



Assets Planning and Delivery Group
Engineering

HA-ST-01

Electrical Equipment in Hazardous Areas (EEHA) Management Plan Standard

VERSION 1
REVISION 3

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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 and Electrical who will consider these for incorporation into future revisions.

Head of Engineering

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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	30/04/12	All	Original (First) Version	FL	RC
All	1/1	30/11/13	All	Updated Formatting	AW	JO
Multiple	1/2	08/08/14	Multiple	Amended 1.2, 1.4, 2.8, 2.9 and deleted Appendix A	AW	JO
All	1/3	10/11/22	All	Updated Formatting	BW	BW

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1 INTRODUCTION

1.1 Purpose

The purpose of this standard is to specify the standards to ensure that equipment located in hazardous areas are correctly managed.

1.2 Scope

This document specifies the standards that form the framework of the Electrical Equipment in Hazardous Areas (EEHA) Management System for Water Corporation facilities. It is the highest level document on the topic of hazardous area classification and explosion protected electrical equipment. A diagram showing the whole of the management system is contained in EEHA Management System Overview.

This document does not cover the use or installation of non-electrical equipment in hazardous areas. However, minimum acceptable work practices applying to Hazardous Areas are described in the Water Corporation document [Flammable Gas Area \(FGA\) procedure](#).

1.3 Abbreviations

Term or Abbreviation	Meaning
ANZEx	Australian and New Zealand Ex Certification scheme
AUSEx	Australian Ex Certification Scheme
EEHA	Electrical Equipment in Hazardous Areas
Ex	General term for explosion protected equipment
FIC	Field Inspection Checklist
HAC	Hazardous Area Classification
Hazardous Area	An area in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of equipment (AS/NZS 60079.14 Clause 3.2.1)
IEC	International Electro technical Commission
IECEx	International Electro technical Commission Ex Certification scheme
IOM	Installation & Operation Manual
IS	Intrinsic Safety
TIC	Technical Integrity Custodian, i.e. the Senior Principal Electrical Engineer, Mechanical & Electrical Assets
Zone 0	A place in which an explosive gas atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is present continuously or for long periods or frequently (AS/NZS 60079.14 Clause 3.2.7) (typically more than 1000 hours per year)
Zone 1	A place in which an explosive gas atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is likely to occur in normal operations occasionally (AS/NZS 60079.14 Clause 3.2.8) (typically between 10 and 1000 hours per year)
Zone 2	A place in which an explosive gas atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only (AS/NZS 60079.14 Clause 3.2.9) (typically less than 10 hours per year)

1.4 Referenced Documents

Australian standards

Document	Description
AS/NZS 3000:2018	Electrical installations (known as Australian/New Zealand Wiring Rules)
AS/NZS 60079.10.1:2009	Explosive atmospheres Part 10.1: Classification of areas – Explosive gas atmospheres (IEC 60079-14, Ed 4.0(2007) MOD)
AS/NZS 60079.14:2022	Explosive atmospheres Part 14: Electrical installations design, selection and erection (IEC 60079-14, Ed.5.0(2013) MOD)
AS/NZS 60079.17:2017	Explosive atmospheres Part 17: Electrical installations inspection and maintenance (IEC 60079-17, Ed.5.0(2013) MOD)

Water Corporation Hazardous Area Standards

HA-ST-02	Hazardous Area Classification Standard
HA-ST-03	Electrical Equipment in Hazardous Areas Selection and Installation Standard
HA-ST-04	Electrical Equipment in Hazardous Areas Competency Standard
HA-ST-05	Electrical Equipment in Hazardous Areas Inspection Standard
HA-ST-06	Electrical Equipment In Hazardous Areas Testing Standard
HA-ST-07	Electrical Equipment in Hazardous Areas Maintenance Standard
HA-ST-08	Electrical Equipment in Hazardous Areas Overhaul Standard
HA-ST-09	Reserved
HA-ST-10	Electrical Equipment in Hazardous Areas Verification Dossier Standard
HA-ST-11	Electrical Equipment in Hazardous Areas Assessment of Non-AUSEx/ANZEx/IECEX Equipment Standard

2 CODES AND STANDARDS

Hazardous areas must be correctly designed and managed to ensure that equipment located in these areas do not produce an unacceptable ignition risk. Equipment must be selected, installed, tested, and inspected in accordance with the relevant standards. In addition, activities conducted in hazardous areas (including taking portable electrical equipment into hazardous areas) must be controlled so that the risk of ignition is managed. The Water Corporation’s Electrical Equipment in Hazardous Area Management System (HAMS) determines and states the standards, procedures, and work instructions that are required to safely manage the use of electrical equipment in hazardous areas on the Water Corporation’s facilities.

Safety in Hazardous Areas on the Water Corporation’s facilities shall be managed by a set of Water Corporation standards, procedures, and work instructions covering the whole range of issues related to safety in hazardous areas. The following Standards contain specific requirements. These Standards in turn refer to external standards and the Water Corporation’s procedures and work instructions.

2.1 [HA-ST-02: Hazardous Area Classification Standard](#)

This Standard details the hazardous area classification standards and philosophies to be applied when classifying hazardous areas on the Water Corporation’s facilities. It also provides guidance on the recording of hazardous area classification data, including the production of the hazardous area classification drawings and schedules. This Standard applies to the design of all modifications and upgrades to Water Corporation facilities, and the design of new facilities.

2.2 [HA-ST-03: Electrical Equipment in Hazardous Areas Selection and Installation Standard](#)

This Standard specifies the general requirements for the selection and installation of electrical equipment for the Water Corporation’s facilities to ensure safe use in hazardous areas. The intention of this Standard is to expand upon the requirements of AS/NZS 60079.14, and to specify additional Water Corporation requirements.

2.3 [HA-ST-04: Electrical Equipment in Hazardous Areas Competency Standard](#)

This Standard details the training and assessment requirements to ensure that all Instrument and Electrical personnel and contractors working on the Water Corporation’s facilities have sufficient knowledge and skills to design and/or work with electrical equipment for explosive atmospheres. It also covers the training and assessment requirements for personnel classifying hazardous areas.

2.4 [HA-ST-05: Electrical Equipment in Hazardous Areas Inspection Standard](#)

This Standard specifies the inspection requirements for explosion-protected electrical equipment installed in hazardous areas on the Water Corporation’s facilities, to ensure its safe use. The intention of this Standard is to expand upon the requirements of AS/NZS 60079.14 and AS/NZS 60079.17, and to specify additional Water Corporation requirements.

2.5 **HA-ST-06: Electrical Equipment in Hazardous Areas Testing Standard**

This Standard specifies the testing requirements for explosion-protected electrical installations on the Water Corporation’s facilities, to ensure its safe use. The intention of this Standard is to expand upon the requirements of AS/NZS 60079.17, and to specify additional Water Corporation requirements.

2.6 **HA-ST-07: Electrical Equipment in Hazardous Areas Maintenance Standard**

This Standard specifies the general maintenance requirements for explosion-protected electrical equipment on the Water Corporation’s facilities to ensure its continued safe use in hazardous areas. The intention of this Standard is to expand upon the requirements of AS/NZS 60079.17, and to specify additional Water Corporation requirements. It also covers all explosion-protected electrical equipment located in non-hazardous areas.

2.7 **HA-ST-08: Electrical Equipment in Hazardous Areas Overhaul Standard**

This Standard specifies the general overhaul and modification requirements for electrical equipment on the Water Corporation’s facilities to ensure its continued safe use in hazardous areas. The intention of this Standard is to expand upon the requirements of AS/NZS 3800, and to specify additional Water Corporation requirements. It also covers all explosion-protected electrical equipment located in non-hazardous areas.

2.8 **HA-ST-09: Reserved**

2.9 **HA-ST-10: Electrical Equipment in Hazardous Areas Hazardous Area Verification Dossier Standard**

This Standard defines the minimum requirements for the contents of a Hazardous Area Verification Dossier for Water Corporation’s facilities. In addition, this Standard defines the specific locations where the various Verification Dossier contents will be stored.

2.10 **HA-ST-11: Electrical Equipment in Hazardous Areas Assessment of Non AUSEx/ANZEx/IECEX Equipment Standard**

This Standard defines the methodology to be followed when assessing the suitability of non-AUSEx/ANZEx/IECEX explosion-protected electrical for equivalence in safety to that afforded by AUSEx/ANZEx/IECEX certified equipment.

END OF DOCUMENT