



Electrical safety inspections

'Helping our customers stay in business by reducing risk'



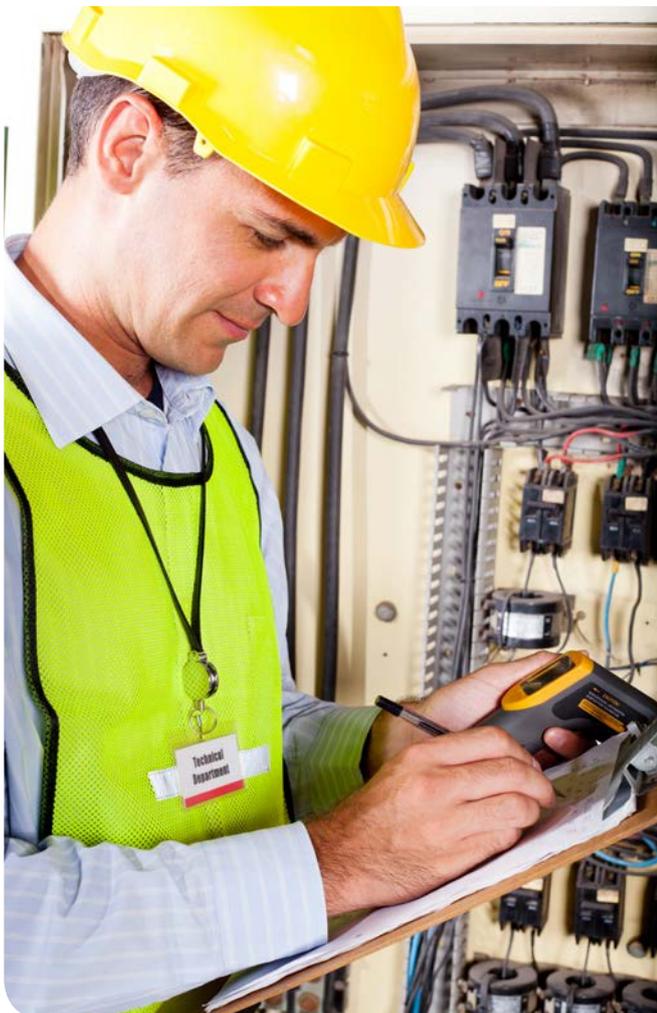
NZI Risk Solutions™

About NZI Risk Solutions

NZI has extensive experience in providing expert risk management advice to help our commercial customers remain in business. We have used this industry knowledge and developed a suite of fact sheets covering risk management issues to help you to take control of your business risks.

Electrical Fires

Electrical fires represent a high percentage of fire insurance losses in industry and often these losses are 'large scale' fire incidents. Fires are commonly caused by loose electrical connections, weakening of insulation and poor maintenance of electrical equipment. Legislation requires specific preventative action – disconnecting, isolating and making safe any defect which constitutes an electrical hazard to persons, livestock or property.



The need for electrical installation inspection and maintenance

All electrical installations need regular maintenance. Switchboards wear and need replacement as time progresses; demands on the installation change or network system upgrades affect fault-trip levels. Related electrical shortcomings continue to account for a high number of fire losses in New Zealand. To minimise the potential for such losses, it is necessary to complete regular ongoing inspection and maintenance.

Electrical Safety Inspection items classified as 'requiring urgent attention' means the safety of those using the installation may be at risk. Arrangements should be made for a qualified electrician to undertake the necessary remedial work without delay.

Electrical regulatory safety obligations

Under health and safety legislation, business owners and operators have a responsibility to ensure a safe work environment for all employees and visitors – it starts with awareness, acceptance and action. The Electricity (Safety) Regulations 2010, specify a range of documentation that should be kept on-site to record electrical work on electrical systems (including electrical system maintenance). Take a look at your record management practices to ensure they're up to date and compliant.

Recording electrical maintenance work

Regular work records for all electrical maintenance work completed at commercial premises will demonstrate the company's safety due diligence, and will be required to support inspectors in conducting regular safety audits in future.

Standards and certification

The general content of electrical safety inspections in Australia and New Zealand is prescribed in the joint standard **AS/NZS 3019:2007** (Electrical Installations – Periodic Verification). This standard makes specific provision for three levels of inspection:

- ▶ Basic visual inspection
- ▶ Visual inspection and limited testing
- ▶ Visual inspection and full testing.

A report is issued after an inspection. This report provides valuable information on the status of an electrical installation and should be retained for future use. For safety reasons, additional electrical inspections should be carried out within the recommended time frame, as directed by a qualified electrical inspector or electrician. Usually this is a period of between 1 and 4 years. Please refer to the relevant regulations to ensure you're compliant.

Note: A Certificate of Periodic Verification is required annually by NZI for all non fire-rated foamed plastic panel construction – such as expanded polystyrene panel construction.

"The modest cost of an electrical safety inspection may prevent one of the ongoing 'large scale' insurance losses through fire – often these losses can amount to millions of dollars."

Thermal imaging

Businesses should not be lured into a false sense of security thinking that thermal imaging is the complete answer to preventing fires of electrical origin. An electrical safety inspection for a full certificate of verification in accordance with AS/NZS 3019:2007 (Electrical Installations – Periodic Verification) needs to be carried out. In basic terms there are several steps in this process:

- ▶ Visual inspection of the switch board with the panels off
- ▶ Infra-red heat scanning of all connections
- ▶ Thermal imaging of any hot-spots detected
- ▶ Earth-fault loop impedance testing of the switch board and its connections.

This is followed by an inspection of lighting, socket outlets, cables, earthing and metering points. Only once this has been completed can a Certificate of Periodic Verification be provided.



Electrical safety inspection reports

Electrical safety inspection reports include a list of recommended actions necessary to bring the installation to an electrically safe condition, as detailed in the current Electrical Wiring Rules for New Zealand. In many cases, factories and industrial businesses will be able to run at their usual capacity and an inspection will not cause disruption to their working day.

Benefits of an electrical safety inspection

An electrical safety inspection can:

- ▶ Be performed while equipment is operating
- ▶ Increase overall safety of operations
- ▶ Extend electrical installation life through proper maintenance
- ▶ Reduce energy costs
- ▶ Reduce or eliminate emergency repair costs and downtime
- ▶ Be used to forecast possible installation breakdowns
- ▶ Allow critical repair parts to be available for maintenance shutdowns
- ▶ Provide a Certificate of Periodic Verification to meet New Zealand Standards.

Other electrical safety inspection benefits can include preventing extensive equipment damage and the financial impacts of production delays, following a loss.

Finally, the modest cost of an electrical safety inspection may prevent one of the ongoing 'large scale' insurance losses through fire – often these losses can amount to millions of dollars.

Take control

We hope you find this information useful and we encourage you to manage your business risks by implementing these risk control measures.

www.nzi.co.nz

These guidelines are of a general nature only. They are not intended to be a comprehensive list of all the steps you should consider taking to reduce the risk of damage and financial loss resulting from electrical fault fires, nor is it intended to be legal advice.

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