

UNDERSTANDING THE ROLE OF REGULATOR AND CONTRACTOR

A précis by Chief Electrical Safety Officer, Tim Hallen

The electricity safety regulator actively promotes and manages a non-intrusive regulatory framework for electrical contractors to gain self-reliance.

This activity reflects legislative change as well as changes to Australian Standards. Electrical contracting activities are now undertaken with minimal prescriptive rules and minimal intrusive scrutiny.

The *Electricity Reform Act* is clear and unambiguous; electrical contractors are able to confirm their respective safety obligations to clients and the wider community through compliance to the legislation.

Electrical contractors need to understand legislative intent and responsibilities identified within the legislation.

When all provisions of the *Electricity Reform Act* are met, consumers, industry practitioners and the general public can be assured shock and fire hazards associated with electricity are removed and safety levels are maintained.

By monitoring safety and technical standards and providing advice on the level of compliance, Electrical Safety becomes a resource available to assist electrical contractors identify and meet their regulatory obligations in keeping the community safe from electricity hazards.

Electrical contractors, by their very nature, are commercial operators engaging in activities for profit. In any community and across all industries commercial operators compete against each other for market share.

An important factor that underpins an electrical contractor's continued success is linked to their ability to provide in full the service they are engaged by clients to supply.

Self-reliant electrical contractors are positioned to meet these obligations in full. The knowledge and application necessary to provide a contracted service should exist before entering a contract.

The electricity safety regulator does not function as a consultant to providing design advice on how to undertake specific commercially negotiated tasks for which the contractor intends to contract or has already commenced.

Design advice is available within industry where practitioners choose to maintain the knowledge within their business. Contractors who choose not to maintain adequate design knowledge have access to such information by commercially purchasing it.

In summary, the electricity safety regulator exists outside any commercial arrangement between an electrical contractor and their client. The electricity safety regulator exists to implement strategies to ensure persons, property and livestock remain safe from shock and fire associated with electricity.

The *Electricity Reform Act* supports these important safety outcomes. Electrical contractors, by engaging in only regulatory compliant activities, ensure the safety outcomes are achieved and any risk associated with electricity is removed from the community.



Tim Hallen



*News from
the EWCLB*

Isolating switches and restricted licence holders

The Board was asked recently if a refrigeration/air-conditioning mechanic with a restricted licence could repair or replace an isolating switch associated with

refrigeration/air-conditioning unit.

The Board's ruling is that if an isolator is mounted on or within the unit, then the restricted licence holder is permitted to repair or replace that isolator.

In all other cases the restricted licence holder is not permitted to repair or replace the isolator.

A message from Manager Electrical Safety, Darrol Sachs

Welcome to the 'Dry Season' edition of *The Conduit*. The past six months has been a busy time for Electrical Safety.

The last round of Audit Packages have been sent off, meaning that all electrical contractors licensed in the Northern Territory, including those who reside in another State, have now been contacted.



Electrical Safety Officers have assessed and responded to those who have already completed the documentation and hopefully those contractors are now more aware of where their business stands in relation to regulatory compliance.

The next round should be even more beneficial as businesses build up and better utilise the wealth of information and expertise that comes with achieving regulatory compliance.

With regulatory compliance comes the ability for a business to deliver safe work and obviously this is the outcome all of us in the electrical industry support and strive for.

Peter Donovan has been extremely active within industry and Electrical Safety has interacted with him on various issues he has raised on your behalf and also participated in activities he has organised around the Territory.

A review of the *Licensing Act* has been on the horizon for some time and, in preparation, Electrical Safety has been looking at licensing requirements in other States to ensure the optimum degree of uniformity and modernity.

Similar research has been done in relation to legislation for safety and technical requirements for electrical appliances.

Hope you get some value from this edition of *The Conduit*; the content is once again as varied as possible and I do encourage and value your contributions.

New Standard released

Finding the wiring rules hard to understand? Can't find what you are looking for? You'd like some help? Do yourself a favour and get yourself a copy of the latest handbook – *HB 301-2001: Electrical installations - Designing to the Wiring Rules*

The HB 301 handbook has been created to provide guidance on designing electrical installations to comply with AS/NZS 3000:2000, Wiring Rules.

The handbook provides seven documented design solutions for installations like townhouses and office buildings, retail complexes and small industrial estates.

A pro forma design document is included to allow you to adapt the design methodology to any project.

The HB 301 Handbook is a practical guide for new entrants into the electrical industry or for those wishing to refresh their knowledge before commencing an electrical installation.

The handbook contains many worked examples, informative figures and drawings, and specifically explains various clauses of the Wiring rules, including terms new to AS/NZS 3000:2000.

Standards Australia Update

Standards Australia recently produced the second amendment to AS3000/2000. This standard is now in force and it is strongly recommended you obtain your copy to maintain compliance with them.

The second update is available for \$7.92 over the counter or free on the website (www.standards.com.au). Go to the home page and click onto the 'On Line Services' section then click onto 'Download an Amendment'. From here follow the prompts and type in 3000 when asked for a standard number.

For more details regarding particular standards, contact Standards Australia direct on 1300 654 646 (fax 1300 654 949, email sales@standards.com.au, GPO Box 5420 SYDNEY NSW 2001) or contact Standards Australia's agent the TCA on 8922 9666, (fax 8922 9600, email mbant@ozemail.com.au or PO Box 37121 WINNELLIE NT 0821).



Testing & Tagging of leads and portable tools/equipment

The Board recently reviewed the requirements of AS/NZS 3760 for 'Testing & Tagging' of portable equipment and leads in the workplace. It was decided that a licence was not

required for this testing work as long as there was no assembly, disassembly or repairs carried out to the equipment.

The *Work Health Act* requires the testing & tagging to be carried out by a competent person who must be able to evidence their competence on request by Work Health officers.

• • • POINTS TO PONDER • • •

By Peter Donovan, Trade Contractors Manager, TCA

In my column last issue I touched on our reluctance as business people to pay for ongoing trade training. This column drew many different reactions. Some took the message to be an attack on the trade, and on the people working within the trade.



While there was never any intention of attacking people working within the electrical industry, the article was written with the intention of making people stop and have a think about their own currency of trade training.

I don't think there would be any reasonable people out there, who would think, just because they work in the trade all the time, that they know everything there is to know about that trade.

I feel that this view is shared by the majority of contractors and electrical workers I have spoken to, especially in light of the number of people who have responded to the surveys we have circulated in regard to updated trade training.

The general consensus is that most people want access to relevant and economical trade training. To this end we are working on a range of courses that will benefit the trade.

My 'Point to Ponder' this month is this: *'What are the consequences of NOT having the Certificate Of Compliance (COC) linked to the building Certificate of Occupancy or to the sale of a house?'*

Let me explain. There is currently no requirement under the Building Act to produce an Electrical Certificate of Compliance, to obtain a Certificate of Occupancy. There is also no legal requirement for

either a Certifier or builder to ask for one.

However, as an Electrical Contractor under the Electricity Reform Act, you are required to issue a COC for any new work you carry out. This means that even though the Certifier requires a Pest Certificate, a Plumbing Certificate and myriad other pieces of documentation, there is no legal procedure under the Building Act to require the electrical work to be safe or to a standard.

As an industry, why are we not voicing our concerns to the Director of Building Branch to add weight to the concerns that have already been expressed by our industry regulator?

On the subject of making it mandatory to have COC linked to the sale of an existing property, we would need to lobby the Real Estate Institute and the insurance councils to have the COC as a mandatory part of the sale process.

If consumers were made aware that they could not sell their house at a later date because they did not have a COC for the lights and fans they put into their new verandah extension, then don't you think they would demand this documentation? Remember, this documentation can only be issued by an Electrical Contractor, not by an unlicensed person.

Currently, there is nothing stopping a homeowner getting his extension

done legally with the right building permits etc, and then engaging a sparkie to wire in a few lights and fans at mates' rates and then have no paperwork issued. Who does this affect? You, the legitimate contractor who is trying to make a living doing the right thing, charging the right rates and issuing the

right paperwork.

Linking the COC to both the Certificate of Occupancy and the sale process will considerably slow down the backyard traders, because the consumer will demand the correct paperwork. We should, as an industry, also lobby government to provide more funds to better educate the consumer on the need to ask for a COC and the way in which a lack of correct documentation can impact on them later.

If the COC was linked to the sale process in the same way a building inspection or pest inspection is, then it creates more demand for the electrical industry. **YOUR INDUSTRY!**

Without change and tighter controls, complaints of unlicensed work will continue and your business will come under increasing pressure from unscrupulous and unlicensed workers.

If you wish the system to stay the same then do nothing, but if you would like to see change then contact me at the Territory Construction Association (TCA) office on 8922 9666, mobile 0421 991 787, or e-mail me on mbant@ozemail.com.au

If you have any suggestions or ideas on how you would like to see these issues addressed, then fax them to me on 8922 9600.



NEWS FROM THE SOUTH

ALICE SPRINGS, TENNANT CREEK AND YULARA

Towards the end of last year and the first few months of this year we have seen some large building construction being carried out in our area. In Alice, some of the work included the Hospital, the Convention Center, Murray Neck's and in Tennant Creek we saw the Sleeper Plant take shape.

I was in Tennant Creek in May this year and was fortunate enough to be given a tour of the Sleeper Plant in full production. I found it fascinating.

Some other activities we have had this year include the morning where we had approximately 30 contractors come along to breakfast at MM Electrical Merchandising. It was held on Wednesday 20 February and organised by Peter Donovan, Trade Contractors Manager, from the Territory Construction Association (TCA).

While Peter was in Alice he also organised a stall in the Yeperenye Shopping Centre and, with our assistance, provided advice to the public. Peter is very approachable, so if you have any issues you wish to discuss with him, I am sure he will be only too happy to help you out. He can be contacted on 8922 9666.

We also had Tim Hallen (Chief Electrical Safety Officer) from Darwin speak to us on the responsibilities of the Electrical Contractor. Two main points raised were

- 1) The importance of issuing COCs for all installation type work carried out as part of the contractor's duty of care. On the completion of a job the installation should be tested and a COC completed before supply is connected. A copy of the COC needs to be issued to the customer within 30 days. This is important, as it is the owner/operator's duty of care to make sure they receive a COC for any work carried out.
- 2) When your electrical contracting activities are due for auditing, you may choose either face to face 'Desktop Audit' (only offered to contractors who live in the Territory) or a 'Reflective Audit Package' where the contractor completes within six weeks and posts back to Electrical Safety.

They may seem an imposition at first, however, they are intended to assist you in recognising any shortcomings and provide constructive feedback on those areas that you may need to address. So if you have received an audit package and haven't completed it as yet, talk to a contractor who has; I'm sure he will tell you he didn't find it too daunting.

On Wednesday 20 March the Electrical Licensing and Contractors Board met in Tennant Creek. Tim Hallen was in Tennant for the meeting and held an open forum between 11.30am and 1.00pm. There were approximately eight contractors in attendance.



Information sessions such as these are a great benefit to the contractors and provide good feedback to the Electrical Safety Department. Hopefully we will be able to organise more in the future.

See you on site.

Richard Drummond (Senior Electrical Safety Officer ASP)



SHOCKING TALES

Random cases from the vault

An electrical worker received a minor electric shock while trying to remove a three phase rotary cam switch located in an awkward position.

The isolation point at the switchboard was not indelibly marked.

As a result, the electrical worker was isolating circuits randomly in an attempt to isolate supply to the cam switch.

Eventually the electrical worker found a circuit breaker that seemed to isolate supply.

The electrical worker employed poor testing skills in that he was only testing terminals at random on the switch, and he did not confirm that all terminals were de-energised before proceeding with the removal - at which time he received an electric shock.

An electrical worker was required to repair a fixed electrical appliance, which was hard wired.

An electrical isolator was located next to the appliance, but was damaged and could not be used.

The electrical worker isolated the supply at the switchboard by turning off what he thought was the appropriate circuit breaker.

The electrical worker did not carry out any tests to determine if the supply to the appliance had actually been isolated.

The electrical worker had begun to dismantle the electrical isolator to replace the damaged components and disconnect the electrical appliance when he received an electric shock.

A subsequent investigation found that two labels on the switchboard had been transposed during the original installation - the electrical worker had isolated the wrong circuit.

When are RCDs required?

I have had a lot of inquiries from contractors regarding RCD protection. Most are still not sure when they are required. AS3000:2000 Rule 2.5 (PROTECTION AGAINST EARTH LEAKAGE CURRENT) explains it quite clearly.

As for **where** they are required, the following rulings apply

Rule 2.5.3.1 (Domestic electrical installations) protect final sub-circuits supplying socket-outlets and lighting.

Rule 2.5.3.2 (Residential-type areas of electrical installations) protect final sub-circuits supplying socket-outlets.

Rule 2.5.3.3 (Other electrical installations) where there is an increased risk of an electric shock, protect socket – outlets not exceeding 20A.

The difference is that in Rules 2.5.3.1 & 2.5.3.2, RCDs must be installed at the switchboard to protect the final subcircuit. In rule 2.5.3.3, the RCD only needs to protect the socket outlet/s affected, i.e. the RCD may be installed in the switch board or be integrated into the socket outlet.

Rule 2.5.3.4 (Alterations, additions and repairs) is probably the one that causes more confusion for some contractors. It reads as follows

“The requirements of clauses 2.5.3.1, 2.5.3.2, 2.5.3.3 **need not** apply to the following alterations, additions or repairs in existing electrical installations:

- a) Where socket-outlets are added to a final subcircuit, provided that the existing subcircuit is not RCD protected.
- b) Where socket-outlets are added to a final subcircuit, provided that the existing socket-outlets on the circuit are not RCD protected.
- c) Where points are added to a final subcircuit in a domestic or residential-type area of an electrical installation, provided that the existing final subcircuit is not RCD protected.
- d) Where socket-outlets or points that are not RCD protected are replaced.”

So, if you add a socket-outlet to an existing circuit that is not RCD protected, there is no need to install an RCD. As soon as you add a new circuit, then that new circuit will have to be RCD protected.

Of course an astute contractor employed to install socket-outlets to an existing circuit would point out the benefits of installing RCD protection to the installation to the customer.

Richard Drummond

Quick Quiz

The following quiz is based on AS/NZS 3000:2000, Wiring Rules. Using the clues and the index, find the relevant clause within AS/NZS 3000:2000. Answers are on page 8.

- 1 Intended to isolate supply after detecting a residual earth current.
- 2 How much space should be provided around a switchboard.
- 3 The free air flow around or through luminaires shall not be impeded by thermal insulation.
- 4 A space not less than 100mm shall be provided between different underground services.
- 5 What parts of an MEN system influence the fault loop impedance.
- 6 Should an automatic fire pump motor be provided with a manual isolating switch.
- 7 How should the main earthing conductor be arranged at the main switchboard.
- 8 Metallic water piping shall be provided with equipotential bonding.
- 9 Earthing conductors shall be protected against mechanical damage
- 10 An independent isolator is required for every water heater.



News from
the EWCLB

Application delays

Applications for new and renewal of licences are normally processed within 10 working days; however there are often delays due to lack of information supplied on or with the application form.

It is essential that the forms are filled out correctly and that requested attachments are supplied to ensure an expedient assessment.

One of the most common problem areas with renewals is in Part 2 of the 'Application for Renewal of Electrical Worker's Licence'. Part 2 asks for details of electrical work done during the period of the licence. The Board needs this information, as it has to evaluate if the applicant

is doing electrical work, thus keeping abreast of the latest rules and regulations.

Therefore, what the Board requires is the types of work you are doing – *not who you are working for*. Failure to supply this information could result in the Board requiring the applicant to undertake refresher training before renewing the licence.

In the case of renewals, be sure to renew on time as expired really means expired. Late applications for renewal will be rejected, resulting in the need to lodge a full new application.

It should also be noted that any work carried out during an expired period is unlicensed work, as any new licence issued would not cover the expired period.

Apprentice Profiling

Where to from Here?

The system of assessing apprentices has been in a state of change now for the last couple of years as the industry has searched for a replacement to the traditional logbook system and the traditional methods of assessment during 'on the job training'.

While several different models and approaches have been looked into and assessed, it was thought the 66 essential performance capabilities, along with profiling and the capstone testing, that had been agreed to by all stakeholders in the industry, was going to be the end of the issue.

It has been argued for quite sometime that the logbook system was quite onerous and did not achieve the desired result of offering a quick evaluation of the type of industry experience that an apprentice was being exposed to.

The profiling system is based on the apprentice completing a form that is in a 'Tick a Box' format. The apprentice ticks off in the box the types of work he has carried out. The boxes cover, in summary form, all different work aspects likely to be covered by an apprentice during his on the job time. The profiling sheets are then collected and analysed by the relevant date capture agencies and the results forwarded to the ROT, employer and the apprentice.

This system easily tracks the type of work being carried out by the apprentice and advice can then be given as to what areas in which the apprentice may need to be given more training or has already spent enough time.

It is far easier to scan a profiling sheet than it is to go through a hand written logbook and assess the types of work being carried out by the apprentice. This is especially important in light of the competency based training system the industry operates under.

As with any type of reporting system there is a cost involved. The traditional logbook system, if it is being administered correctly, is estimated to cost about \$420 per apprentice per year. The profiling

system costs around \$120 per apprentice per year.

Traditionally the logbook was only ever used as supporting evidence of what work the apprentice was being exposed to. Rarely was it studied in detail to substantiate whether or not an apprentice was receiving broad based industry training. This was partially because there would have been a huge cost to industry for someone to make an assessment of the details contained in it.

The profiling system, while having a cost attached, produces far more valuable information for the apprentice and the industry as a whole. It can strengthen the quality of training being delivered and therefore the quality of tradesperson going into the industry.

While the profiling system goes hand in hand with the competency based training system being adopted by industry, there has been little thought given for the ongoing funding of the profiling scheme. This is a disturbing situation, given that the profiling system has been around now for about 18 months.

ANTA bore the first round of funding costs to get the profiling system up and running but the issue of ongoing funding has not been yet sorted out and is becoming a pressing problem for industry.

NECA, while supportive of the profiling system and the outcomes being produced from it, is against any cost being incurred for the system by either the employer or the apprentice.

NECA has requested that ANTA convene a meeting between all interested parties in an attempt to find a solution to the current funding impasse.

Hopefully, for the sake of the apprentices and the industry, this

situation can be remedied in the immediate future.

Ken Kernich, NECA

MARTY'S MOMENT

A trap for a young player. During a recent electrical accident investigation I found a Heinemann CF3 device rated at 100A with an orange operating handle.

Can you identify it?

Was it a 100A motor start circuit breaker?

At a casual glance it may have been mistaken for a 100A motor start circuit breaker. Examination showed it was actually a 100A isolator, no thermal or magnetic elements were installed in the device, and it actually had the word 'isolator' printed on it.

This isolator had been installed at the start of a 35mm² 3-phase run; on the load side of the device was a 200A switch, connected to a 200A CFS by several 70mm² conductor. The switch and isolator were mounted side by side, the CFS was mounted several metres away.

It appears an error was made by the person installing the device, (consider why two isolators were mounted side by side, and why protect a 35mm² cable with a 200A CFS).

The device has a rupturing capacity of 3kA; this was not sufficient for the prospective fault current for that installation.

To cut a long story short, an arcing fault occurred at the remote end, causing the isolator to fail and welding one contact closed.

The events of this investigation highlight the need to ensure protective devices are adequate for the job.

I have been asked questions lately about electrical equipment and the suitability of that equipment in various installations. There are two main categories all electrical equipment falls into – 'prescribed articles' and 'all the rest'.

Prescribed articles are listed in legislation by state electricity regulators, and are typically things associated with domestic use like hot water services and clothes dryers, hair care applications, irons and jugs and wall switches, lamp holders and socket outlets are on the list.

Briefly, there are two models used in Australia for the approval of prescribed electrical articles. The models identified by the Electricity Regulator's method of ensuring compliance are

Pre-market intervention

This process has been around for a while. In Australia prescribed articles can be submitted for 'type' testing by an Electricity Regulator prior to sale. After this type testing an electrical article may be approved for use.

This type testing and (possible) subsequent approval allows an article to be installed in a specific range of circumstances. For example, an IP56x socket outlet is tested to ensure it meets the requirements set out under many Australian Standards, including its ability to resist penetration of solids, liquids and possibly impact.

Post-market surveillance

This process is very new. The prescribed articles still must be tested, however the big difference is **who performs the testing**. The manufacturer (or a third party) may engage an approved testing laboratory to test these articles as being suitable for the specified use.

The surveillance part is performed from time to time by the Electricity Regulators, to ensure the articles are, amongst other things, tested by the manufacturer.

It should be made very clear that all 'prescribed' articles must be tested and approved prior to sale in Australia; they may be tested by their manufacturer or by an Electricity Regulator.

How should a person get information about prescribed articles in the Northern Territory? There are two main sources - the manufacturer or importer of the article or the Northern Territory Electricity Safety Regulator (Electrical Safety).

The manufacturer or importer should be your first avenue, and if you ask for an 'approval certificate' for a particular article, you should get the information you need.

If for some reason you doubt the information you have been offered or you cannot receive the required information, you can contact Electrical Safety.

Electrical items that are not prescribed (all the stuff not appearing on the prescribed articles list), must still meet applicable Australian Standards, however the prior approval from an Electricity Regulator of these items is on a voluntary basis.



If voluntary approval is sought prior to sale in Australia, there can be some comfort (from the installer's and end user's point of view) if the article meets the appropriate Australian Standards. In these cases a 'certificate of suitability' is issued.

What articles are 'prescribed'? You can contact the manufacturer or importer of the article (this should be your first option) or Electrical Safety (if you have no luck).

If you require more information on this topic, please contact Electrical Safety.

ROBIN'S RAMBLE

Modifications to Switchboards

AS/NZS 3000:2000. Clause 2.9.1 Requirements

A switchboard or switchboards shall be provided in an electrical installation for the mounting or the enclosure of switchgear and protective devices.

A main switchboard shall be provided for each electrical installation for the location of the main switch or switches when the multiple earth neutral (MEN) system of earthing is used.

Switchboards complying with the relevant requirements of the AS 3439 series of Standards are considered to meet the requirements of Clause 2.9.2.

AS 3439 series of Standards sets out the minimum requirements for the construction of switchboards.

If an electrical contractor modifies a switchboard and/or escutcheon panel, then the contractor must ensure that the modification also meets the minimum requirements of the AS3439 series of Standards.

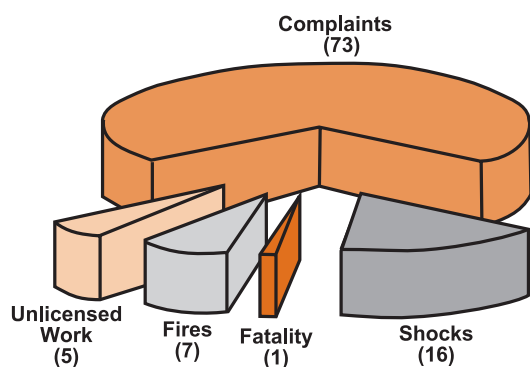
Investigations by Electrical Safety Operations

Investigations Undertaken, September 2001 to February 2002

As part of the Electricity Safety Regulator, Electrical Safety Operations are employed to establish and enforce proper safety and technical standards for electrical installations.

As such, we are required to undertake a range of investigations, including Fires, Shocks, Electrical Fatalities, Unlicensed Electrical Work and Complaints regarding Non Compliant Work.

The graph below indicates the range of work and number of investigations undertaken from September 2001 to February 2002.



ELECTRICAL SAFETY'S NEW CONTACT DETAILS

DARWIN

Minerals House, Ground Floor
66 The Esplanade Darwin
GPO Box 4821
DARWIN NT 0801

Telephone: 08 8999 5522

Facsimile: 08 8999 5141

ALICE SPRINGS

Peter Sitzler Building
67 North Stuart Highway
PO Box 8193
ALICE SPRINGS NT 0871

Telephone: 08 8951 8501

Facsimile: 08 8951 8681



News from the EWCLB

Responsibilities of 'Nominees'

Being a nominee on an Electrical Contractor's Licence brings with it additional responsibilities to just being an Electrical Worker. When you sign off on a Certificate of Compliance you take the responsibility as the technical manager of the Contractor's Licence for

- the safe design of the work,
- the selection and supply of the correct materials/equipment,
- the correct installation of material/equipment,
- ensuring that the worker/s doing and testing the work are competent to do so.

Disciplinary actions

One of the functions of the Licensing Board is to deal with complaints involving

breaches of the Act both by licence holders and non licence holders.

It is essential, for the safety of electrical workers and the general community, that only competent trained persons carry out electrical work.

The Board relies on the electrical industry and general public to bring to its attention unlicensed and non-compliant work or working practices.

Since the last edition of *The Conduit*, several breaches of the licensing legislation have been brought to the Board's attention and dealt with.

The offences included such matters as unlicensed work both carrying out work and contracting, insufficient supervision of workers, dangerous and non compliant work and included an interstate contractor crossing into the Territory to do a job without first gaining an NT licence.

QUICK QUIZ ANSWERS

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|------------|---------------|
| 1. 1.4.73 | 6. 7.10.9.1 |
| 2. 2.9.9 | 7. 5.6.3.1 |
| 3. 4.3.6.3 | 8. 5.8.2.2 |
| 4. 3.11.4 | 9. 5.5.4.2 |
| 5. B4.3 | 10. 4.3.9.2.3 |

DO YOU NEED ASSISTANCE?

Electrical Safety officers are available on request to talk to you and conduct education sessions at your workplace. Please contact Electrical Safety on 8999 5522.