



**Issues Involved in Registration of Professional Engineers**

Date: January 20, 2004

Venue: India Habitat Centre, Lodhi Road, New Delhi

**PROGRAMME**

**1. Session I: Systems & Procedures for Registration of Professional Engineers**

**Chairman** Prof. Ashoka Chandra, Chairman, ECI  
**Keynote Speaker** Dr. Uddesh Kohli, Member Secretary, ECI  
**Panellists** Mr. S.C. Mehrotra, President, Consulting Civil Engineers of India  
Dr. H. S. Sharma, The Institution of Electronics and  
Telecommunication Engineering  
**Interaction** Main Issues Raised by the Participants

**2. Session II: Role & Formation of National Committees and Application Form**

**Chairman** Prof. D.V. Singh  
**Speaker** Lt. Col. (Retd.) K.K. Chitkara, AVSM, Consultant, ECI  
**Panellists** Mr. J.G. Gupta, President, Broadcasting Engineering Society (India)  
Mr. C. R. Dutta, President, American Society of Civil Engineers, India  
Chapter  
Mr. A.K. Sarkar, President, Indian Society for Trenchless Technology  
**Interaction** Main Issues Raised by the Participants

**3. Session III: CPD Issues: Competency Development of Engineers**

**Chairman** Prof. G.P. Lal  
**Speaker** Mr. Pradeep Chaturvedi  
**Panellists** Dr. R. Jagadish, President, Association of Consulting Civil Engineers (India)  
Mr. D. P. Mishra, President, Indian Institute of Chemical Engineers  
**Interaction** Main Issues Raised by the Participants  
**Workshop**  
**Summing Up** Prof. M. K. Khanijo, Senior Consultant, ECI.



## **SYSTEMS & PROCEDURES FOR REGISTRATION OF PROFESSIONAL ENGINEERS**

### **1.1 INAUGURAL ADDRESS: PROF ASHOKA CHANDRA, CHAIRMAN, ECI**

ECI was formed for a set of objectives, the most basic among them being the registration of professional engineers and the maintenance of a National Register of Professional Engineers. Soon after ECI was formed, it set up a number of Committees for making recommendations on such aspects as registration, continuing professional development (CPD) and code of ethics. Based on the reports of these Committees, a detailed set of systems and procedures has been formulated. Issues involved in operationalising the registration process of Professional Engineers in accordance with the proposed systems and procedures will form the subject of discussion in this Workshop.

In its endeavour to develop the registration system, ECI has consulted 25 engineering professional societies, who are members of the ECI. In this Workshop, these member associations are participating actively. The Chairmen/Presidents of some of the member associations will be addressing the Workshop in various sessions. While acknowledging their contribution and assistance, ECI is confident that they will continue to extend their support and facilitate the implementation of the registration process by ECI.

ECI is conscious of the impact of globalisation on engineering services. Accordingly, ECI took up the issue of recognition of its registration by other countries on an urgent basis. A comprehensive application was prepared for seeking the membership of the Engineers Mobility Forum. In June 2003, a joint presentation was made to EMF by ECI and the Institution of Engineers (India). You will be happy to know that the case made out by ECI and IE(I) was accepted giving India a provisional membership of EMF. Once the registration system is operationalised, EMF will consider converting provisional membership to a regular one. At the moment, the membership is in the name of IE(I). As per mutual agreement between ECI and IE(I), the membership will pass on to ECI as soon as it gets the approval of the government. Thus, for various reasons, it is important to establish the registration system as early as possible.

ECI has also been engaged in drafting an Engineers Bill so as to pave the way for giving the engineering profession a legal status and making registration of professional engineers mandatory. There were differences of opinion on certain issues relating to the Bill amongst the professional societies before the formation of ECI. As a result, the government could not take a view till a consensus was evolved on the Bill. ECI was able

to bring the professional societies together in a Committee and came up with a draft which had the general acceptance of the Committee Members. The draft is at the stage of approval of the Board. With the passing of the Bill by the Parliament, the registration system will get the sanctity we are aiming at, and give the engineering community its rightful place and standing as a profession.

ECI has been in existence for barely two years. It has done a significant amount of work during this period, thanks to the co-operation and support of its member associations. The deliberations of this Workshop and its valuable advice and recommendations will help ECI in giving a final shape to the proposed registration process.

## **1.2 PRESENTATION BY DR. UDDESH KOHLI**

If our engineers or their work have to be accepted in other countries, it is necessary that we have the systems for registration in India on the same lines as is being done by Engineers Mobility Forum (EMF). The 'System and Procedures' developed by the ECI, which are outlined in the subsequent Slides, are in conformity with the EMF requirements.

### **1.2.1 EMF Guidelines for International Professional Engineers**

- Engineering degree
- Seven years experience
- Two years in responsible charge
- CPD at a satisfactory level.
- Competency – based assessment

### **1.2.2 ECI Requirements for Registration as PE**

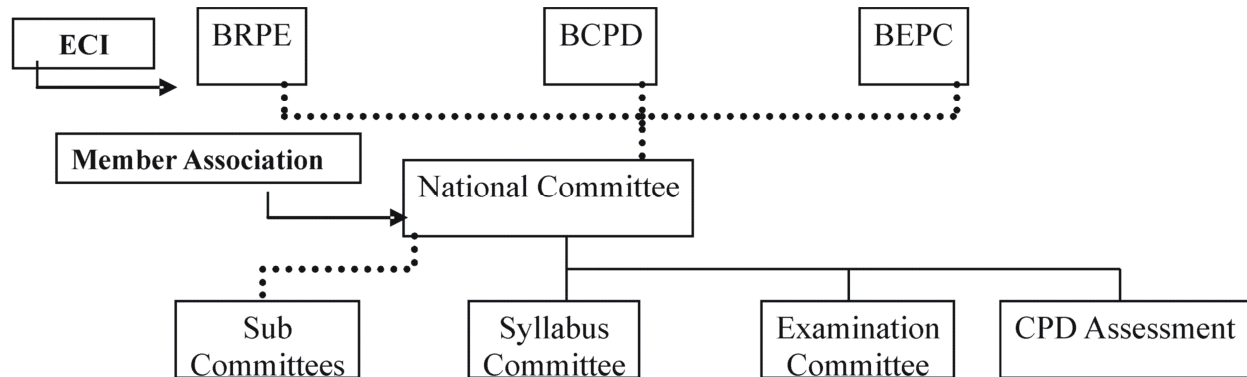
- Bachelors' Degree in Engineering/ Technology or equivalent
- Experience of 7 years as an Engineer, 2 years in responsible charge\*
- Person of good character
- Passed written examination(s)
- Satisfactory Continuing Professional Development (CPD)
- Adhere to Code of Ethics

### **1.2.3 Credit for Higher Education in Experience for PE**

- years for postgraduate engineering degree
- years for Ph.D. in engineering

- Maximum exemption 3 years

#### 1.2.4 Organisation Structure for Registration Process



*Note: For wide and varied discipline like civil engineering, National Committee may form Sub-Committees for various sub-disciplines.*

#### \*Responsible Charge

It means the experiences in which the engineer undertakes work involving responsibility such as:

- execution of activities relating to planning, designing, management, supervision, and coordination of comparatively small-scale engineering activities,
- coordination of activities with other departments in comparatively large-scale engineering activities,
- Participation in execution of activities of multi-discipline complex projects.

#### 1.2.5 Functions of Board for Registration of Professional Engineers (BRPE)

- Lay down policy, criteria and standards, procedures, forms, fee, etc.
- Concurrence for National Committees
- Decision on Registration of PE and issue of Certificate
- Re-registration after 5 years
- Nominate one member to each National Committee

#### 1.2.6 Engineering Disciplines

- Civil
- Textile
- Electrical Engineering
- Agricultural
- Electronics and Telecommunication
- Production

- Computer
- Environmental
- Chemical
- Mechanical
- Metallurgy & Material Sciences
- Bio- Engineering
- Mining
- Architectural
- Aerospace /Aeronautical
- Industrial
- Marine
- Petroleum

Additional Disciplines may be added by BRPE

### **1.2.7 Assessment Procedure for PEs**

#### 1.2.7.1 Assessment through:

- I. Written Examination
- II. Evaluation of CPD

#### 1.2.7.2 Written Examination in two parts

- I. Examination 1: Fundamentals of Engineering
- II. Examination 2: Practice of Engineering

(Examinations to be held at least once a year)

### **1.2.8 Exemption from the Written Examination**

- Examination- 1: Graduates from National/Accredited Institutions
- Examinations 1 & 2: Engineers with 15 years experience (5 Years in a senior position)

### **1.2.9 Evaluation of CPD (Pre-registration) by concerned National Committee**

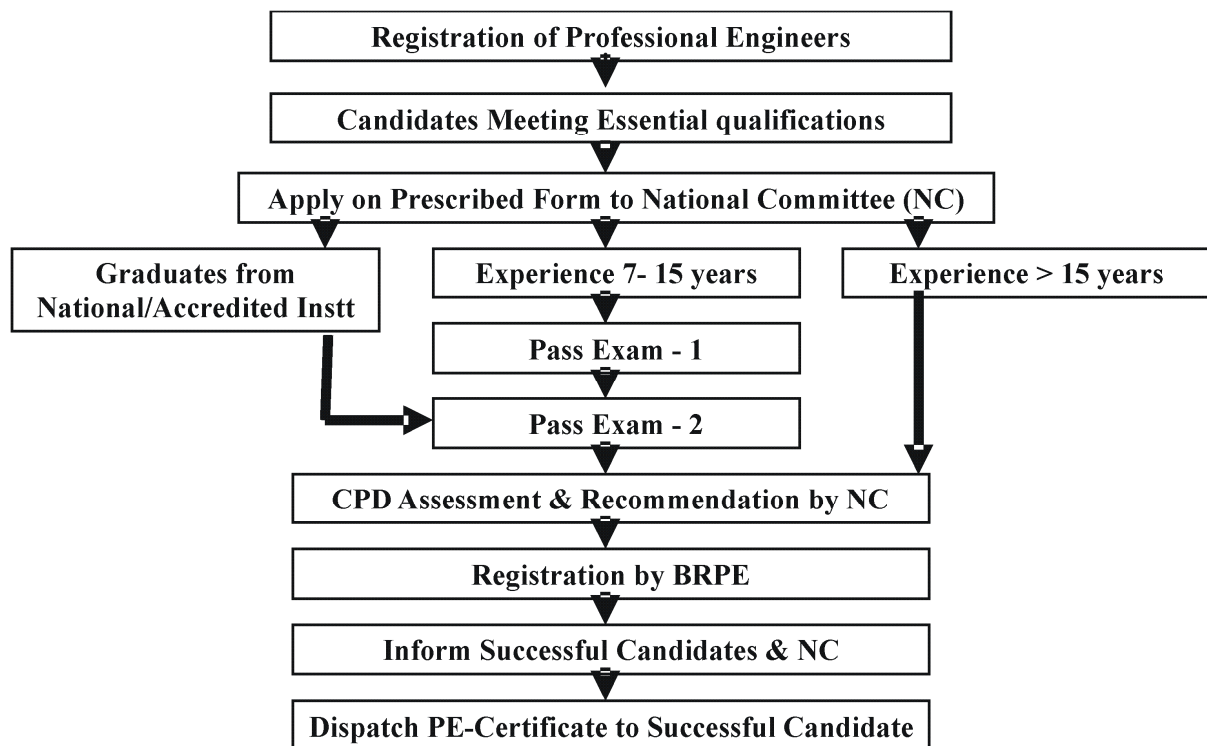
- Candidate's Report and Record of experience.
- Evaluating relevance of learning to the profession
- May include Candidate's interview

### **1.2.10 Professional Engineer Registration Validity**

- Initial Registration valid for five years.
- Re-registration after 5 years -on Evaluation of CPD

**1.2.11 Privileges of the Professional Engineer**

- To undertake independent practice
- To certify an engineering drawing / design / process / product / system / costs / time schedule / resources
- To certify adequacy of safety measures and environmental protection
- To certify quality of product process in accordance with the design

**1.2.12 Process of Registration of PE's****1.2.13 Pre-Requisites for the Registration as Associate Professional Engineer (APE)**

- Bachelors' Degree in Engineering/ Technology equivalent.
- Person of good character
- Adhere to Code of Ethics

**1.3 MAIN ISSUES RAISED BY THE PARTICIPANTS****1.3.1 Exemption**

- i. The Exemption for the graduate engineers with 15 years of experience (5 years in a responsible position), who are active in the engineering profession, should be given only for a limited period, say 2 years.
- ii. All engineers above the age of 55 years, who are 'Fellows' of the professional engineering bodies, should be enrolled as PE without examinations/ further assessment.
- iii. The exemption for IIT/ NIT graduates from Examination 1 may lead to discrimination which should be avoided.

**1.3.2 Examinations: The examinations should be held at least twice or thrice every year**

- 1.3.3 Experience: Experience should be related with the discipline. For example, in fast changing technological sector such as IT, 7 years experience is too long compared with 7 years experience in other engineering disciplines.
- 1.3.4 CPD: Some specific courses for CPD should be developed for different disciplines which would encourage the engineers to go for CPD.
- 1.3.5 Registration of PE: Two sets of registers should be maintained i.e. one for the National and the other for International. Initially the focus should be on registration of PEs for National Register and this registration should start immediately.
- 1.3.6 APE: Full form of APE should be "Apprentice Professional Engineer" instead of Associate Professional Engineer (as at present).
- 1.3.7 Engineer Bill: We should move the Engineer Bill at the earliest.
- 1.3.8 Ethics and Value System: Professional ethics and practice should be included as a subject in the curriculum of engineering colleges.

**1.4 SESSION PANELLISTS' RESPONSE**

- 1.4.1 PE Register. Right now ECI is working only for the National register. International register can be taken up only when we get the full membership of the EMF, which is not expected before June 2005. During this period, the representatives from EMF would come to India to see the implementation of the systems and procedures and its conformity to the EMF standards.



- 1.4.2 Examination: Being in the international arena of professional engineers, we have to adhere to the EMF standards where proper assessment is mandatory. As a part of Washington Accord, there will be assessment of the standards of engineering education in colleges, which, in the long run would have to meet the international standards.
- 1.4.3 Engineers Bill: The Engineers' Bill, when enacted will make the registration of PE as mandatory. For this a lot of work has already been done on drafting the Engineers' Bill. There is broad agreement among most of the Member Associations. There are some differences; which are being sorted out, after which the draft Engineers Bill will be presented to the government for further processing.

## 1.5 CONCLUSION

It is desirable that the national level registration should start immediately. There should be only one body, namely ECI, for registration of professional engineers so as to avoid confusion while going in the international arena. However, the conduct of examination, assessment of CPD, etc for a large number of engineers will have to be undertaken by the member associations for concerned disciplines with BRPE being the approving authority. BRPE and the National Committees should be set up without delay so as to start the registration process.



## **ROLE & FORMATION OF NATIONAL COMMITTEES AND APPLICATION FORM FOR REGISTRATION**

### **2.1 PRESENTATION BY LT. COL (RETD.) K. K. CHITKARA, AVSM**

Registration of Professional Engineers involves number of processes. These processes are complex. To quote as example, Australia (a member of EMF) over a period of eight years starting from 1994 to 2002, hardly registered 10000 Professional Engineers. In case of India, the registration of PE is going to be more complex specially when we have 1.5 million engineers, 1265 engineering institutes and their intake is around 4 lakhs students per year in various engineering discipline. Focus of this session is on the Role and Formation of 'National Committees', which are to be assigned with the task of managing the process of Registration of Professional Engineers. These aspects are outlined below:

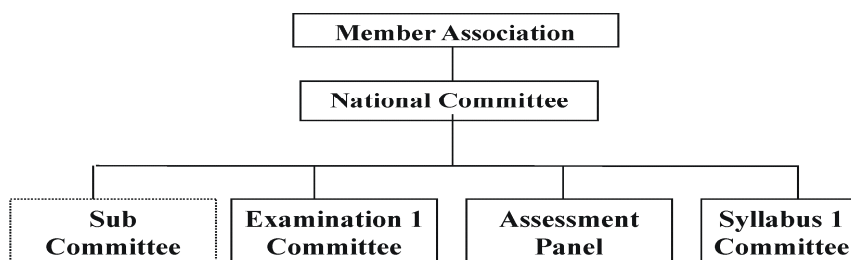
#### **2.1.1 Role of National Committee**

To manage all the processes concerning registration of Professional Engineer.

#### **2.1.2 Functions of the National Committee**

- Processing applications of candidates for PE
- Conducting Examinations
- Evaluating Continuing Professional Development (CPD)
- Recommending suitable candidates for Registration as PEs
- Maintaining Database of PE
- Evaluating CPD of PEs for Renewal of Registration

#### **2.1.3 Typical Organisation of a National Committee (One per Engineering discipline)**



**2.1.4 Composition of National Committee**

<b>Committee</b>	<b>Chairman</b>	<b>Members</b>
National Committee	1	5
Syllabus Committee for Examination 1	1	5
Examination Committee	1	5
CPD Assessment Panel	1	2-4

**2.1.5 Examination 1 Committee**

- Process application of candidates
- Establish sub-Committees for sub-discipline/ specialisations (where necessary)
- Appoint experts for Examination-1 question papers
- Supervise conduct of Examinations 1 & 2
- Appoint examiners to evaluate Examination-1
- Process evaluation of Examination-1
- Forward names of successful candidates to BRPE

**2.1.6 Syllabus 1 Committee**

- Prepare Syllabus of the assigned engineering discipline/ sub-discipline/ specialization
- Forward Syllabus to Examination Committee
- Make changes in Syllabus, when necessary

**2.1.7 CPD Assessment Panel**

- Conduct peer evaluation by assessing reported experiences of the candidates, who have passed the prescribed examination
- Interview candidates, as necessary
- Forward recommendations to National Committee

Note: Where necessary National Committee itself may function as CPD Assessment Panel

**2.1.8 Examination 2 Committee**

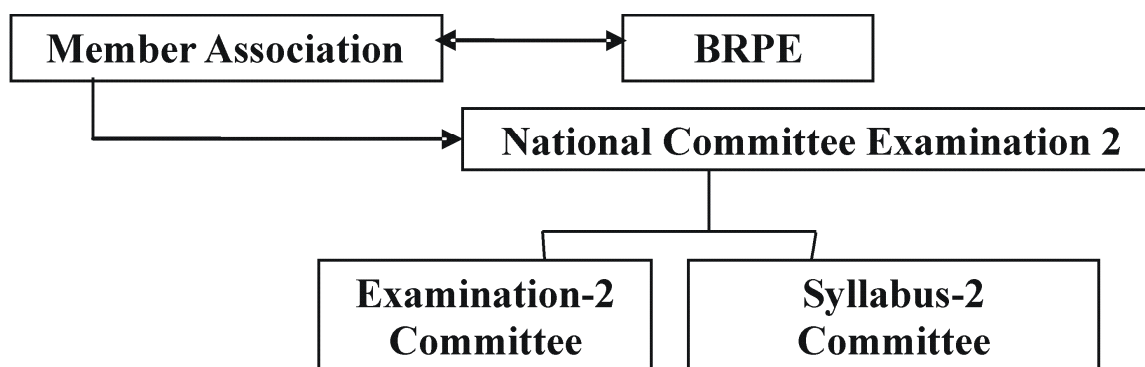
- Appoint experts for written examination question paper for Examination 2, common to all disciplines and candidates
- Appoint examiners of Examination 2

- Process evaluation of Examination
- Forward names of successful candidates to National Committee

### 2.1.9 Syllabus 2 Committee

- Prepare Syllabus for Examination 2, common to all candidates
- Forward Syllabus to Examination Committee
- Make changes in Syllabus, when necessary

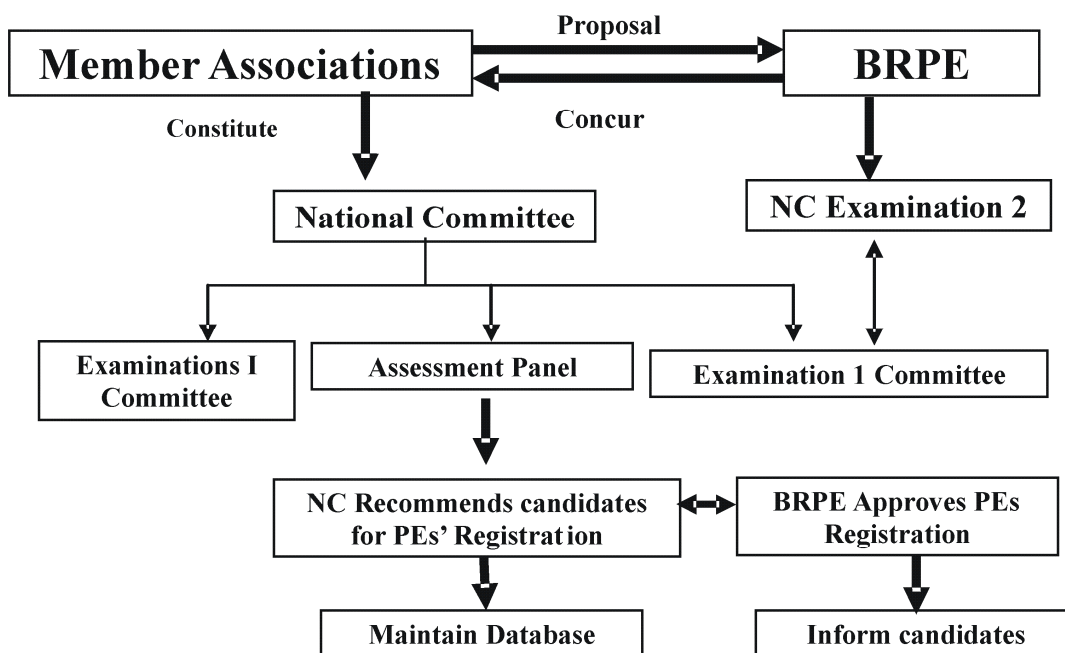
### 2.1.10 Organisation of Examination-2 National Committee



### 2.1.11 Formation of National Committee

- Member Associations submit proposal to BRPE
- BRPE communicates concurrence
- Member Associations constitute National Committees
- BRPE appoints one member as his/her representative for each National Committee
- Chairman National Committee constitutes Syllabus-1, Examination-1 and CPD Committees
- BRPE appoints Chairman of Examination-2 Committee and Syllabus-2 Committees, in consultation with all the National Committees
- BRPE establishes National Committee (s), for disciplines not represented by Member Associations

**2.1.12 National Committee Process Flow Diagram**



**2.1.13 Application Form Contents**

**Part I: To be filled in by the applicants**

- Personal Particulars
- Engineering Qualification (s) for Registration, Graduation
- CPD activities since Engineering graduation or last six years
- Professional Experience
- Desired discipline / field of specialization
- Registration Fee (as prescribed)

**2.1.14 Part II: To be completed by National Committee**

- Passed Professional Engineers Examination, conducted by Member Associations
- Experience Assessment, including Continuing Professional Development
- Recommendations for Registration as Professional Engineer

**2.1.15 PART-III: To be completed by BRPE**

- Verification

**2.1.16 Attachments with Application Form**

- Technical Disciplines and Fields of Sub-discipline / Specialisation
- ECI Code of Ethics
- Instructions for completing the Application Form

**2.2 MAIN ISSUES RAISED BY THE PARTICIPANTS****2.2.1 Organisation of National Committees**

- ECI has called the National Committee of the member associations as the main body for assessment for registration of the professional engineers, then why have BRPE, a bureaucratic organisation between ECI and the National Committees?
- In case of civil engineering, more than 50% of the sub disciplines are not covered by the member associations of the ECI. Therefore, formation of a National Committee for civil engineering and other such disciplines requires more detailed guidelines.
- The Institute of Surveyors is one of the Member Associations of ECI and Surveying has got many sub-disciplines like land surveying, mine surveying, quantities surveying etc. Such institutions require separate sub Committees to take care of examination or registration aspect. How does the ECI propose to tackle such a case by making one National Committee per proposed discipline?

2.2.2 Process of Registration: We should not rule out the Diploma-Holders from acquiring the status of PE, if they have demonstrated professionalism adequately. A suitable provision for such cases should be included in the ECI's Systems & Procedures after scrutiny of their professional records.

2.2.3 Exemption from Examination: Members of the professional bodies like of Institution of Engineers (India), having more than 15 years experience, should be exempted from examinations and should be enrolled as a professional engineer with ECI, after scrutiny of records and interview (if necessary).

**2.2.4 Examinations**

- The name of examination 1- Fundamentals of Engineering is misleading; it should be titled as 'Examination 1 for Licensing to Practice Profession'
- Examination-1 should not be limited to the fundamentals of engineering, but should also include the code of practices.

- A person is working in a particular line and has specialised in that field. How will he/she be tested in his specialised field for the competency after six years and will there be a separate paper on specialisation in Examination-2.
- 2.2.5 **Syllabus Committee:** What will be the frequency of review or will there be a time limit for reviewing the syllabus?
- 2.2.6 Applications: Application for PE should be submitted through internet and even Examination should be internet based as done in many other areas.
- 2.2.7 Exemptions for Engineers with at least 15 years of experience: It should be one time affair, say after a period of three years, examination should be made mandatory for all.
- 2.2.8 **Registration of Engineers in Government Service:** The system of registration, re-registration and CPD development should be exempted for the engineers working in aviation, marine, defence services, etc as they already have examinations and CPD to conform to their professional requirements.

### **2.3 SESSION PANELLISTS' RESPONSE**

- 2.3.1 **Formation of National Committees:** Actually, there were many points, which were stressed concerning the formation of National Committee for each discipline; these have been noted. These are to be considered by the BRPE, when formed. Their decisions will not be arbitrary; everything will be done through the consultation process as decided in the Board of Governor and Executive Committee of ECI.
- 2.3.2 **Process of Registration:** There are two situations, one situation is the National and the other is International. In the National Register, we have to consider when there is no law and when the law comes. When the law comes we have to go by the law. The recommended clause in the law specifies that no engineer can practice if he/ she is not registered as PE. The proposed draft of Law also provides that the government can exempt certain areas like government departments, like the armed forces and other organisations where the departmental examinations are conducted and CPD as part of the professional development process.

We must also understand that the passing of the law will not take less than 1-2 years. Before the law comes, as professionals, we should start the registration of PE at national level as per ECI 'Systems and Procedures'.

- 2.3.3 **Workload for Registration of PEs:** Registration is only for those engineers, who are aspiring to practice as professional engineers and every graduate engineer may not be practising as a professional engineer. But still the conduct of examinations and evaluation of CPD for those aspiring to be PE's is a very huge task. In order to reduce the effort, as suggested, BRPE / National Committee can consider development of a system of preliminary screening prior to interviews to advice such candidates if they have not maintained CPD. Further applications can also be promptly scrutinised and the response communicated to the candidates, if these are received online.
- 2.3.4 **Examination:** As the bottom line, we are trying that our systems should be at par with the international procedure and there is no going back from that. Examination for professional engineer is a must because the levels of education which institutions impart are not of the same level what the profession needs. It is the basic requirement of the EMF. So far exemptions are concerned; we have to look very carefully.

## **2.4 CONCLUSION**

National Committees are the backbone of the Systems and Procedures for Registration of Professional Engineers developed by ECI. The most important aspect is the setting up and management of the National Committees; these are the responsibility of the Member Associations. In the emerging international situation under WTO, National Committees must ensure that the quality of registration of professional engineers in India is at par with the international standards like those of EMF countries. It is therefore essential that National Committee function as stipulated in ECI's Systems and Procedures.

## **CPD ISSUES: COMPETENCY DEVELOPMENT OF ENGINEERS**

### **3.1 PRESENTATION BY MR. PRADEEP CHATURVEDI**

In the fast changing technology and with the emerging of the EMF, there is far greater emphasis on Continuing Professional Development (CPD) than it was earlier. An expert Committee headed by Prof. C. S. Jha, was set up by ECI to go into the CPD for the PE. This presentation covers the salient points of this Committee's Report.

#### **3.1.1 Tasks**

- Certify the competence of engineers
- Certify the competence of the consultancy organizations
- Integrate continuous development programmes
- Lay down norms of professional conduct
- Participate in international networks

#### **3.1.2 Competency Development of Professional Engineers**

##### **Overview**

- What does Competency Development Imply?
- Role and Functions in Competency Development
- Nature of CPD activities
- CPD evaluation methodology
- Criteria for Registration of CPD Agencies
- CPD Database

#### **3.1.3 Competency Development**

What does it imply?

Competency: Knowledge, skills and attitude

Development: Implies enhancing competency

#### **3.1.4 CPD Activities**

- Development of competency in measurement standards
- Providing information about learning opportunities
- Registering institutes and establishments



- Specifying methods for evaluation and monitoring
- Maintaining CPD Database

**3.1.5 Expected Performance Capability**

- Ability to apply Engineering Knowledge in analysing and solving engineering problems
- Ability to provide technical and managerial leadership
- Understanding of sustained development of issues and service to society
- Use of effective communication and interpersonal skills
- Commitment to Code of Ethics
- CPD demonstrated through application of engineering knowledge and on-the job experience

**3.1.6 Registration Validity**

- Initial registration valid for five years
- Re-registration after five years on evaluation of CPD
- Criteria for renewal of registration : Atleast 250 credit hours

**3.1.7 CPD Activities**

- Education upgrade
- On-the-job training and in-house presentations
- Writing technical paper/articles, research reports and books
- Attendance at Seminars on education / knowledge
- Attendance at Workshops with focus on professional skills building training
- Attendance at meetings of technical or professional organizations
- Working on Task Forces, Committees and Review Teams on Codes and Standards
- Undertaking Thesis leading to Ph D
- Writing research proposals
- Preparing design submissions
- Mentoring
- Giving lectures at conferences

**3.1.8 Accreditation of Training Organisations**

- CPD providers to have identified group for development and administration of programme
- CPD providers may provide ECI with information on registry of the programme
- ECI may approve specific programme of the service providers

**3.1.9 Criteria for Accreditation of CPD Training Programme**

- Must be designed to meet learner’s needs
- Must specify its objectives and how will it benefit the learner
- Must be planned by professionally competent instructors
- Must have a mechanism to demonstrate effectiveness of planned learning outcomes
- Must have a systematic evaluation procedure to enable improvements where needed
- Must have in-built support system

**3.1.10 PE-CPD Database**

- BDPE (Board for Development of Professional Engineer) shall maintain a confidential database of CPD activities of registered PEs
- Individuals shall be provided with a transcript of formal record of their CPD on request
- Records shall be maintained upto 2 years after the registration validity period of PE

**3.1.11 CPD Evaluation Methodology**

Classification	Applicable CPD program	Weightage	Applicable Hours	Remarks
Professional Practice	Practical experience significant and “in responsible post”	1/10	Actual hours of activities	Limit: Total 150 hours/ 5 years
Formal education upgrade	Doctorate	2	60	Limit =120 hours for 5 years.
	PG Degree	2	50	
	PG Diploma	2	40	
	PG Distance learning.	1	40	
	Author Books	2	60	
Participation, Presentation papers and other activities	Training and development programmes	1	Actual hours of attendance	-
	CPD related lectures, symposium, in-house training, studying tour, National and International Conferences etc.	0.5	Actual hours of attendance	-
	Lecturer or Symposium Panelist	2	Actual lecture hours	Lecture excludes routine teaching at institutions.
	Academic meeting	1	Hours spent at an academic meeting	
	Writing thesis, technical reports and others	1	Actual hours to write a report	Limit =20 hours per year
	Attending a Committee etc	1	Hours of	Applies where

			attendance	an applicant participates in active discussions
Social contribution	Activities such as emergency works in flood relief's, earthquake hit areas, fire fighting etc.	1	Hours spent for social contribution	-

#### 3.1.12 Mechanism for CPD Assessment

- Aggregate credit hours required = 250 hours within validity period, where- Credit hours= Actual hours of CPD x Weightage Factor
- Candidates to appear for interview, if required
- Unsuccessful PEs can reapply after further CPD.

#### 3.1.13 Implementation Mechanism of CPD

- Member Association shall constitute National Committees
- Each National Committee shall be responsible for facilitation and assessment of CPD
- National Committee shall consist of one Chairman and 5 Members
- National Committees shall be responsible also for processing the applications for re-registration
- Each member association shall maintain a local data base of all their members

#### 3.1.14 Redress of Grievances

- Grievance affecting adversely a candidate to be sent to the Chairman of ECI
- The matter to be considered by Appellate Body to be set up by ECI

### 3.2 MAIN ISSUES RAISED BY THE PARTICIPANTS

3.2.1 **CPD Delivery:** CPD programme are to be done in an organised manner by the professional agencies and member associations. They can develop capsules for professional development. It is therefore essential that ECI should issue guidelines on CPD development methodology, and identify and register the right kind of organisations and institutions where these programmes should be conducted.

3.2.2 **CPD Credit Hours:** Credit in hours should also be given to the candidates for fostering industry-university participation, and to those who are active in CPD delivery programme. Importance of IPR and environment has increased and these should be included in CPD credit points. Social psychology should also be included.

**3.3 WORKSHOP SUMMING UP BY PROF. M.K. KHANIJO**

- 3.3.1 ECI has proposed a system of registration of engineers which is different from the registration of other professions like Doctors, Chartered Accountants, and others, where registration is essentially qualification-based, whereas in our professional registration, emphasis is much more on the quality of expertise developed and the CPD.
- 3.3.2 One of the issues raised was that we have a large number of engineers, about 15 Lakhs, and close to 3 lakhs are coming out of the colleges every year. How we are going to deal such a task? It was clarified that not all the engineers would be seeking registration especially in the present situation, when we don't have an Act and it is not mandatory to register as a professional engineer. After the Engineers Bill is passed, then we will have to handle large numbers.
- 3.3.3 There were also questions raised that major industries and employers are not being associated in the work of ECI. The fact is that the Committees formed by ECI had many engineers from the industry, and also in the proposed Bill there is a provision for associating the industries and other organisations in the fields of education, research and development, major employing ministries, state governments, in the bodies of ECI.
- 3.3.4 Issues were raised regarding those who have science degrees and they go for M.Tech and other engineering qualifications and also about IT graduates. There were many questions regarding the exemptions, exemption from examination-1, from both the examinations, for people having 15 years or more experience, whether exemptions should be given or not, should Examination-2 be compulsory for everyone. These points have been noted and the situations can be resolved in due course.
- 3.3.5 A point was raised that engineers working in some engineering organisations in the country e.g. Aviation, Defence, which have their own training, testing and evaluation methodologies, should be exempted from the examinations and directly registered as professional engineers. These are very specific issues where there can be no general answer and these can be examined by the BRPE.
- 3.3.6 CPD related training programmes, conferences etc. are being organised by technical institutions and other professional bodies. ECI must identify the gaps. Also it may approve such CPD programmes and the delivery organisations. Another issue is that there are large numbers of professional societies which will be carrying out exams, assessing CPD, and so on. Do we have a mechanism to coordinate their working and to monitor their work in accordance with the stipulated standards? This is another issue which will have to be looked into.

**3.4 CONCLUDING REMARKS BY SESSION CHAIRMAN**

ECI is a body consisting of many professional societies, constituted for the professional development of engineers. CPD is done by means of seminars, conferences or organisation of short term courses or long term courses. The knowledge has no boundaries. New disciplines and



developments are coming in so the CPD of existing engineers is a must and is necessary to meet the demands of today. Industries will have to be involved in this and in this direction ECI has done a lot of work and more work will have to be done. However, this will need updating regularly. It was rightly said that today engineers are not only concerned with engineering practice, but they have responsibility to the society. We have to take care of the social needs and the environment. In this Workshop some important points have been raised and more may come up during implementation of the System of Registration. ECI would look into these and take appropriate decisions in consultation with the Member Associations.

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