INDUSTRY PROCEDURE/GUIDELINES

ACCEPTANCE OF ELECTRICAL EQUIPMENT

OTHER THAN

ANZ EX OR IEC EX CERTIFIED EQUIPMENT

FOR INSTALLATION IN EXPLOSIVE ATMOSPHERES

(VERSION 2010-6)

THIS DOCUMENT SETS OUT THE PROCEDURES/GUIDELINES TO BE ADOPTED BY OWNERS OR OCCUPIERS OF ELECTRICAL INSTALLATIONS WHICH CONTAIN ELECTRICAL EQUIPMENT IN AREAS WHERE THE PRESENCE OF MATERIALS, SUCH AS FLAMMABLE GASES, VAPOURS, COMBUSTIBLE DUSTS, FIBRES OR FLYINGS, ARE GENERATED, PREPARED, PROCESSED, HANDLED, STORED OR OTHERWISE USED, AND WHICH ARE THEREFORE POTENTIALLY HAZARDOUS AS SPECIFIED IN CLAUSE 7.7 OF AS/NZS 3000:2007.

OPERATING VOLTAGES

It is stressed that the requirements of the Electricity Safety (Installations) Regulations 2009 apply to any electrical equipment or apparatus connected to an electricity supply in Victoria - including Extra-Low-Voltage.

Although neither a Certificate of Electrical Safety (CES) nor the requirement to hold an appropriate Electrical Workers Licence is necessary for Electrical equipment/apparatus operating at Extra-Low-Voltage, the work must be carried out by a 'Competent Person' as defined in AS/NZS 2381.1:2005 or AS/NZS 60079.14:2009.

Electrical equipment/apparatus operating at Extra-Low-Voltage must conform to the requirements of AS/NZS 2381.1:2005 or AS/NZS 60079.14:2009.

QUALIFICATIONS OF PERSONNEL

The design, construction, maintenance, testing and inspection of installations covered by AS/NZS 2381.1:2005, AS/NZS 60079.14 and AS/NZS60079.17:2009 shall be carried out only by competent persons whose training has included instruction on the various types of protection and installation practices, relevant rules and regulations and on the general principles of area classification.

The competency of the person shall be relevant to the type of work to be undertaken. Appropriate continuing education or training should be undertaken by personnel on a regular basis. Competency may be demonstrated in accordance with AS/NZS 4761, Competencies for working with electrical equipment for hazardous areas (EEHA), or equivalent training and assessment framework.

REFERENCED DOCUMENTS

The following documents are referred to in this document:

AS/NZS 3000:2007	ELECTRICAL INSTALLATIONS (KNOWN AS THE AUSTRALIAN/NEW ZEALAND WIRING RULES)
AS/NZS 2381 SERIES	ELECTRICAL EQUIPMENT FOR EXPLOSIVE ATMOSPHERES – SELECTION, INSTALLATION AND MAINTENANCE
AS/NZS 60079.10.1:2009	EXPLOSIVE ATMOSPHERES – CLASSIFICATION OF AREAS - EXPLOSIVE GAS ATMOSPHERES
AS/NZS 60079.10.14:2009	EXPLOSIVE ATMOSPHERES – ELECTRICAL INSTALLATIONS DESIGN, SELECTION AND ERECTION
AS/NZS 60079.10.17:2009	EXPLOSIVE ATMOSPHERES – ELECTRICAL INSTALLATIONS INSPECTION AND MAINTENANCE
AS/NZS 6124 SERIES	ELECTRICAL APPARATUS FOR USE IN THE PRESENCE OF COMBUSTIBLE DUST

GENERAL

In Victoria, Regulation 202 of the Electricity Safety (Installations) Regulations 2009, in part, states that;

> *"A person must not install, alter, repair or maintain an electrical installation or a portion of an electrical installation unless the installation or the installed, altered, repaired or maintained portion of the installation complies with Part 2 of the Australian/New Zealand Wiring Rules as modified …".*

Compliance with all the provisions of the Australian/New Zealand Wiring Rules (AS/NZS 3000:2007) is required to satisfy the intent of the above Regulation. Clause 7.7 of these Rules states that electrical equipment selected for use in hazardous areas shall be installed in accordance with the installation requirements of AS/NZS 2381.1, AS/NZS 60079.14 or AS/NZS 61241.14 as appropriate.

ELECTRICAL INSTALLATION WORK

In general, electrical installation work installed in a hazardous area is deemed to be prescribed electrical installation work. Section 45(1) of the Electricity Safety Act 1998 requires any person who is responsible for the carrying out of prescribed electrical installation work to ensure that that work is inspected by a licensed electrical inspector in accordance with the regulations.

> *Note: Regulation 238 (3) for the purposes of section 45 of the Act, prescribed electrical installation work does not include—*
>
> *(a) the repair or maintenance of a single component part of an electrical installation; or*
>
> *(b) the replacement of a single component part of an electrical installation by an equivalent component part at the same location.*
>
> *A single component referred to in subregulation (3) includes any terminating device required to connect that single part of an electrical installation to the electricity supply.*

The licensed electrical installation worker and the licensed electrical inspector should ensure that electrical equipment, covered by a Certificate of Conformity carrying ANZ Ex or IEC Ex Certification in accordance with IEC Ex Scheme Rules, is supported by the following;

- all relevant certification documents,
- drawings; and
- test reports.

This information is required to allow for the proper identification of the originally type tested equipment and to allow for repairs to be carried out in compliance with the certification conditions.

Equipment and installations where hazardous areas exist are required to comply with the applicable regulations in Victoria. It should be noted that an electrical installation may also come under the jurisdiction of other regulatory authorities with different areas of responsibility, e.g., occupational health and safety, etc.

The installation and maintenance requirements contained within Australian/New Zealand Standards AS/NZS 2381, AS/NZS 60079 and AS/NZS 61241 series are supplementary to, and not alternative to, any regulations, which apply to electrical installations in hazardous areas.

- Electrical equipment selected for use in hazardous areas shall comply with the appropriate requirements as specified in the various parts of AS/NZS 2381, AS/NZS 60079.14 and AS/NZS 61241 series of Standards.

- Electrical equipment shall be installed in accordance with the installation requirements of the various parts of the AS/NZS 2381, AS/NZS 60079 and AS/NZS 61241 series of Standards. The installation of electrical equipment shall be carried out in a manner that does not reduce the protection afforded by the electrical equipment design.

Guidance on additional inspection techniques and maintenance and repair methods is given in the various parts of the AS/NZS 2381, AS/NZS 60079 and AS/NZS 61241 series of Standards.

ASSURANCE OF CONFORMITY OF APPARATUS

Energy Safe Victoria will accept proof of compliance consistent with Clause 2.6.1 of AS/NZS 2381.1:2005 or Clause 4.3.2 of AS/NZS 60079:14 (refer to Annex ZD of this Standard).

USE OF CERTIFIED APPARATUS (CLAUSE 2.6.1 OF AS/NZS 2381.1:2005)

Certified apparatus shall be used as it provides the necessary assurance that the apparatus meets the requirements of the appropriate Standard.

Acceptable certification of apparatus shall be covered by a Certificate of Conformity which—

(a) is issued in accordance with a Type 5 Scheme complying with ISO/IEC Guide 67; and

(b) is issued by a body operating within the IECEx Scheme or by a certification body with accreditation by JAS-ANZ or an organization that has a Mutual Recognition Agreement (MRA) with JAS-ANZ covering Product Certification of Explosion Protected Equipment; and

(c) meets the requirements of Appendix G (AS/NZS 2381.1:2005).

Equipment certified under the IECEx Scheme and registered on the IECEx database (www.iecex.com) or the ANZEx Scheme registered on the SAI Global EPEE database (www.sai-global.com/database/epee) meets these criteria and no further consideration is necessary. Equipment certified under the AUSEx Scheme is acceptable within the certificate validity period.

USE OF CERTIFIED APPARATUS (CLAUSE 4.3.1 OF AS/NZS 60079.14:2009)

Equipment with acceptable certification according to hazardous areas Standards published as AS/NZS Standards, IEC Standards or AS Standards as listed in Tables 2.1 for gases and vapours or Table 2.2 for combustible dusts as appropriate is acceptable when selected and installed in accordance with this Standard.

Acceptable certification of equipment shall be covered by a Certificate of Conformity which—

(a) is issued in accordance with a Type 5 Scheme complying with ISO/IEC Guide 67; and

(b) is issued by a body operating within the IEC Ex Scheme or the ANZ Ex Scheme or by a certification body with accreditation by JAS-ANZ or an organization that has a Mutual Recognition Agreement (MRA) with JAS-ANZ covering Product Certification of Explosion Protected Equipment; and

(c) certification shall be issued by a Certification Body or agency with current accreditation or acceptance by way of independent assessment complying with ISO/IEC Guide 65. The accreditation or acceptance shall show Ex certification for an ISO Type 5 system in the Ex field, as part of their capability; and

(d) the certification system shall also require—

(i) testing of samples for compliance with relevant IEC Standards or Australian Standards;

(ii) assessment and audit of manufacturers by the Certification body, for compliance of their quality system according to ANZ Ex or IEC Ex requirements or equivalent; and

(iii) on-going surveillance audits of manufacturers, in accordance with ANZ Ex or IEC Ex quality requirements or equivalent, by the Certification body, responsible for issuing the Certificate. This does not preclude the Certification Body arranging to have surveillance audits conducted by another body operating as their agent.

Equipment certified under the IEC Ex Scheme and registered on the IEC Ex database (www.iecex.com) or the ANZ Ex Scheme registered on the ANZ Ex database (www.anzex.com.au) meets these criteria. Equipment certified under the AUS Ex Scheme is acceptable when manufactured within the certificate validity period.

NOTE For Ex 'v' installations and where Ex 'p' is applied to buildings, and the like, that are assembled and/or installed on site, certification may not be appropriate. In such cases a statement of assessment by a competent person may be accepted.

OTHER ACCEPTABLE CERTIFICATION

Apart from simple apparatus used within an intrinsically safe circuit, the use of apparatus not meeting the criteria of Clause 2.6.1 of AS/NZS 2381.1:2005 or Clause 4.3.1 of AS/NZS 60079.14:2009 should be restricted to circumstances where suitable equipment with acceptable certification is not obtainable.

The justification for the use of such equipment certified to an alternative Standard, along with the selection, installation, marking, inspection, maintenance, repair and overhaul requirements, shall be made by the person(s) in control of the installation using a competent body.

The justification shall be included as part of the verification dossier. This may take the form of a Conformity Assessment Document. Guidance for the preparation of a Conformity Assessment Document can be found in Annex ZD of AS/NZS 60079:2009.

Where apparatus to alternate Standards are accepted by the legal owners of the installation then any selection, installation, inspection, maintenance, overhaul or repair associated with those alternate Standards shall be nominated and followed. It shall be the responsibility of the legal owners of the installation to ensure that the justification for use is documented and placed in the verification dossier. Such justification shall be carried out by a competent person. The legal owners shall also **DOCUMENT ACCEPTANCE OF THE APPARATUS.**

Notes:

1. A competent person is defined in AS/NZS 2381.1:2005 as; "A person who can demonstrate a combination of knowledge and skills to effectively, efficiently and safely carry out activities in hazardous areas, covered by this Standard. Competency in some cases may be limited to one or more specific types of protection technique, e.g. Ex'd', Ex 'i', etc and/or activity (e.g. design, election, installation, maintenance, testing and inspection)".
2. For Group I installations such apparatus requires approval of the regulatory authority.
3. Regulatory authorities may specify additional requirements for acceptance of apparatus certified to alternative Standards, e.g. Notification, application for a 'Letter of No Objection', review by nominated parties. In such cases these requirements shall be followed.
4. A conformity assessment document is to provide evidence that a certificate to an alternative Standard can be demonstrated to provide an equivalent level of safety to AS/NZS or IEC Standards. This would normally involve a comparison of relevant Standards and verification that testing has been conducted by a third party.

ALTERNATIVE STANDARD CERTIFICATION (OTHER THAN ANZ EX OR IEC EX SCHEMES)

It is understood that specific items of electrical equipment may not have current ANZ Ex or IEC Ex certification in accordance with Clause 2.6.1 of AS/NZS 2381.1:1999 or Clause 4.3.1 of AS/NZS 60079.14:2009. However, electrical equipment to be repaired or replaced on a like-for-like basis, which was, installed in accordance with the Electricity Safety (Installations) Regulations 2009 or relevant predecessing Regulations, applicable at that time of installation or alteration, may be accepted on the following basis:

- Any electrical equipment installed in a hazardous area that is to be repaired or replaced on a like-for-like basis shall have appropriate certification relevant to all the regulatory requirements that applied at the time of original installation;
- Electrical installation workers repairing or replacing on a like-for-like basis shall verify that the electrical equipment installed in a hazardous area has appropriate certification relevant to all the regulatory requirements that applied at the time of original installation;
- The owner/occupier shall ensure that the relevant Australian Standard to which the electrical equipment was originally installed has not been changed for safety reasons that would affect the equipment being repaired or replaced or the suitability of the location in which the equipment is installed; and
- Complete certification documentation of any electrical equipment, repaired or replaced on a like-for-like basis as above, is available on site as appropriate for audit.

OTHER ACCEPTABLE CERTIFICATION

In Australia, electrical equipment certified to an alternative Standard to those referenced in Clause 2.4 of AS/NZS 2381.1:2005 or Clause 4.3.1 of AS/NZS 60079.14:2009, but shown to provide an equivalent level of safety, may be accepted by the relevant regulatory authority.

In Victoria, the regulatory authority is;

Energy Safe Victoria (ESV)

ESV - ACCEPTANCE OF ELECTRICAL EQUIPMENT CERTIFIED TO AN ALTERNATIVE STANDARD

In general, Energy Safe Victoria (ESV) does not intend to circumvent the certification requirements as indicated in AS/NZS 2381.1:2005 or AS/NZS 60079.14:2009. However, ESV, as the relevant Regulatory Authority, reserves the right to accept equipment certified to an alternate non-Australian/New Zealand Standard.

The following process is to be adopted when seeking approval for the use of electrical equipment in Victoria, for use in hazardous areas, certified to an alternative Standard.

THE APPLICANT MUST PROVIDE THE FOLLOWING INFORMATION;

1. All relevant technical details of the equipment – *see example below;*

2. Legible copies of certificates of conformity or other equivalent documentation related to the equipment. *Non-English certificates/documentation must be translated into the English language by a certified translator; and*

3. An agreement, in writing on the applicant Company's letterhead, to meet all reasonable costs incurred by the ESV in providing an assessment of the electrical equipment.

   [Refer Flowchart A]

APPLICATIONS SHOULD BE SUBMITTED IN WRITING TO,

The Director of Energy Safety
Energy Safe Victoria
PO Box 262
COLLINS STREET WEST, VICTORIA, 8007

AND PROVIDED WITH THE FOLLOWING DETAILED INFORMATION;

Installation Details	***Example***
➢ Owner/occupier's Name	**Bay Petroleum Ltd**
➢ Site Location Details	**Jetty Road, Yarrawonga**
➢ Area Classification	**Zone 2**
➢ Required Equipment Group	**IIB**
➢ Required Temperature Rating	**T3**
➢ Method of Protection	**Ex d**
➢ IP Rating	**IP55**

Equipment	
➢ Type	**Level transmitter**
➢ Manufacturer Name	**ZKK-Temp Corporation**
➢ Model Number	**FES – 145/34A**
➢ Electrical Ratings	**240 volt, 0.5-amp, 50 Hz**

Certification/Documentation Details	
➢ Certification/Technical Body	**LCIE (Laboratoire Central Des Industries Electriques)**
➢ Certificate Type	**Certificate of Compliance**
➢ Certificate Number	**LCIE 97.D5114 X**
➢ Certificate Date	**14 May 1997**

ESV APPROVAL WILL BE LIMITED TO AN INDIVIDUAL ITEM OF EQUIPMENT LOCATED IN A SPECIFIC AREA OF AN OWNERS/OCCUPIERS ELECTRICAL INSTALLATION.

EXTRA LOW VOLTAGE EQUIPMENT

In Victoria, electrical work performed on electrical equipment operating at extra-low voltage (ELV) does not require the person carrying out that work to be licensed as an electrical worker. However, the person must have the knowledge, skills, training and competencies to carry out the work in accordance with the appropriate Australian Standards.

Any electrical work must always be carried out in accordance with Section 43 of the Electricity Safety Act 1998 (*Safety of Electrical Installations*) and Regulation 202 of the Electricity Safety (Installations) Regulations 2009 (*Wiring Methods – Compliance with Australian/New Zealand Standards*).

Extra Low Voltage:	≤ 50 V a.c. ≤ 120 V d.c. (ripple free)	Not exceeding 50 V a.c or 120 V ripple-free d.c.
Low Voltage:	> 50 ≤ 1000 V a.c. > 120 ≤ 1500 V d.c.	Exceeding extra-low voltage, but not exceeding 1000 V a.c. or 1500 V d.c.
High Voltage:	> 1000 V a.c. > 1500 V d.c.	Exceeding low voltage

NOTE: Regulation 238 of the Electricity Safety (Installations) Regulations 2009 states;

> *For the purposes of section 45 of the Act, prescribed electrical installation work means work on all or part of any of the following electrical installations if they are ordinarily operated at low voltage or a voltage exceeding low voltage*

AUSTRALIAN/NEW ZEALAND STANDARD – REPAIR AND MAINTENANCE

For the purpose of these guidelines, the relevant repair and maintenance requirements, in general, are referenced within Australian/New Zealand Standards AS/NZS 2381.1:2005 or AS/NZS 60079.14:2009.

CERTIFYING ORGANISATION

FOR AUSTRALIA - ANZ EX SCHEME (AUSTRALIAN NATIONAL CERTIFICATION SCHEME)

STANDARDS AUSTRALIA QUALITY ASSURANCE SERVICES (QAS)
286 SUSSEX STREET
SYDNEY NSW 2000

TEL 02 8206 6962
www.qas.com.au

FOR AUSTRALIA - LISTING OF APPROVED TEST LABORATORIES

TESTSAFE AUSTRALIA (FORMERLY LOSC)
919 LONDONDERRY ROAD
LONDONDERRY NSW 2753

PO BOX 592 RICHMOND NSW 2753
TEL 02 4724 4900
www.workcover.nsw.gov.au

THE SAFETY IN MINES TEST AND RESEARCH STATION (SIMTARS)
2 SMITH STREET
REDBANK QLD 4301

PO BOX 467 GOODNA QLD 4300
TEL 07 3810 6333
www.dme.qld.gov.au/simtars/index.htm

INTERNATIONAL TESTING AND CERTIFICATION SERVICES (ITACS)
4-6 SECOND STREET
BOWDEN SA 5007

PO BOX 300 HINDMARSH SA 5007
TEL 08 8346 8680
www.ozemail.com.au/~itacs/

CERTIFYING AUTHORITIES - OTHER THAN AUSTRALIA

COUNTRY	PREFIX	ORGANISATION
AUSTRIA	TUV OSTERREICH	*TUV OSTERREICH E.V.*
BELGIUM	ISSEP	*INSTITUT SCIENTIFIQUE DE SERVICE PUBLIC (ISSEP)*
DENMARK	DEMKO	*FORMERLY DANMARKS ELECTRISKE MATERIELKONTROL*
FINLAND	VTT	*VTT*
FRANCE	LCIE	*LABORATOIRE CENTRAL DES INDUSTRIES ELECTRICUES (L.C.I.E.)*
	INERIS	*INSTITUT NATIONAL DE L'ENVIROMENT INDUSTRIEL ET DES RISQUES*
GERMANY	PTB	*PHYSILAKISH – TECHNISCHE BUNDESANSTALT*
	BVS	*BERGGEWERKSCHAFTLICHE VERSUCHSSTREKE*
ITALY	CESI	*CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO*
NETHERLANDS	NV KEMA	*NV KEMA*
NORWAY	NEMKO A/S	*NEMKO A/S*
SPAIN	LOM	*LABORATORIO OFICIAL JOSE MARIA MADARIAGA*
SWEDEN	SP	*SWEDISH NATIONAL TESTING AND RESEARCH INSTITUTE*
UNITED KINGDOM	EECS (FORMERLY BASEEFA)	*ELECTRICAL EQUIPMENT CERTIFICATION SERVICES*
	SIRA CERTIFICATION SERVICES	*SIRA CERTIFICATION SERVICES*
	INDUSTRIAL SCIENCE CENTRE	*INDUSTRIAL SCIENCE CENTRE*
CANADA	CSA	*CANADIAN STANDARDS ASSOCIATION*
UNITED STATES OF AMERICA	FM	*FACTORY MUTUAL RESEARCH CORPORATION*
	UL	*UNDERWRITERS LABORATORIES INC*

Electrical Equipment

Acceptance Process by ESV - Victoria

Flow Chart (A)