Professional Engineer’s Roles And Responsibility In Nigeria

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Abstract: Engineering which is the application of science and technology is a wide discipline that the professional must be well informed and this discipline is very important to the development of human beings. This paper is written to open the eyes of the profession Engineers and others in the families in the discipline of engineering and the functions of each cadre in this family, the obligations of the Engineer to various people and his organization. It also talked about the formation of Nigeria Society of Engineers (N.S.E.), the objectives of the society and basic requirement to be a member of the organization. Similarly, it went further to talked about highest body controlling engineering activities in Nigeria which is Council for the Regulation of Engineering Practices in Nigeria (COREN) and its duties. The paper also talked about the progression in engineering. Lastly, it talked about the responsibilities of a registered Engineer to the profession and relation among registered Engineers.

I. WHAT IS ENGINEERING?

Engineering is application of science and technology. Engineering brings about the utilization of materials and laws of nature for good of humanity. Tregold describes Engineering as the art of directing the great sources of power in nature.

Engineering activities are those which make the resources of nature available in a form beneficial to man and also involve the provision of systems which perform optimally and economically. Engineering is also involved in analysis and application of scientific developments, keeping the individual in mind as the measure of technological benefit. The most adopted definition of Engineering is the art or science of utilizing, directing or instructing others in the utilization of the principles, forces, properties and substances of natures in the production, manufacture, construction, operation and use of things or means, methods, machines, devices and structures by Kiddle(1920).

Engineering is based on the fundamental sciences. Science is accumulated, established and systemized knowledge. Engineering required ingenuity, craftsmanship, and judgment in adopting knowledge to practical purposes. The major engineering functions include: Research, development and design, construction, production, operation, application and sales, and management.

II. WHO IS AN ENGINEER?

An engineer is a person qualified by aptitude, education and experience to perform engineering functions. Aptitude refers to a capacity for work in a particular field. An engineer must proffer solution to abstract problems which involves design, performance and efficiency and cost Engineers whose function is to apply science to the economics fulfillment of human needs and desires. He must be it unto technically terms applies available technology to obtain a practical solution and communicate these facts to his fellow men. These procedures can be carried only by a highly-educated, thinking individual working with a well coordinated and cooperating team of technicians who can covert the Engineer’s ideas and discoveries into useful products and services. Such a team is made up of the average of one engineer and 7 Technicians (Onipede, 2004). He must have the ability to supervise the work of others and in due time, the maturity to assume responsibility for the direction of important tasks, including profitable management of industrial and commercial enterprises.

A. OTHERS IN THE FAMILIES OF ENGINEERING ARE

An engineer is usually a member of a versatile team encompassing different fields that possess skills and
knowledge. The council for the Regulation of Engineering practice in Nigeria (Coren) allows registration under the following cadres.

a. **ENGINEERING TECHNOLOGISTS**

They are trained at the Higher National Diploma level in Polytechnic. Fundamentally, the nature of posts occupied by technologists demand a practical approach and a detailed understanding of a particular technology. They require specific and detailed knowledge of the bases and practices of current technology and are concerned with maintaining existing technology efficiently. They must be competent by education and training. He is to exercise technical judgment in and assume duties in the engineering field.

b. **THE TECHNICIANS**

They acquire trainings through semi-formal education; products of Technical Secondary Schools, Monotechnics and polytechnics up to the ordinary National Diploma level are trained technicians. They are usually under the guidance of Engineers and Engineering Technologists. They are qualified by virtue of their education to apply proven techniques and procedures to the solutions of practical problems with an element of personal responsibility.

c. **CRAFTSMAN/ARTISAN**

A Craftsman /Artisan normally acquires training through practical and informal or formal means, as an apprentice under a trained craftsman in a specialized workshop or a specialized craft School/Vocation training Centre .Categories of Craftsmen include Blacksmiths, automobile mechanics, Masons etc. His primary role within the profession shall include the responsibility for the execution of specific projects, and also providing the essential support for engineering Technician where appropriate.

III. ENGINEER’S OBLIGATION

If an Engineer discovers that there is likelihood of a possible risk to others from the failure of his client or employer to follow the Engineer’s direction, he has a duty to report such an issue to the appropriate authority. Failure to report such an issue could lead to revocation of the Engineer’s practicing license. A way around the dilemma is for the engineer to issue advice to the concerned client and/or employer and insist on compliance, failure to which he /she makes the situation public by reporting to the appropriate authorities. COREN regulates the practice of Engineering in Nigeria and such matters should be referred to the body (Wara S.T., 2011).

IV. FORMATION OF NIGERIAN SOCIETY OF ENGINEERS (N.S.E)

The formation started in London by a group of Nigerian young Engineers of this association called Nigeria Society of Engineers presented Nigerian practicing Engineers with hard choices because many of them were Civil Servants who were seeking to become registered with British Institutions of Engineers (BIE). Their membership of BIE was already being moderated by the West African Joint Group of Engineers(WAJGE). Their professional status and career depended on their membership of BIE and WAJGE. They could only be promoted as Engineer Grade 1 after becoming a corporate member of BIE and WAJGE. Although, some refused and damned the consequences.

NSE started witnessing improvement with reconstitution in 1959 and Chief Adeniyi Williams becoming the president. During the inaugural meeting, the formation aims of the society were stated simply as:

- To promote, encourage and maintain a high standard of engineering study and practice
- To enhance the professional organizations through the world.

Today, the Nigeria Society of Engineers has grown strong to become a professional Engineering body dedicated to the promotion of knowledge of engineering and practical application of such knowledge by its member. It has the responsibility to provide appropriate support and guidance for new engineering graduates to attain such level of professionalism in Engineering that will enable them to be admitted as full member of the NSE. The Society promotes and enforces standard of professional conducts and ethics in the practice of engineering.

A. OBJECTIVES OF THE SOCIETY

These are some of the objectives of the Association and not limited to the following:

- To provide a central organization for the Engineers in Nigeria and generally to do such things as many from time to time necessary to maintain a strict standard of professional ethics amongst its member and to advance the interests of the engineering profession in Nigeria.
- To promote, protect, encourage and maintain a high standard of engineering study and practice and to encourage great efficiency.
- To present to the Government in Nigeria the views of the society on any subject of concern or interest to Engineers in Nigeria.
- To watch over, promote and protect the mutual interest of its member and to give advice to members.
- To study and resolve the professional problems confronting its members.
- To promote and enforce a high standard of performance and professional ethics among its members e.t.c.

B. MEMBERSHIP REQUIREMENTS

The membership requirement depends on the education and training the person seeking to join the association has
There are six grades any person aspiring to be a member of Nigerian Society of Engineers can apply for. The grades are namely: Fellow, Honorary, Corporate, Graduate, Associate and Student member.

Only corporate members and fellows are entitled to vote and be voted for at properly constituted meetings of the society. A person seeking to join the N.S.E shall fill the application form. An application form must normally sponsor by two financial members who must be corporate members or fellows. All candidates shall be tested orally and present also their post graduate qualification/gradation experience report and other conditions stated by association.

V. COUNCIL FOR THE REGULATION OF ENGINEERING PRACTICES IN NIGERIA (COREN)

The only Engineering body established by the Federal Government of Nigeria and representing the Government. This body is the highest Engineering Council in Nigeria and it was established by decree no 55 of 1970.

A. DUTIES OF THIS BODY

These are some of the duties and responsibilities of the body:
- Determining who are engineers for the purpose of this decree
- Determining what standards of knowledge and skills are to be attained by persons seeking to become registered as engineers and raising standards from time to time circumstance may permit
- Securing in accordance with the provision of this decree the establishment and maintenance of a register of persons entitled to practice as registered engineers and the publication form from time to time of lists of those persons
- Performing the other functions conferred on the council by this decree.
- Regulating and controlling the practice of engineering profession in all its aspects and ramifications.

Others are: Approval of courses, qualifications and accreditation of institution for Engineering programs, supervision of institutions and examinations leading to approval qualifications and maintain profession discipline. This body identified four Cadres in Engineering. The experiences required to join this body are stated in their website and brochure and may be changed and modified any time they wish.

VI. PROGRESSION WITHIN THE PROFESSION

COREN is aware of various educational means that are opened to people in Nigeria and therefore makes allowance for anybody that want to pass through various routes that are provided by registration in addition to standard route through University degree program, council accepts the various route OND, HND and a pass at the Nigerian Society of Engineers Graduateship examinations.

There is advancement from one section of the register to the other for those who desire progressive career opportunities. The council always encourages educational and professional institutions and others to provide opportunities for studies and examination that enable individuals advance in the profession as follows:
- A Craftsman may apply to transfer to Technician if he has obtained the ordinary National Diploma Certificate or approved equivalent educational qualification and the required working experience.
- Technician may apply to register Technologist if he has obtained the Higher National Diploma Certificate or he has completed an equivalent approved course and the required working experience.
- A Technologist may apply to transfer his service to that of a registered Engineer if he has passed the examination conducted by the council, the academic content of which shall meet the requirement for registration as an Engineer or he has attended a post Higher National Diploma course approved by COREN or passed a University degree program or any examination conducted by any other body authorized and accredited by the council.

VII. RESPONSIBILITIES OF A REGISTERED ENGINEER TO THE PROFESSION

The following are some of the responsibilities of an Engineer to the profession: Sources (COREN)
- An Engineer shall not knowingly take part in competition involving the submission of proposal and designs for engineering work, unless an assessor who shall be an Engineer of acknowledge standing has been appointed, to whom all such proposals and designs are to be submitted for adjudication.
- A Registered Engineer shall not advertise engineering services in any language or manner derogatory to the dignity of the profession.
- It shall be the duty of every Registered Engineer to bring to the attention of the Council any violation of the code conduct and to endeavor to encourage other registered engineer to adhere to its provisions.
- A Registered Engineer shall not engage in the practice of making preliminary studies and estimates of cost proposed for projects or render other professional service without adequate compensation.
- A Registered Engineer shall not either by himself or through any person or firm, offer to make payment by way of commission or otherwise, for the introduction for employment.

A. RELATION AMONG REGISTERED ENGINEERS

The following are some of how a registered Engineer can relate with the following registered Engineer:
- It is improper for a Registered to attempt to secure engagement by reducing his usual charge for professional service after being informed of the charges named by a competitor.
It is the duty of the Registered Engineer to ensure that credit for work and ideas are attributed only to the real authors.

It shall be considered unprofessional and inconsistent with honorable and dignified conduct and contrary to the public interest for any Registered Engineer to use the advantages of his salaried position to compete unfairly with other Registered Engineers.

A Registered Engineer shall not directly or indirectly attempt to support another Registered Engineer; nor shall he intervene or attempt in or in connection with engineering work of any kind, which to his knowledge has entrusted to another Registered Engineer.

A Registered Engineer shall not act so as to injure or attempt to injure, whether directly or indirectly, the professional reputation prospects or business of another Registered Engineer provided that this rule shall not be taken as prohibiting him expressing technical opinion on behalf of his clients before a tribunal or in a commissioned report, or from lodging a complaint of the conduct of another registered Engineer to the competent body.

VIII. CONCLUSION AND RECOMMENDATIONS

Engineering activities are those which make the resources of nature available in a form beneficial to man and also involve the provision of systems which perform optimally and economically. This profession is important to all sectors of lives because it contributed immensely to every sector. It is necessary for engineers to those that they are partner in progress and the functions of each partner in progress. The association in Nigeria that unified all engineering fields and the objectives of the association and similar, the body that sees to the regulation of engineering practice in Nigeria and the duties of the body and the conduct of a registered engineer was also discussed.

The study of engineering must be encouraged by all stake holders in all our institutions of higher learning so as to fast track development across the country by scholarship and incentive to the students and provide all necessary facilities and logistic for successful undertaken of the course in the Institutions.

A special salary scale should be organized for the professionals in the field of engineering by the Government and all the concerned so as to attract best brain to the field of engineering in Nigeria.

Engineers should also relate very well especially with incoming people into the profession by encourage them and organize seminars and lectures for them and they also relate with fellow engineers, clients, organizations and the larger society very well and faithfully.

REFERENCES