Assets Planning and Delivery Group
Engineering

HA-ST-11

Electrical Equipment in Hazardous Areas (EEHA)
Assessment of Non-AUS/NZ/IECEX Equipment Standard

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FOREWORD

Electrical Equipment in Hazardous Area (EEHA) Standards are prepared to ensure that the Water Corporation's staff, consultants and contractors are informed as to the Water Corporation's EEHA standards and recommended practices. EEHA standards are intended to promote uniformity so as to simplify selection, installation and maintenance practices; their ultimate objective is to provide safe and functional plant, at minimum whole of life cost.

The Water Corporation EEHA standards and recommended practices described in this EEHA standard have evolved over a number of years as a result of capital project delivery, plant operation and maintenance experience gained through the selection, installation and maintenance of electrical equipment in our hazardous area facilities.

Deviation, on a particular project, from the EEHA standards and recommended practices maybe permitted in special circumstances but only after consultation with and endorsement by the Senior Principal Electrical Engineer, Mechanical & Electrical Assets, Engineering.

Users are invited to forward submissions for continuous improvement to the Senior Principal Electrical Engineer, Mechanical & Electrical Assets who will consider these for incorporation into future revisions.

Head of Engineering

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Users should use and reference the current version of this document.

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REVISION STATUS

The revision status of this standard is shown section by section below:

REVISION STATUS						
SECT.	**VER./ REV.**	**DATE**	**PAGES REVISED**	**REVISION DESCRIPTION (Section, Clause, Sub-Clause)**	**RVWD.**	**APRV.**
All	1/0	24/08/12	All	Original (First) Version	-	-
All	1/1	04/04/12	All	Updated Formatting	FL	RC
All	1/2	30/11/13	All	Updated Formatting	AW	JO
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HA-ST-10
Electrical Equipment in Hazardous Areas (EEHA) Assessment of Non-AUS/NZ/IECEX Equipment Standard

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1 INTRODUCTION

AS/NZS60079.14 clauses 5.4.2 to 5.4.4 requires that electrical equipment in hazardous areas be protected by one or a combination of explosion-protection techniques specified in Table 2.1 (for gases) or Table 2.2 (for dusts). In addition to listing the allowable techniques, Table 2.1 and Table 2.2 also list the acceptable equipment standards. In general, these are either the Australian, Australian/New Zealand, or IEC standards.

In addition, AS/NZS 60079.14 requires that explosion-protected electrical equipment be certified as complying with these standards in accordance with the ANZEx, IECEx, or AUSEx schemes. Clause 4.3.1 states, in part:

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 IECEx Scheme or ANZEx 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 ANZEx or IECEx requirements or equivalent; and

(iii) on-going surveillance audits of manufacturers, in accordance with ANZEx or IECEx 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 IECEx Scheme and registered on the IECEx database (www.iecex.com) or the ANZEx Scheme registered on the ANZEx database (www.anzex.com.au) meets these criteria. Equipment certified under the AUSEx Scheme is acceptable when manufactured within the certificate validity period.

AS/NZS60079.14 also allows the use of 'other' equipment when suitable equipment with acceptable certification is not obtainable, provided that the justification for the use of the equipment is made by the person(s) in control of the installation using a competent body. Clause 4.3.2 states:

Apart from simple apparatus used within an intrinsically safe circuit, the selection of equipment for use in a hazardous area, which has a certification that is not in accordance with 4.3.1, shall be restricted to circumstances where suitable equipment with certification in accordance with 4.3.1 is not practically obtainable.

The justification for the use of such equipment 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. Justification may be demonstrated in the form of a Conformity Assessment Document.

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1.1 Scope

This Standard specifies the assessment methodology for determining whether or not non AUSEx/ANZEx/IECEx certified explosion-protected electrical equipment provides an acceptable level of safety, per clause 4.3.2 of AS/NZS 60079.14.

1.2 Exclusions

With the exception of intrinsically safe barriers, and other associated apparatus, this Standard does not apply to explosion-protected electrical equipment that is located in non-hazardous areas.

NOTE: Ex equipment may be chosen for use in non-hazardous areas due to availability, commonality of spare, or other economic or operational reasons.

This Standard does not apply to explosion-protected electrical equipment meeting the requirements of simple apparatus which are being used in intrinsically safe circuits (e.g. a flameproof pressure switch used in an intrinsically safe circuit).

1.3 Abbreviations

CAD	Conformity Assessment Document
EEHA	Electrical Equipment in Hazardous Areas
TIC	Technical Integrity Custodian

1.4 Technical Integrity Custodian

The Technical Integrity Custodian (TIC) for this Standard is the Senior Principal Electrical Engineer, Mechanical & Electrical Assets.

1.5 Referenced Documents

The following documents are referenced in this Standard. If a referenced standard has been superseded, the user shall notify the TIC and utilize the latest edition of the standard unless advised otherwise in writing by the TIC.

AS/NZS 60079.14:2022	Explosive atmospheres Part 14: Electrical installations design, selection and erection
AS/NZS 80079.34:2012	Explosive atmospheres Part 34: Application of quality systems for equipment manufacture
HA-ST-10	Electrical Equipment in Hazardous Areas (EEHA) – Hazardous Area Verification Dossier Standard
HA-FM-04	Justification and Acceptance of non-AUSEx/ANZEx/IECEx Certified Equipment Form

2 GENERAL

The assessment of equipment which has a certification that is NOT issued under the IECEx, ANZEx or AUSEx certification schemes, shall be restricted to circumstances where suitable equipment with certification to the IECEx, ANZEx or AUSEx certification schemes is not practically obtainable. The assessment shall determine if the equipment's certification would offer an equivalent level of safety to equipment issued with an AUSEx, ANZEx, or IECEx certificate of conformity by considering each of the following three areas:

- The equivalence of the standards to which the equipment was certified
- The ability of the certifying body to conduct the certification

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- The quality assurance requirements for manufacture of the equipment

The assessment shall be recorded in a conformity assessment document (CAD). The CAD shall not be plant or application specific. As a minimum, the CAD shall be written so that it can be applied to all Water Corporation sites.

The justification for the use of the equipment, and the acceptance of the use of the equipment shall be formally recorded on the 'Justification and Acceptance of non AUSEx/ANZEx/IECEx Certified Equipment Form' HA-FM-04 which is to be filed with the conformity assessment document in the Hazardous Area Verification Dossier. The acceptance shall be by the TIC.

A Statement of Assessment/Opinion may be used in lieu of a CAD when the standards to which the equipment was certified are significantly different from AS/NZS or IEC standards. The Statement of Assessment/Opinion shall offer a reasoned qualitative based assessment on why the equipment is suitable for use in a specific application.

2.1 Competency of Assessor

The person making the assessment of the suitability of the equipment shall be competent to make such determination. Competency shall be demonstrated via a Statement of Attainment issued by a Registered Training Organisation to unit UEENEEM036A (gases) or UEENEEM037A (dusts). This person may be a Water Corporation employee, or an external service provider.

2.2 Preferred Equipment

Whenever possible, electrical equipment to be use in a hazardous area shall be certified under the AUSEx, ANZEx, or the IECEx certification schemes. When the use of this equipment is not possible or viable, preference shall be given to equipment complying with the ATEX Directive which has been assessed to the European Norms by a Notified Body whom are also an Ex Certifying Body (ExCB) under the IECEx scheme, and is manufactured under a monitored quality management system complying with AS/NZS 80079.34.

NOTE: ATEX compliant equipment is probably already covered by the Water Corporation's generic ATEX CAD.

2.3 Hazardous Area Verification Dossier

The conformity assessment document, the completed Justification and Acceptance of non AUSEx/ANZEx/IECEx Certified Equipment Form HA-FM-04, and any other documents detailing the assessment and justification process shall be placed in the hazardous area verification dossier - refer to Water Corporation's Electrical Equipment in Hazardous Areas (EEHA) Hazardous Area Verification Dossier Standard: HA-ST-10. In addition, the listing of non AUSEx/ANZEx/IECEx equipment whose use has been justified by the Water Corporation shall be updated with the details of newly accepted equipment.

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END OF DOCUMENT

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