

Why The IEEE Should Support Professional Registration For All Electrical Engineers

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ABSTRACT: *Electrical engineers are among the most populous of undergraduate engineering students; yet among those least represented by professional registration. The legal aspects of identifying electrical engineers by a license to practice are stressed, and our present situation is contrasted to those of medicine and law.*

KEY WORDS: *IEEE, Professional Registration, Electrical Engineers*

INTRODUCTION

Until recently, the IEEE charter confined all activities of the Institute to technical and scientific pursuits. With the change of this charter, it is now appropriate to begin a full and open discussion of a wider range of matters that exert a direct impact upon the profession and upon individuals who regard themselves as electrical engineers.

Discussions about the professional aspects of engineering have been going on for some time by a number of individuals possessing different viewpoints and interests. Among these are recent articles by Farris [1] and by Markwalter [2] which have stimulated comment, both pro and con [3, 4]. An attempt is made here to identify certain basic criteria which must be satisfied in order that a particular field of human endeavor may qualify as a "profession." The role of registration is next treated; and the esteem and remuneration enjoyed by the medical and legal professions, which impose rigid requirements upon their constituents, are contrasted to the plight of engineers. Strong support of the IEEE is needed to change this situation.

THE CHARACTERISTICS OF A PROFESSION

It might well be that wide agreement could be more easily found on a definition of a profession, but it is not possible to proceed beyond relentless discussion unless a firm set of conditions, which any profession must satisfy, are adopted. In the view of the writer, these are the salient features which characterize a profession:

1. An ordered process of education, examination, and practical experience exists for assuring a prescribed degree of competence;
2. A code of ethics exists for assuring compliance with the covenants of the profession;
3. A set of laws exists for protecting the health, welfare and safety of society from illegal practices of individuals both inside and outside the profession; and
4. A legal means exists for protecting the interests of those in the profession.

State licensing boards, in all of the professions, insist that they exist solely to assure compliance with the first three of these tenants; and it is indeed so. But astute insight is not needed to appreciate the relationship between the profession and the last characteristic.

It is significant that the registration procedure involves all of the conditions given in the very first of these characteristics. Medicine and law have long recognized the importance of professional registration as a means of establishing individual competence; and through vigorous public education programs, they have demonstrated that the imposition of regulatory standards and registration upon practitioners are *essential* to the protection of life, property, and wealth in the community which they serve. In return for these efforts to demonstrate the importance of possessing a "license" to practice, medicine and law are the most highly respected and handsomely remunerated of all the professions.

Electrical engineering is unusual in that it is among the engineering fields awarding the largest number of undergraduate degrees, yet among the smaller numbers of registered professional engineers. The explanation of this anomaly appears to lie in the fact that relatively few electrical engineers hold positions requiring registration; i. e., their work does not involve considerations of public health, welfare, or safety; whereas, most civil engineers hold positions in which registration is either mandatory or highly desirable. Unfortunately, many electrical engineers seem to be afflicted with a "professional megalomania" under which they fail to recognize that professional registration is a legal matter which provides a license to practice engineering. In the absence of rigid and mandatory licensing requirements for all electrical engineers, the public is unable to clearly distinguish the competent engineer from the self-appointed impostor. No similar problem exists for physicians and surgeons, lawyers, druggists, and even TV technicians in the State of Florida; all of whom must possess a license to practice in their profession.

THE ROLE OF THE IEEE

Under present conditions, few if any individuals outside the electrical engineering profession even know what role an electrical engineer plays in our society. Indeed, it would be easier for the average citizen to describe the work of a teamster than an electrical engineer. This discouraging fact, in the world's most technologically advanced nation, is influenced by an attitude within the profession that the work of electrical engineers is "self evident" and needs no explanation. Indifference, and even hostility, in certain segments of the engineering community toward professional registration has likewise done little to clarify the role of engineers in society. Similar indifference accounts, in part, for the lowered public esteem for engineering resulting from an inability of the profession to publicly defend itself against attacks of ecologists, environmentalists, and conservationists who assail engineers as perpetrators of destruction of the environment.

The IEEE is in a unique position to exert profound influence not only upon its own membership but all engineers, in an effort to elevate the status of the engineering profession. Since the Institute is the largest engineering society in the world, being a multi-national organization with nearly 200,000 engineers, strong endorsement of professional registration by the IEEE would have

immediate impact upon its sister societies. And, this would represent the first large-scale, decisive attempt to legally identify the competent electrical engineer.

REFERENCES

1. Farris, H. W., "Engineers or 'Ingenors'?", *IEEE Spectrum*, Vol. 10, No. 3 (March 1973), pp. 74-79.
2. Markwalter, J. E., "A Doctrine for Engineers", *Professional Engineer*, Vol. 43, No. 7 (July 1973), pp.
3. Cuppett, H. H., Comments on "A Doctrine For Engineers", *Professional Engineer*, Vol. 43, No. 9 (September 1973), pp. 45-46.
4. Lubkin, Y. J., "Professionalization", *IEEE Spectrum*, Vol. 10, No. 9 (September 1973), p. 30.