultancy Development Centre (CDC)

It was set up in 1986 as a registered society under the Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India to be the national nodal point for activating, catalyzing and invigorating the growth of consultancy profession in the country.

8. Consulting Engineers Association of India (CEAI)

CEAI, an apex body of consulting engineers, aims at promoting the interest and enhancing the status of the Consulting Engineering profession in India, representing the consulting engineering profession within India and abroad and promoting professional interests, rights and privileges of the consulting engineers.

It has signed MOUs with Korea Engineering & Consulting Association (KENCA) and American Council of Engineering Companies (ACEC) for active cooperation.

9. Indian Buildings Congress (IBC)

IBC has been set up with the objective to bring all the professionals on a single platform to form collective opinion on the subjects related to Building Industry for creating a built environment, which is affordable, aesthetic, cost-competitive, technology-driven and capable of meeting the needs of the Indian masses.

10. Indian Concrete Institute (ICI)

ICI has been in service to the concrete industry/professionals since its inception with the main objective of promoting growth of concrete construction and its sub-

specializations including concrete technology and collaborating with national and international agencies in creating better understanding of the concrete construction technology.

11. Indian Geotechnical Society (IGS)

IGS, affiliated to the International Society for Soil Mechanics and Foundation Engg., aims at promoting co-operation amongst engineers and scientists for the advancement and dissemination of knowledge in the fields of soil mechanics, foundation engineering, engg. geology, allied fields and their practical applications.

12. Indian Institution of Bridge Engineers (IIBE)

The objectives of IIBE are to spread practical knowledge of construction of bridges, help bring together expertise available in the field of design & construction of bridges for all types of bridges, collect and document all aspects of technology relevant to bridge engineering and compile/maintain a computerized database on all personalities, firms & companies, standards & research institutions connected with the bridge engineering all over India.

13. Indian Institute of Chemical Engineers (IICChE)

IICChE, an apex professional body of chemical engineering professionals from academia, research institutes and industry in India, has been in its constant pursuit of applying chemical engineering and the principles of allied sciences for human well-being.

14. Indian Institution of Industrial Engineering (IIIE)

IIIE, an apex body of Industrial and Professional Engineers, is dedicated to the advancement of industrial engineering education and practices and is concerned with the design, improvement and installation of integrated systems of men, materials and equipment.

15. Indian National Group of the International Association for Bridge & Structural Engineering (ING-IABSE)

The Government of India, Department of Road Transport & Highways (Roads

Wing) in consultation with the various State Governments set up the Indian National Group (ING) of IABSE. The ING deals with all aspects of planning, design, analysis, detailing, construction, management, operation, maintenance, repair and rehabilitation of structures of all kinds including bridges.

16. Indian Society for Trenchless Technology (IndSTT)

IndSTT has, since its inception, taken several programmes including creating awareness in India amongst the potential user departments for adoption of the trenchless technology which a practical alternative to open trench method.

17. The Institution of Surveyors (India) [IS(I)]

The prime objectives of the Institution has been to secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a surveyor, to promote the professional interests of surveyors and to provide a channel for the expression of collective opinion of surveyors on professional topics.

18. Institute of Urban Transport (India) [IUT(I)]

IUT(I), a premier professional non-profit organization, aims at promoting and encouraging state-of-the-art urban transport by disseminating knowledge in the development of a sustainable, energy-efficient, environment-friendly planned, well-managed and safe transportation system in the country.

19. The International Council of Consultants (ICC)

The ICC has, since its inception, been actively pursuing its objective of providing an opportunity to all the stakeholders associated with the construction industry to make a realistic assessment of the different laws and its impact on the development of the sector.

20. Indian Institute of Metals (IIM)

IIM, an apex and premier body of professional metallurgists having about 10,000 institutional/individual members spread all over India, has been set up with the objective of promoting and advancing the study and practice of the science and

art of making, shaping and treating of metals and alloys. It is working with a number of like-minded international institutions/organizations to achieve its objective.

21. The Institute of Electrical and Electronics Engineers (IEEE)

IEEE acts as a source of technical and professional information, resources and services relating to the aerospace systems, computers and telecommunications, etc. IEEE-India-Council is the umbrella organization which coordinates IEEE activities in India. Its primary aim is to assist and coordinate the activities of local "sections", in order to benefit mutually, and avoid duplication of efforts and resources. IEEE India-Council was established on 20th May, 1976 and is one of the five councils in the Asia Pacific Region (Region #10 of IEEE).

22. The Institute of Marine Engineers (India) [IME(I)]

IME(I), a professional technical body representing the marine engineering profession and allied disciplines in India, was set up in 1982 with the aim of promoting the advancement of the profession by providing a national platform for exchange of technical knowledge on a global basis. The Institute conducts technical seminars and meets on a regular basis for sharing of knowledge and ideas and to familiarize its members with the latest technological developments in the shipping world.

23. The Institution of Electronics and Telecommunication Engineers (IETE)

The IETE, popularly known as I Triple E, is the world's largest professional society spread all over the world. The entire world is divided into 10 regions. India falls in the Region 10 & it alone has more than 400 student branches.

24. Indian Society for Non-destructive Testing (ISNT)

ISNT, set up with the objective of promoting and propagating the art and science of non-destructive testing (NDT), is the sole agency authorized to certify NDT personnel in the country. It is now set to take its rightful place in the international arena with the mission - Global NDT for Global Friendship.



ECI Events during 2006-07

ECI has organized the following Conferences and Conventions

- National Convention on “Seamless Engineering” on August 16, 2006 at Kolkata.

The Kolkata Convention on **Seamless Engineering** was well received by the participants, both from academia and industry. A general view emerged that India needs a change in its traditional content and delivery of the engineering education at the undergraduate level for making it apt to the present times. The subject needs further in-depth discussion.



- The 4th National Conference on “Towards International Competitiveness of Indian Engineers Challenges Ahead” was held on December 15, 2006 at New Delhi. The conference aimed at deliberating on the various issues to develop a strategic framework for bringing the competence of Indian engineers to the level and standards of that of the developed countries. The CPD programme must be designed to meet learners’ needs.

