



**Industry Support Infrastructure
Program (Certification, Registration
and Licensing)
For
Electrical Engineering Safety
2008 - 2012**

A basis for oversight of high risk areas

Program for establishing regulatory oversight arrangements for key electrical engineering safety high risk area of High Risk Plant (including Hazardous zone plant) and the key risk control of competent mine electrical engineers and personnel repairing hazardous zone plant.

TEST BEFORE YOU TOUCH

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INDUSTRY SUPPORT INFRASTRUCTURE PROGRAM 2008-12 V2

Foreword

This document should be read in conjunction with the Strategic and Operational Plan for Electrical Engineering Safety in the NSW Mining and Extractives Industry. It deals with a program of activities that support the industry in high risk areas. These activities are an essential tool in achieving specific DPI Mine Safety targets for electrical engineering safety within the mining industry. The activities encompass:

- Competencies of coal operation managers of electrical engineering. Managers of electrical engineering at coal operations must understand all the electrical engineering safety risks and how to manage those risks to a tolerable level – competency examinations seek to establish that understanding and management capability
- Hazardous area electrical equipment specifications. Hazardous area equipment specifications rely on credible certification schemes
- Repair of hazardous area equipment. Repair of hazardous area equipment relies on national schemes for accreditation of repair workshops
- Licensing of cable repair workshops that repair of cables used in hazardous areas. Licensing of cable repair workshops will be conducted by the DPI
- Registration of high risk plant. Registration of high risk plant will be conducted by the DPI for high risk plant unique to the mining industry

A structured Infrastructure program will:

- Provide people who are competent to manage electrical engineering safety at underground coal mines.
- Give a high degree of confidence that electrical Ex plant is explosion protected and conforms to set standards when it is manufactured, overhauled, repaired and modified.
- Give a high degree of confidence that flexible cables are returned to a suitable condition after repair.
- Provide a basis for a high degree of confidence that high risk plant is fit for purpose.
- Embody the minimum expectations of the community.
- Embody the minimum expectations of the regulator.

John Francis Waudby
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Purpose of this Document

For a number of years The Inspectors of Electrical Engineering have been actively engaged in an improvement project designed to deliver a model for operating that will be best practice.

The result is a construct consisting of a solid foundation based on the Corporate Plan, RIMS, and the Strategic Plan for Electrical Engineering Safety, through to development of documented assessment criteria, and work plans that are designed to deliver our objectives in accordance with identified priorities.

The IEE will continually improve industry support infrastructure processes so that they always reflect the electrical engineering safety aspirations of the DPI and the Mining Industry.

The Infrastructure Program will be integrated with the Industry Standards Program and the Special Projects (High Risk Plant) Program and will be used by Inspectors of Electrical Engineering to:

- Advise competency requirements for managers of electrical engineering at coal operations
- Utilise national and international schemes for certification of equipment and workshops as a basis for specifications gazetted by the Chief Inspector.
- License cable repair workshops that repair of cables used in hazardous areas.
- Provide electrical engineering safety advice and input to the registration of designs of certain high risk plant.
- Prepare work plans for a 1 year and 3 year outlook.
- Solicit constructive comment on our transition from approvals to utilisation of national and international certification schemes.
- Show other officers in the DPI what we are trying to do and why we are trying to do it.

Other industry stakeholders will benefit from the document by being able to align their expectations with a documented plan, and participate in industry infrastructure programs (accreditation, certification, licensing, registration, and advisory groups), knowing why all of this is required and how to gain acceptable accreditation, certification, licensing or registration. In particular mines will be able to integrate infrastructure programs and outcomes into the electrical engineering management plan for a coal operation.

Internal and external organisations will be able to adjust their own processes to integrate with the processes documented here for greater efficiency and effect.



Industry Support Infrastructure Program

Competencies for Electrical Engineers (Coal Operations)

Overview

OBJECTIVES

Electrical engineers nominated in coal operation management structures are competent.

Competencies of electrical engineers nominated in coal operation management structures are formally assessed through the coal competence board.

OUTCOMES

Electrical Engineering safety at coal operations is managed in a manner that prevents death or injury.

Decisions affecting electrical engineering safety are made by competent mine electrical engineers.

STRATEGIES

Provide advice to the Coal Competency Board on competency requirements for coal operation electrical engineers.

Participate as examiner on the Coal Competence board examination panel.

Provide advice to MITAB on competencies for mine electrical engineers.

Maintain examination requirements for underground and surface coal operations (although formal statutory positions are only required for managers of electrical engineering at underground coal operations).

Transition from an examination based assessment to an “engineering practice report” & peer interview assessment.

Long term transition to an Institution of Engineers Australia administration, with DPI participation.

RESOURCES:

SIEE & IEE on the examination panel.



Industry Support Infrastructure Program Hazardous Area Equipment (Underground Coal Operations) Overview

OBJECTIVES

Continued acceptance of nationally or internationally certified equipment as suitably explosion protected for use in underground coal mine hazardous zones .

Assess and continuously monitor the suitability of national and international equipment certification schemes.

Systematically “cull” approved explosion-protected electrical equipment.

Mines to only use “certified” electrical explosion-protected apparatus in hazardous areas by the year 2015.

The repair of electrical explosion-protected equipment is only done at nationally or internationally accredited workshops.

License Ex repair facilities as per the requirements of legislation.

The repair of flexible cables is only done at licensed workshops.

The repair of flexible cables is overseen by recognised competent people.

OUTCOMES

Equipment is designed and verified as explosion-protected

Equipment is returned to a certified condition and “as new” condition when it is repaired.

Mines have responsibility for ensuring electrical equipment used in hazardous areas is fit for purpose throughout its life-cycle.

Electrical equipment for use in coal mines is certified in accordance with community expectations.

The mining industry is appropriately aligned with general industry.

The new system provides for at least the current standard of equipment.

There are no interstate or international legislative barriers to the use of equipment in hazardous areas.

The DPI has zero approvals of electrical explosion-protected equipment to manage

STRATEGIES

Communicate with and seek input from mines, manufacturers, certification bodies, test laboratories, scheme administrators and other key stakeholders how this program will be implemented.

The DPI’s role changes from approver to assessor of mine site activity for life cycle management of Ex equipment. Continuously monitor the use of IEC Ex certified equipment that has not been certified by an Australian Certification Body.

Continue to participate in the Ex scheme management committee.

Maintain good communications with Ex scheme administrators and Australian Test Laboratories.

Review selected equipment against design standards, registration schemes and certification scheme requirements. This review to be done by the MSTC or other nominated body.



Industry Support Infrastructure for Electrical Engineering Safety

Management of old Ex approvals (MDA) such that equipment has been assessed as explosion protected can continue to be used.

Revoke old approvals of equipment that is obsolete.

Review reportable incident data relating to failure of Ex equipment and utilise the information in appropriate forums.

Implement the national scheme for “accreditation” of workshops that repair and overhaul Ex equipment.

Participate in Australian Standard development of hazardous area competencies.

Recognition of current Ex competent persons in accordance with prior learning principles, in the area of hazardous area electrical competencies.

License Ex repair facilities as per legislation.

Develop and implement competency criteria and assessment criteria for Competent Persons – Cable Repairers.

Implement cable repair workshop criteria for licensing

Annual assessment of cable repair workshops against the set criteria

License workshops that repair flexible cables.

Review reportable incident data relating to cable arcing in a hazardous zone and utilise the information in appropriate forums.

Collect cable damage data from licensed cable repair workshops and utilise the information in appropriate forums.

Explore the possibility of establishing an alternative to licensing cable repair workshops – the alternative must provide for a level of confidence greater than or equal to licensing.

Integrate with the Special Projects (High Risk Plant) Program. (All underground mines visited at least once per year. Note the use of IEC Ex certified equipment that has NOT been certified by an Australian Certification Body to be monitored.)

Integrate with the Industry Standards Program.

RESOURCES:

SIEE, MSO Electrical Engineering, MSTC Thornton

MSO Electrical Engineering to assess how underground mines manage Ex equipment. All underground mines visited at least once per year. Note the use of IEC Ex certified equipment that has NOT been certified by an Australian Certification Body to be monitored.

MSTC to review design and certification on an as needs basis.

Inspectors of Electrical Engineering assess mine ex management routinely

Inspectors of electrical Engineering investigate incidents of Ex failures and cable arcing.



Industry Support Infrastructure Program High Risk Plant (Underground Coal Operations) Overview

OBJECTIVES

A process for registration of high risk plant.

The upgrade of mine winders to contemporary “electrical” standards.

Design and item registration of all mine winders. (Joint Electrical and Mechanical)

Registration criteria for other “electrical” equipment requiring registration (Electric shotfiring apparatus, booster fans, gas monitoring equipment)

OUTCOMES

Mine winders.

Mine Winders comply with community standards, in particular MDG2005 (EES008).

Other electrical equipment

Higher risk equipment is evaluated for registration purposes as safe to use.

STRATEGIES

Mine winders

Communicate with and seek input from mines and other key stakeholders how the mine winder program will be implemented.

Mines to use competent persons to assess mine winders against MDG2005 (EES008).

DPI Electrical Engineering staff to assess registration applications against the criteria specified in MDG5002 (EES008).

The electrical portion of registration to only consider the actual mine winder equipment design.

Other electrical equipment

Communicate with and seek input from mines and other key stakeholders on registration requirements.

Use current approval criteria where applicable for design registration.

RESOURCES:

SIEE & MSO Electrical Engineering

Support from Inspectors of Electrical Engineering as required. Inspectors of Electrical Engineering to assess the mine winder registration applications and make recommendations as to registration.

