



ICMEESA news

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**ICMEESA – President 2009
Mr Jack W Cunningham**

CONTENTS

1. The changing world of the Certificated Engineer.
2. Pr. Cert. Eng. Professional registration criteria - Proposed Changes.
3. Obituary Mr A P De Klerk.
4. Certificate of Competency with Limitation.
5. Municipal GCoC.
6. New Electrical Installation Regulations.

1. The Changing World of the Cert. Eng.

The theme of this month's newsletter subject matter is to communicate the changes that are being proposed and mooted by various parties and will in some way or another affect the future of the Certificated Engineer. I have restricted my comment to independent communication of the facts, with comment sourced from various communications on that subject. I trust that the content will elicit debate and comment from our colleagues.

2. Pr. Cert. Eng. Professional registration criteria - Proposed Changes.

There is presently an active debate on the current registration criteria for persons registered in the category Professional Certificated Engineer. (Pr. Cert. Eng).

Let us firstly recap on the requirements for registration as a Pr. Cert. Eng. with ECSA. The present registration criteria are clearly defined in accordance with the Engineering Professions, in the ECSA policy statement R2/1D. The debate is specific to Section 4, Legal Appointments, which specifies the following requirement:

As a minimum, an applicant must have been appointed in terms of current (or previous) safety Acts and regulations, and must furnish the Council with certified copies of the letters and supporting documentation. (Subparagraph (a) of paragraph 3.2.2 of ECSA Policy Statement R1/1.) It is of vital importance for an applicant to state the date on which he/she was appointed in terms of the relevant Act as the legal responsible person and to attach a certified copy of the letter of appointment.

Guidance to the registration requirements is further specified in the information sheet, and the Referee guideline, which further clarifies the above referred to Legal Appointment as:

An appointment, which requires the possession of a Government Certificate of Competency, as a Manager or as an Engineer in terms of the Mines Health and Safety Act, 1996 (Act No. 29 of 1996), or as an Engineer in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) or as a Chief Engineer Officer – Foreign Going on a vessel with a registered power of no

less than 3 000 kW in terms of the Merchant Shipping Act, 1951 (Act No. 57 of 1951), or in terms of any Act which preceded or superseded any of the Acts mentioned above, and which demonstrates the applicant's competence to implement and manage the provisions of these Acts, and ensure the safe operation and maintenance of plant and equipment .

So what is the debate you may ask?

There is regular occurrence of persons seeking registration that do not satisfy the above requirement of having held a legal appointment. Firstly, there are those who have diversified into other disciplines such as design, research, or, project management. The fact is that the candidate could have gained technical experience superior to the average appointed engineer, although confined to specific expertise. Secondly, there are those working in an environment where there is no legal requirement for an appointment under the Act.

Is it therefore fair to exclude such engineers from registration?

If your answer is negative, then you need to address the matter of how you then distinguish between the Engineer presently excluded by circumstance, as opposed to those whose who should be denied registration due to them not having the necessary skills, knowledge, experience or behaviour?

Although the present discussion and debate is of particular reference to mines, we cannot ignore the implications and domino effect such and amendment will have on the Certificated Engineer as a whole.

The proposal under discussion is that ECSA's current registration criteria for Pr. Cert. Eng. be amended to provide for applicants who are in possession of a valid Certificate of Competency, but who have not been appointed for at least a period of 1 (one) year in terms of the required regulations, but who can demonstrate, through RPL, that his/her work and exposure, for the prescribed period of three years, is substantially equivalent to, or, at a higher level to that of ECSA's current registration requirements for Pr. Cert. Eng. to be registered in the Category Pr. Cert. Eng.

Linked to the complexities of registration, are the proposed regulations pertaining to the "Identification of Engineering Work." Section 20 of the Council for the Built Environment Act (43 of 2000) requires the CBE to identify the scope of work for every category of registered persons. Thereafter, a person who is not registered by the ECSA may not perform any engineering work identified for any category provided for.

In the broad proposals for the IoEW, it states that: Artisans, such as workers skilled in a trade, mechanics, operators and craftsmen and managers of very small and micro enterprises involved in construction works and mining activities are exempt from the need to be registered. The reference to "small and micro" is really the crux of the registration debate in that you maintain controlled registration through revised criteria, as opposed to aborting all control as is stated above. Does

small and micro imply works excluded under the act for requiring an appointed certificated Engineer?

Persons registered within a particular category of professional registration may perform work within a range of characteristics identified for each category of registration. They may perform work within the range of another category provided that their education, training, experience and contextual knowledge have rendered them competent to perform such work.

However, where such persons regularly and consistently perform engineering work and take responsibility for such work, such persons must become registered with Engineering Council of South Africa.

3. Obituary: Mr A P De Klerk



It is with regret that ICMEESA records the passing of a longstanding and distinguished member, Mr. A. P. (Tony) de Klerk, who passed away during December 2008 in Krugersdorp after a short illness, at the age of 80 years. He was for many years a member of ICMEESA. He retired in 1988 from Anglo American's Gold Division as Manager: Engineering of the Vaal Reefs Gold Mine, which at that time was one of the two largest gold mines in the world.

Tony de Klerk matriculated from the Monument High School in Krugersdorp in 1936 where he showed a strong aptitude for mathematics. Due to the poor economic conditions during the 1930's, his family lacked the resources to send him to university. He therefore started his working career as an electrical apprentice with the old Robinson Power Station in Randfontein. Upon completion of his apprenticeship he joined Anglo American where he remained for the rest of his career. He continued with further studies and qualified as an Electrical and Mechanical Engineer in the early 1950's, followed by registration as a Professional Engineer. Later he also completed a B.Comm degree through Unisa. During his working career, he worked as Resident Engineer at the Umgababa Mineral Sands Plant on the Natal South Coast, prior to being promoted to the President Brand Gold Mine in Welkom. He was later promoted to Anglo American's Head Office and eventually rose to become a Consulting Mechanical and Electrical Engineer, first with De Beer's and later with the Gold Division. When

Anglo American decentralised certain of its Engineering Functions in 1977, he transferred to the Vaal Reefs Gold Mine as Manager: Engineering, in which capacity he retired. He is survived by his wife Kay, and three children.

Our sincere condolences to the family.

4. Certificate of Competency with Limitation?

The Chamber of Mines was requested to approach the Department of Minerals and Energy, requesting the Department to consider the introduction of a certificate of competence of limited scope for engineers on opencast operations. The argument in support of such a certificate is that junior engineers on opencast operations have to be seconded to underground mines for some of their experiential training, e.g. training relating winding plant and refrigeration plant. It is further argued that, once qualified, these junior engineers will never require this knowledge while employed on opencast operations. The counter argument is that engineers holding such a certificate can only be employed on opencast mines. In companies operating both underground and opencast mines their mobility, as well as their opportunities for promotion, is constrained hence limiting their value to their employers.

It has for many years been practice that learner engineers from the coal section are accommodated on various gold mines for experiential training in the areas in which they lack exposure on the open cast coal sector. Failing that, the implication is that we go the same route as the Mine Managers Certificate in that we have separate Engineers GCoC for metalliferous and coal. And, what if you happen to work on an opencast gold or copper mine? Some coal mines have shafts, so just where do we draw the line?

The main concern is that a Certificate of Competency with limitation, once promulgated, could lead to a multitude of other possible options in future. The scenario could be broadened to exclude students from equipment not on their specific mine or works. For example, Koepe winders and refrigeration plants. It was only this past week that I learnt of a retired engineer being called in to facilitate a Koepe winder rope change as present staff had neither knowledge nor experience of performing this task. It is a positive that the responsible person sought advice to assist.

Is the real problem being addressed? Are the coal mining students not using this as the excuse for not passing the GCoC examinations? The fact is that even the students fully exposed to the appropriate equipment experience a low pass rate in the examinations.

It is my opinion that we are not solving the real problem of educating and training Engineering candidates. For the lack of a practical workable solution we are now following the Education department's example and lowering the pass mark, or alternately lowering the standard.

Lowering the standards, to enable candidates that do not achieve the present pass requirement is not an

option. The result will be an influx of GCoC's with limitation. It will be a nightmare for the person responsible for appointing the Engineer to ensure that he is competent to perform the tasks required of him.

The next discussion will be to devise a conversion examination for those wishing to migrate to other mines with the specific machinery in operation. What will the process be for such a person to now obtain a GCoC with no limitation?

For the lack of having read information addressing the problems raised in this article, I would strongly recommend that we stick with the current system. The cross pollination of students between hard rock and coal mines benefited everyone in the past!

5. Municipal GCoC?

SA legislation requires that municipalities above a prescribed level of installed electrical capacity employ a Certificated Engineer. There is almost no compliance with this at present.

There is overwhelming consensus that South Africa, along with the rest of the world, is facing a technical skills crisis, owing to the shortage of young engineers. Most engineers in South Africa are well into their fifties or older, and many have either retired prematurely or departed for seemingly greener pastures overseas. Even with the downturn in the commodities market the demand for Certificated Engineers is high. Even with the acceptance of the fact that Certificated Engineers are needed in Municipal service sector, competitive remuneration is a deterrent. The remuneration level of Certificated Engineers is relatively high in comparison with those Engineers who have similar tertiary qualifications; this level is well above that offered by municipalities governed by the PFMA regulations.

Simultaneously, in many municipalities in South Africa, there is a dire need for skills mentoring and training, as well as financial management advice. This situation has led to the development of an innovative programme developed by the Development Bank of Southern Africa (DBSA) called Siyenza Manje (we are doing it now), which seeks to kill two birds with one stone.

The programme has two main aspects, one of which is the deployment of retired or senior professional engineers, planners, finance people – referred to as experts – and young professionals (YPs) to low-capacity municipalities.

The other aspect is the planning of systems, with the municipalities being provided with grant funding to develop master plans, strategies and systems, as well as to conduct feasibility studies. The DBSA also carries out development facilitation, through the sharing of experiences and development knowledge that it has picked up in the course of executing its development investment.

The general shortage of Certificated Engineers is exacerbated by the fact that over the past 5 years, the aggregated pass rate of the GCC examinations has been 9%. This has resulted in many industries, facilities and most municipalities operating illegally, by not

employing a Certificated Engineer when the capacity of the facility requires this. Some groups have the relevant person not being on the factory floor, but operating from a consulting head office position in a pseudo compliance role where on the site management is not present. There is currently only a handful of Certificated Engineers operating in the 283 municipalities. The main concern is that accidents in the work place are frequent and growing, with many probably going unreported.

A recent constraints-based study carried out by Engineer Placements, with the support of a number of experienced educators who provide GCC training and employers of GCC Engineers, concludes that improving the learning process and structured support for GCC students would significantly increase the pass rate.

My concern with the preceding statement is that the larger mining companies have a poor examination pass rate with more than adequate support structures in place. Also, with reference to the preceding articles in this newsletter, one becomes concerned that someone perceives yet another method of improving a pass rate through the issuing of certificates of lesser limited value. The municipal problem has deteriorated since the implementation of the Local Government Transition Act 209 of 1993; by 2000 the new demarcation resulted in 283 municipalities. Municipalities in SA have followed a worldwide trend of outsourcing project functions to the private sector, whilst retaining operations and maintenance themselves. However, this has had the effect of diminishing the budgets, facilities and staff to do this and hence poor service delivery has ensued. The trend in the loss of civil engineering staff is replicated by the electrical and mechanical disciplines. As a result, complex and expensive municipal assets are declining in ability to operate through neglect of maintenance and poor operations.

How can the proposed initiative resolve the crisis, and how will the municipal GCoC be constructed?

It is stated that there is a need to identify the necessary conditions, engineering service skills, capacity and standards are required. I consider it unnecessary to reinvent the wheel, when these skills have been identified and encompassed in the SAQA registered qualification: National Certificate: Certificated Engineering. These address the essential basics which are universal irrespective of industry or discipline.

I agree fully however, that the basic GCC curriculum which is enshrined in law includes a broad level of expertise, and that once the Certificate of Competency has been achieved so that legal compliance exists, specific training material applicable to municipal engineering can be provided on the same platform. It will be necessary to support evidence for both performance evaluation of the employee and material for gaining CPD credits required for the maintenance of registration with ECSA.

Cognisance must be taken of the fact that the provision and availability of the training of the GCC resources is done by the private sector on a commercial basis. It is also here where the knowledge, skills, experience and resources are held. Students volunteer to become

qualified Certificated Engineers through the attraction of higher remuneration. Students are hampered by the cost of procuring course material from various sources. Improved remuneration would be necessary to motivate candidates to enrol for the available course material which is not cheap. With the present cash strapped municipal structures, financial support must be presently assumed a distant dream.

The present dearth of skills within the municipal structures will be challenging with respect to the most critical of all roles, mentorship. Mentorship needs are required on the job as functional mentors and on the course material as course mentors, with subject matter expertise. Industry mentor support is currently generally unstructured other than in specific mining groups that have had to implement such support due to their own urgent needs to recruit Section Engineers who have to comply with the Act.

Functional mentors would also benefit from having access to course material in order to provide better practical mentorship to GCC engineers in practical training. Structured mentorship with good course material will emerge as the KEY item in assisting the learning process to achieve goal unit throughput. It does no more than replicate time proven tuition routines.

Within this paradigm of sufficient numbers of Certificated Engineers with the necessary skills and competences to improve our municipal service, lies the opportunity for a Public/Private Partnership to combine and implement a strategy to achieve these necessary conditions to meet the benchmark level of service delivery.

I trust that the intent of this initiative will result in the development of more competent Certificated Engineers in possession of our now treasured and hard earned Certificate of Competency, and not some cheaper version. If that be true then we need to ask: How can we as ICMEESA assist in Siyenza Manje becoming a successful reality?

6. New Electrical Installation Regulations

The Minister of Labour has, promulgated that the Electrical Installation Regulations that were published in Government Gazette No 31975, GNR. 242 of 06 March 2009 will come into effect on 01 May 2009.

This new Electrical Installation Regulations will have a major impact on the private property owner, house owner, property developer, property investors, electrical contractors, electricians, approved inspection authority for electrical installations, landlord, person renting or leasing property as well as electrical suppliers.

These regulations replace the Electrical Installation Regulations promulgated on the 23rd of October 1992, and should not be confused with the Wiring Code SANS 10142-1. The changes are addressed in the June 2009 edition of the WC Engineering Bulletin, under the section "Safenet thought for the day."