SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING

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Tuesday, 29 July 2014

Ms. Tara O'Beirne,
Commission for Energy Regulation,
The Exchange,
Belgard Square North,
Tallaght,
Dublin 24.

Dear Ms. O'Beirne,

We appreciate the opportunity to comment on the CER's recent consultation paper "*Regulation of Electrical Contractors with respect to Safety from 2016*" (CER/14/130). We have carefully considered the questions posed and provide supplemental information supporting our position.

As corresponding author, if I can be of further assistance, please do not hesitate to contact me.

Yours sincerely,

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Introduction

The Dublin Institute of Technology has a history in Dublin city, dating back to 1887, in its current form since 1992 and Craft education has played an important role in the education provision offered by the Institute. In this regard, the Discipline of Electrical Services Engineering (within the School of Electrical and Electronic Engineering) in conjunction with SOLAS (formerly FÁS), has delivered electrical apprenticeship education for many years.

More recently, the Discipline has developed a *Verification and Certification* course[1] in cooperation with the Electro-Technical Council of Ireland (ETCI). This course was designed to facilitate the CER requirement that RECs need to undertake an accredited programme in order to satisfy the educational/competency requirements associated with the verification and certification of electrical installations. DIT, as one of the national degree-awarding bodies in higher education, accredits this course and the current SSBs have embraced and offer their respective member RECs. This process is being formalised through a Memorandum of Agreement (MoA) between DIT and both SSBs.

It is therefore on the basis of a strong heritage in electrical services education and with respect to the Discipline's role in the education of all aspects concerning the verification and certification of electrical installations that the responses presented here are formulated.

Scope of Response

The consultation document requests respondents to consider 27 themes (please refer to **Appendix 1** for a collated list), but the Discipline of Electrical Services Engineering is responding to specific themes, as listed below:

Theme	*Theme specific(s)*
7.	Qualifications of inspectors
8.	The Criteria Document
9.	Electrical training and verification assessment scope
12.	Categories 0f RECs
13.	Controlled Electrical Works
14.	Restricted Electrical Works
15.	Minor Electrical Works
17.	The use of ETCI Certification process
18.	An electronic certification system

The School of Electrical and Electronic Engineering through its Discipline of Electrical Services Engineering has decided to concentrate on aspects of the consultation that are directly related to education in the sector. While the consultation is presented as a means to engage stakeholder (and interested parties) inputs on how the regulation of electrical contractors post 2016, there are some inconsistencies in how the information is presented. Some general comments on the consultation in this regard are provided as follows:

[1] *Certificate in the Inspection, Testing, Verification and Certification of Electrical Installations in Ireland*

- In section 2.2, *"... from 2000 to 2006 the average number of fires per annum due to electric wiring installations that were attended by fire brigades was 427*". Firstly, these figures are quite dated; it would have been helpful if more recent statistics had been included for reference. Furthermore, it would be helpful if this figure (427) was broken down into constituent elements to explain how many domestic fires were attended and if such fires were attributable
- Figure 1 is quite confusing; it suggests that RECs go on/off the register at different times each year (in and around q1 each year). Is this graph more representative of payment from RECs? The graph should also be presented as a year-on-year aggregate to illustrate the associated trends concerning registration. Also the graph appears to be in conflict with the suggestion of a 1% fall in REC registration.
- Figure 2 and 4 could have been segregated so that the number of inspections undertaken by the separate SSBs are presented
- Figure 3 illustrates a 300% increase in certificate sales, with a very slight increase in inspections (when cross-referenced with Figure 2)
- Figure 5 is not normalised. This figure would be more informative if the annual inconsistency figures were presented as a percentage of SSB registration status. The rationale for this is that there could be a disproportionate number of inspections associated with the membership category within either SSB. Given the downturn of the economy, it is likely that a number of RECs are actually engaged in part-time membership. The way the data is presented could be construed to suggest that one SSB is outperforming the other.

Response

7. Qualifications of Inspectors

The technical qualifications/experience for inspectors should incorporate those listed in the consultation, with the following additional considerations:

- In consideration of the appropriate experience for an inspector, we feel that a minimum of five years is more appropriate

- Rather than being '*fully conversant*' with the Technical Rules, Building Regulations, Health and Safety legislation (as appropriate) and the DSO's code of practice etc., we feel that an inspector should have detailed knowledge if same. This may require some form of further training may be warranted in this regard

8. The Criteria Document

In section 4.2.3, there is a suggestion that CER may make changes to the Criteria Document without going through the group listed in section 4.2.1 (ETCI, ESB Networks, the Designated Body/Bodies and the RECs) as long any proposed modification was deemed important from a safety perspective. The Criteria Document is a significant body of work with multiple sections and cross-references. We feel that these bodies with their collective breadth of technical knowledge/expertise are best placed to assist in assessing and ascertaining the safety implications/ramifications associated with any proposed changes to the Criteria document so to exclude them would be ill advised.

As an overarching body with a vast knowledge of experience in this area it would be prudent to request ETCI to set up a Technical Committee (TC) to monitor and amend content in this document. The TC system works well and has a proven track record of inclusive responses from industry as well as academia and RECs. Furthermore, the ETCI in particular is made-up of industry stakeholder bodies so in this regard ETCI can assist in disseminating any changes/modifications CER suggest to the wider population including RECs, customers and advocates of enhanced safety protocols.

9. Technical Standards, training and assessment scope

Technical Standards

The ETCI National Wiring Rules (ET101) as developed by TC-2 of ETCI are prepared in consultation/cooperation with a wide range of industry stakeholders and experts. These rules are dynamic and have scope to address and in some instances pre-empt national electro-technical requirements. Moreover however, the National Wiring Rules have a harmonised structure, which is cognisant of the European position – as directed by CENELEC. An important point to make though is that CENELEC do not produce European standards for installation rules. In this regard therefore, the National Wiring Rules as developed by ETCI TC-2 have a hugely important role in collating the expertise of its member bodies (one of which is a DIT representative) into a cohesive and imperative backbone of national electro-technical safety.

It is our view that the National Wiring Rules, trough ETCI (TC-2) have directly contributed to reduce the level of electrical fatalities and fires due to electricity. Furthermore, the Rules ensure that a level of discipline is maintained in the electrical services industry and in so doing, the level of safety prevalent within electrical installations is at a level amongst the highest in Europe. Therefore, we believe that the role of ETCI – including their certification processes (as will be discussed in *'17. The use of the ETCI Certification process')* – should be continued.

Training and assessment scope

As outlined in section 3.4.2, DIT will have a role in accrediting the educational requirements pertaining to the verification and testing of electrical installations (as offered through the course it developed in cooperation with ETCI: *Certificate in the Inspection, Testing, Verification and Certification of Electrical Installations in Ireland*). The two-day course provides the academic requirements in part-fulfilment of the Qualified Certifier's requirements to meet the conditions laid down in the CER's criteria documents. The aim of this course is to provide a means of assuring the competence of *Qualified Certifiers* and to ensure safety in electrical installations. This will enable those personnel inspecting, testing, verifying and certifying electrical installations in Ireland to be certified as being properly qualified to do so. The Safety Supervisory Bodies would then register applicants according to their particular requirements.

A Memorandum of Agreement (MoA) is currently being finalised which outlines the responsibilities of DIT and both SSBs in ensuring that the module and associated learning outcomes are delivered as per DIT quality assurance requirements. As with the National Wiring Rules, which are dynamic in their scope and terms of reference, it is envisaged that this course will evolve as required by industry through innovative and multi-faceted assessment methodologies. DIT is an independent academic institution with the capacity to make decisions with respect to changes in their course descriptors. DIT maintains very high quality

assurance/enhancement standards and will carry-out course monitoring as well as course amendments as required

With regard to 'training prior to registration' and the current arrangements, the alternative to a REC being a qualified, might warrant further consideration. The current arrangement electrician specifies that 'another suitable electrical award, equivalent to L6 on the national framework of qualifications) is permitted. We appreciate that this facilitates a means for more diverse professionals' access to the sector, but perhaps – some form of educational bridging should be mandated if an applicant REC does not have an electrical background.

In respect of the specific questions posed in section 5.4.2:

1. The course developed prioritises the examination of the requirements of Part 6 of the National Rules of Electrical Installations ET101. There is no need to expect Qualified Certifier's to memorise the entire contents of the National Wiring Rules; each REC is obliged to have a current copy of the rules, which can be consulted when the need arises.
2. The assessment caters for domestic, industrial and commercial electrical installations.
3. The practical aspects associated with the inspection, testing, verification for potentially explosive atmospheres and certification of electrical installations in potentially explosive atmospheres is consistent with those covered by ET101. There is however a difference in the certification documentation as prescribed by the National Rules for Electrical Installations in Potentially Explosive Atmospheres, ET105. In this regard however, there are sufficient differences and technical considerations that warrant further training for such (potentially explosive) environments
4. In TN systems of earthing, which are representative of the system employed in the majority of (domestic) electrical installations, the measurement of the earth electrode resistance is not a mandatory requirement.

DIT through its relationship with the ETCI has direct access to information pertaining to the electro-technical sector.

12. Categories of RECs

The Criteria Document already prescribes the following categories of registration:

1) Registered Electrical Contractor
2) Registered Associated Contractor
3) Registered specialist contractor

A large number of categories of RECs will only serve to complicate the situation by sub-dividing it into multiple sectors. Mandatory training to become RECs brings with it a financial burden that may engender opposition within the sector. Training must be advocated and supported but not in such a rigid and mandatory fashion.

The only potential scope for enhancing/safeguarding of work practices might be in the re-designation of work within explosive atmospheres from controlled works to restricted works. Such an initiative would be supported by the requirement of RECs to undertake an accredited programme in this regard (such as the V&C programme developed by the Dublin Institute of

Technology and ETCI). Again, ETCI and indeed DIT are well placed to offer guidance/technical input should such a course be required.

13. Controlled Electrical Works

The system as currently defined, which is underpinned by the technical Rules (ET101), is appropriate and fit for purpose(s). It is important to re-emphasise however, that any modifications to the definition of controlled works should be in context with the technical standards and in consultation with the relevant committee within ETCI (namely TC-2).

14. Restricted Electrical Works

Currently, electrical installations within potentially explosive atmospheres are designated as controlled works. These should be re-designated as restricted works, i.e. work within areas defined as being explosive atmospheres should be restricted to persons who are competent or to those under the direct supervision of a competent person. This would (and should) involve RECs obtaining additional approval from the SSB(s). Such approval should be underpinned through a demonstration of competence (or meeting competence criteria), before such RECs are permitted to carry out work, or supervise electrical work, in Potentially Explosive Atmospheres.

15. Minor Electrical Works

It is understandable that CER decided to leave room for minor works (outside of the scope of controlled electrical works). Such undertakings should comply with the National Rules and clients should be informed of the risks in allowing non-competent persons to undertake such work.

A non DSO certificate is being finalised through a sub-group of ETCI (TC-2) which will enable RECs to certify the installation work. This group, which includes representation from both SSBs, is developing a certificate that will permit the capture of any type of work activity undertaken by the REC and all RECs will be mandated to provide such certification to the customer.

17. The use of the ETCI Certification process

The ETCI certification procedure for electrical installations, which includes recording the many inspections and tests that verify compliance with Chapter 6 of ET101 (National Wiring Rules) is recognised internationally as being very comprehensive and well considered. This is not really surprising give the experience of ETCI (TC-2) in this regard and the make-up of the associated committee. It would be our contention that to simplify the rules (Chapter 6) and associated procedures would result in a lowering of safety levels in installations with consequential increased risk to life and property.

The ETCI National Wiring Rules (ET101) are compiled in conjunction with the relevant IEC and CENELEC technical bodies and represent international best practice. In collaboration with the NSAI, ET101 has become, *de facto*, the national standard and is acknowledged as such by the other sectoral stakeholders. The desire for electrical safety is underpinned by the certification process defined in ET101. It is difficult to comprehend a suitable alternative to that outlined in ET101 that would be an improvement over the service currently provided.

In addition, ETCI has compiled certification processes for a wide variety of installation types such as the National Rules for Electrical Installations in Potentially Explosive Atmospheres (ET105) and the National Rules for Electrical Installations for Power Installations exceeding 1 kV a.c. (ET103), scheduled for publication.

It is unclear why this consultation refers to revenues for ETCI through its certification system(s), but it is important to point out that if an alternative certification system is to be developed the cost(s) associated with what ETCI do in respect of electrical safety and certification, will just end up as additional costs for NSAI or indeed the future SSB(s).

18. An electronic certification system

Should any electronic system cover certificates for all controlled works and minor works?
We believe that an electronic certification system that should cater for all certificate types (ET101 (LV); ET105 (ATEX); ET103 (HV)). Such a certification system should also be capable to include other certificate types (e.g. emergency lighting, fire alarm systems etc., smart metering).

Should such any electronic system be mandatory (non paper) and should RECs be incentivised to move to such a system?
A fully digital system is the future. However, such a system must accommodate a means for RECs to record test record 'sheets' as well as certificates. An electronic system could incorporate the facility to print-off paper copies so that a transition phase is provided before a fully electronic system is mandated.

Should it be mandatory or incentivised to get RECs to move to an electronic system over a phased basis?
Only a mandated system will facilitate a cohesive approach to certification. As explained in the answer above however, a 'lead in time' in conjunction with adequate training through the SSB(s) could ensure REC compliance.

Should the Electrical SSB(s) be required to offer (promote) the electronic system?
If it is the intention to move towards a more digital system, the SSBs are core to implementation. As explained above the SSB(s) can ensure REC compliance through adequate training. The current (ETCI) certification process should retain the technical authority over such a certification system (justified in previous comments) and in this regard, an electronic system would also be promoted nationally through ETCI-TC2.

APPENDIX 1: Consultation themes

Theme	*Theme specific(s)*
1.	Number of SSBs designated
2.	Financial Structure of a Designated Body
3.	Core and permitted activities of the SSSB(s)
4.	The term of Designation
5.	Staggered and dates for Electrical and Gas SSBs
6.	Electrical SSB compliance
7.	Qualifications of inspectors
8.	The Criteria Document
9.	Technical Standards, training and assessment scope
10.	Individual Registration of RECs
11.	Insurance considerations pertaining to SSB membership(s)
12.	Categories of RECs
13.	Controlled Electrical Works
14.	Restricted Electrical Works
15.	Minor Electrical Works
16.	Detection of unregistered individuals
17.	The use of ETCI Certification process
18.	An electronic certification system
19.	Non compliance relating to certification
20.	Branding wrt the safe electric brand
21.	Mandatory use of safe electric logo
22.	Annual logo
23.	Unique identifier for RECs
24.	Branding wrt SSB(s) being required to contribute to a list of RECs which can be hosted on the safe electric website
25.	Electrical SSB logo restriction
26.	Reports on complaints
27.	Joint electrical and gas SSB