QUICK GUIDE

SAFETY Everyone. Everywhere. Every day

MONITORING, MEASUREMENT AND CALIBRATION

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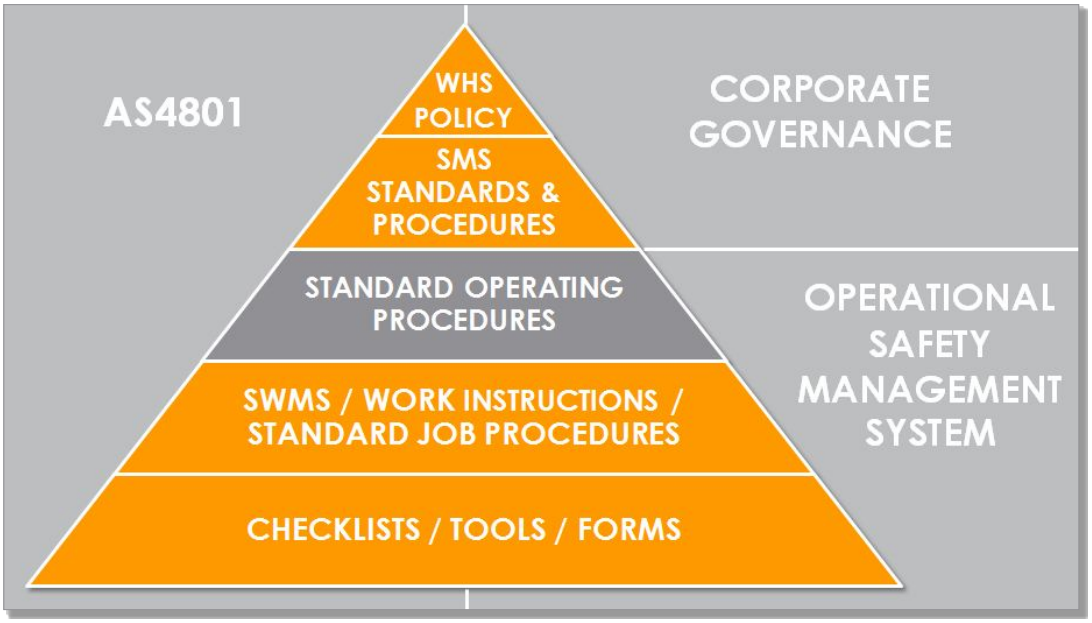
DOC OWNER	Tom Foster	ACTIVE DATE	11/07/2014

1. SMS DOCUMENT HIERARCHY



2. PURPOSE

This quick guide documents Queensland Urban Utilities (QUU) approach to the management of instruments used for measurement and monitoring of safety parameters such as gas detectors. The aim is to ensure that testing, inspection and calibration occurs at specified intervals.

This quick guide has been developed as an information and planning resource only and is not to be used as a WHS inspection or audit tool. WHS audits and inspections must be undertaken using the relevant WHS audit or inspection tool as outlined in ***WHS Audit and Inspection Procedure (PRO366)***.

3. RELATED DOCUMENTS

- Monitoring, Measurement and Calibration SOP (PRO427)
- WHS Hazard and Risk Management Procedure (PRO363)
- Electrical Safety SOP (PRO450)

4. FURTHER INFORMATION

For further information, contact your Health and Safety Representative or the QUU Safety Team.

5. PROCESS ACTIONS TO ACHIEVE COMPLIANCE

AT ALL TIMES	REFERENCE
1. OVERVIEW	
(a) The routine maintenance of any equipment used for health and safety that requires calibration is extremely important. If equipment is not maintained properly it can impact on its reliability and therefore its effectiveness as a control measure against injury or illness.	Section 7.1
(b) Instruments that may require calibration and which are needed to ensure that work can be carried out safely include, but are not limited to: • Gas/VOC monitors used in confined spaces; • Gas/VOC monitors used in hazardous areas; • Laboratory monitoring equipment used to ensure the quality of water; • Noise monitoring equipment; • Radiation monitoring equipment; • Thermal monitoring equipment; • Force gauges; • Laser-based measurement equipment (e.g. survey range-finders); and • Instruments used to measure electric fields and current.	
2. TESTING	
(a) Each piece of equipment should be labelled to allow for easy identification. Each time a piece of equipment is inspected/calibrated, a tag must be placed on it, indicating the inspection/calibration date.	Section 7.2
(b) Persons testing/calibrating equipment must be confirmed to: • Be competent in the use of the equipment and relevant instruments involved in the testing/calibration; • Understand the testing/calibration procedure; • Understand the concepts of traceability of measurement; and • Be aware of the importance of checking or calibration.	
3. OPERATIONAL CHECKS	
(a) Some instruments, such as gas detectors and sound level meters, are required to be checked/tested prior to use. This testing should be performed prior to using the instrument and as per the manufacturer's instructions, using the prescribed calibration gas or instrument.	Section 7.2
(b) Checking is different to calibration. Checking is done to determine if an instrument is functioning correctly and continuing to provide reliable and consistent measurement results, or if an adjustment and/or recalibration is required.	
(c) QUU operators of measuring devices are to carry out basic checks on the measuring device instruments, e.g. bump-testing of gas detectors.	
(d) In addition, a visual inspection of the equipment may be required including: • Checking the apparatus for abnormal conditions such as malfunctions, alarms, non-zero readings, etc. • Ensuring that the detector is free from obstructions or coatings	

AT ALL TIMES	REFERENCE
that could interfere with the gas or vapour reaching the sensing element. Ensure that the sample drawn is correct for sample-draw system. • For sample-draw systems, inspecting flow lines and fittings. Cracked, pitted, bent or otherwise damaged or deteriorated flow lines or fittings should be replaced with those recommended by the manufacturer.	
4. GAS DETECTION APPARATUS	
(a) Gas monitors used for the purpose of atmospheric monitoring within a confined space should be maintained and used in accordance with the manufacturer's instructions and warnings.	Section 7.2
(b) Gas detection apparatus should be: • Regularly inspected for possible malfunctions, damage or other deterioration; • Calibrated in accordance with the manufacturer's instructions, using the recommended test kits/equipment.	
(c) Detectors capable of detecting several different gases should be calibrated to the gas for which they are least sensitive.	
(d) Detectors used to measure LEL should be calibrated for the flammable substance under investigation. Where a mixture of flammable substances occur, the LEL of the mixture may not be known precisely and care is required to provide for the substance with the lowest LEL.	
5. MAINTENANCE PROCESSES	
(a) Maintenance of equipment and/or instrumentation must be carried out in accordance with manufacturers' instructions/recommendations.	Section 7.3
(b) In many instances, calibration will be required annually but this may be six monthly or every two years for some equipment.	
(c) Some instruments will require calibration by a National Association of Testing Authorities (NATA) accredited provider.	
(d) Instruments that are found not to be in correct working order or are faulty should be tagged as 'out of service' until they have been repaired.	
6. MAINTENANCE AND CALIBRATION RECORDS	
(a) Ensure that all required maintenance, calibration and repair records are completed.	Section 7.4
(b) Records of any calibration/inspection must kept in a central location within the area of responsibility for the equipment (e.g. Mechanical & Engineering, Bunya Street, Eagle Farm) for a minimum of five years after the life expiration of the piece of equipment.	
(c) The documented history of calibrations and checks form part of QUU's quality records. These quality records need to be maintained to confirm the reliability of all measuring instruments.	

Note: If the status of a measuring device is not known, it should be checked prior to operation.

6. REVIEW PROCESS

This document is to be reviewed every 12 months or earlier if:

- there is an identified risk to business,
- a significant safety event occurs,
- incident investigation or audit results show that application of the Quick Guide fails to deliver the required outcomes,
- there are changes in associated legislation, or
- there is evidence that the Quick Guide is not having a positive impact on safety-related KPIs.