



NEW ZEALAND ELECTRICAL INSTITUTE (INC)
AUCKLAND BRANCH

Incorporating NORTHLAND, NORTH HARBOUR and WAIKATO Branches
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"TO ADVANCE THE SCIENCE AND KNOWLEDGE OF ELECTRICAL ENGINEERING"

TO ENHANCE THE SAFETY AND CONFIDENCE OF ALL CATEGORIES OF ELECTRICAL WORKERS

NEWSLETTER JUNE 2010

Dear Members,

The AUCKLAND BRANCH, NZ ELECTRICAL INSTITUTE (INC) invite you to a
MINI ROADSHOW presented by **ALAN CUTHBERT**

Alan was a member of the Standards Committee which prepared the AS/NZS 3000:2007 Standard known as The Wiring Rules and is currently the National Secretary for NZEI.

Alan will discuss the latest changes to the

**ELECTRICAL SAFETY REGULATIONS 2010 AND
STANDARDS AS/NZS 3000:2007.**

THURSDAY 24TH JUNE 2010 7.30pm

2nd Floor AMI BUILDING 1

15 Osterley Way, Manukau

NZEI Members – Free

Non Members \$10 by donation

AS/NZS 3000:2007 WIRING RULES AND AMENDMENTS

Copies of the above **Wiring Rules** can be purchased for **\$149 on the night** or
Contact Bob Hanham by phone 09 834 6590 or
Email rhanham@xtra.co.nz

From our President:

We had a full turn out at AMI Building in Manukau for the 3rd June Refresher. Bob Hanham gave us an update so far to the new Regs and Standards, as well as the usual information regarding PSCC, Testing, Safe practices and the CPR and first aid refreshers via First Aid NZ

Q&A sessions went well with a few surprises for some around interpretation of new rules, supplier declarations of conformity and the new CoC.

We also had a good supper that gave more time to network and discuss issues more intimately.

John Brothers and John Lamb were on hand to assist throughout the evening.

Everyone found the session most valuable.

Thanks were given to Bob & First Aid NZ in the usual manner.

We urge you to attend the North Shore refresher on 17th June at Birkenhead RSA if you are yet to do the refresher.

You will glean some contemporary knowledge – so bring along non-members who will benefit from your refresher course, and from joining the Institute.

We believe we are now the most up to date group in the industry. We have already delivered road shows throughout the South Island.

Regards,
Phil Dayson

Newsflash from Alan Cuthbert

There has been much misguided information being said about the requirements of Regulation 70 and 66, re the need for an independent inspection if a new RCD, RCBO or MCB is fitted to a MAIN switchboard in recent weeks. The correct position was given in an official ruling issued by Energy Safety on 9th June 2010.

"Inspection of Switchboards

Q: Does the addition of a new final sub-circuit to an "MEN Switchboard closest to the point of supply", require inspection because this work comprises "Mains work"?

A: The applicable Regulations are; Regulations 70, and 66, and Regulation 4 for the definition of "Mains work" and the definition of an "MEN switchboard".

To require inspection, the work must firstly comprise PEW subject to certification under Regulation 66, taking into account the exceptions of Regulation 66 (3).

The definition of "Mains work" makes reference to an "MEN switchboard", which in turn clarifies the particular aspects of the switchboard that are relevant. In this way the two definitions point to the features of the switchboard that would make the work subject to inspection.

Therefore, unless the work carried out on the MEN switchboard relates to the *"connection to an earth electrode via an earthing conductor, and a connection between earth and neutral made by a removable link, for the purposes of creating a MEN system"*, the work is not considered to comprise "Mains work" and therefore not subject to inspection."

For further information see the 'Members Only' section of the www.nzei.co.nz website.

Q & A from the ES Website www.energysafety.govt.nz

RCDs - Switching of Neutral

Q: Regulation 24 of the Electricity (Safety) Regulations 2010 states that an RCD is deemed to be unsafe if it does not disconnect all live conductors under specified conditions of current and time etc. The Regs define the neutral conductor as a live conductor.

Can you please help me understand the reasons behind this Regulation?

A: Firstly and most importantly, Regulation 24 only applies to RCDs mandated by a Standard or the Regulations:

24 Electrically unsafe RCDs

(1) This regulation applies to any standard low voltage RCD that is used in a situation where it is required, by these regulations or any standard, to be used.

Safety Fundamentals

The philosophy of the NZ safety Regime requires that within any installation or appliance, at least two "hard" safety barriers are applied to prevent electric shock. For example, double insulation, or single insulation and earthing. This is reflected, for example, in the fundamental safety criteria of Regulations 20(1)(a) and 23(1)(c).

Neutral is a live conductor

Neutral has historically been considered to be a live conductor. In any circuit it is the return conductor and therefore has a potential to be alive at full voltage if a single fault occurs such as an open circuit.

NZ's MEN system

The particular configuration of NZ's variant (MEN) of the TNC-S system does not adequately ensure that in all circumstances where RCD protection is required for safety, that the neutral conductor would be at earth potential or would not be carrying sufficient current to create an unsafe potential rise. The most serious situation being a Phase Neutral transposition in either a mains or submain circuit.

While there are some situations where the neutral conductor's potential and fault current is sufficiently controlled, (such as at some MEN switchboards) the method of determining, or of expressing this, is considered too complex to provide a generic description for it in Regulation.

RCDs to switch Neutral

In the trans Tasman context, the higher risk situations recognised jointly to justify interrupting the neutral are reflected in the applicable Standards and mandate interruption of the neutral. For example, AS/NZS's 3001, 3002, & 3012.

NZ has however determined that, given the less 'blanket' approach and more risk based philosophy applied to mandating RCD applications, a more safety conservative approach to interrupting the neutral is justified where RCDs are required.

Consequently it was determined that to avoid doubt, and potentially undermine the safety benefits of RCDs, interruption of the Neutral in NZ would be made mandatory wherever RCD protection was mandated by the Regulations or Standards.

In other situations the decision to 'switch' the neutral would remain the responsibility of the designer, installer and/or user.

Regulation 58 - Declarations of Compliance

Q: Regulation 58 makes reference to Regulation 63 which is a requirement for a sign. Is this reference correct?

A: No, the reference should have been to Regulation 59. This is proposed to be corrected in the next adjustments to the Regulations.

Is a DoC a Statutory Declaration?

Q: Is a DoC made for Regulation's 57 and 58 subject to the requirements applying to a Statutory Declaration made under the Oaths and Declaration Act?

A: No. In the context of the Electricity (Safety) Regulations 2010, whenever a Statutory Declaration is required it is explicitly stated as being a Statutory Declaration. For example see Regulation 53.

Regulations 57 and 58 do not establish such a requirement. In addition the Regulations refer to ISO 17050 which sets the requirements for the declaration and operates on the principle of identifying the supplier and establishing the basis of their compliance.

From Christine

NZEI WEBSITE – MEMBERS ONLY SECTION

TO OBTAIN YOUR LOGIN FOR THE SITE
EMAIL ALAN CUTHBERT AT nzei@xtra.co.nz

I recently found a couple of items of interest on the “Consumer” website www.consumer.org.nz.

One related to a new installation of a Smart Meter, at a residential property, where the meter board main switch was left off after installation and when checked it was found that the meter was only supported by the wires behind it.

Phone calls to Genesis achieved nothing. Technicians were sent to check the lines were working but they didn’t check the meter – the customer was assured that a ‘photographic audit’ of the meter installation showed that all was OK.

Genesis later conceded that the photos were of a meter box at another location. After a month of waiting for Genesis to rectify the mistake the customer employed his own electrician and contacted the Electricity and Gas Complaints Commission NZ. Within a day he received an apology from Genesis with a refund for his expenses and a small ‘thank you gift’. (Hopefully it wasn’t a framed copy of the ‘photographic audit’).

The second is of a Contact customer who had 2 meters installed in 2008 and recently received a letter from Contact informing him that one of the meters had stopped working six months ago. He also received an account for the estimated electricity used during the 6 months.

The estimate was \$600 more than the amount billed for the same period in the previous year.

With advice from the Electricity and Gas Complaints Commission NZ and Consumer he was able to negotiate with Contact and was able to have the account much reduced.

Upcoming Meetings

August Visit to NZ Naval Base Engine Room Simulator
Details to be confirmed

September 9th 2010 Annual General Meeting
Venue to be confirmed

Regards,

Christine Heappey