

# Selection and Maintenance of Monitoring and Measuring Equipment



## Couple of takeaways

- Monitoring and Measuring Equipment (MME) is sometimes used for monitoring and measuring, to demonstrate conformity and make management decisions. All MME must be maintained and (where necessary) calibrated or otherwise verified to ensure it is operating correctly and within specification.
- MME may include test software, tools, appliances or any other items of plant that monitors or measures and has an impact on safety or the environment.
- It is imperative that the MME we choose is suitable for the task and that we keep records to demonstrate its accuracy and precision, so we have confidence in the results.
- MME that forms part of an asset or infrastructure or monitors a piece of infrastructure is considered an asset and is managed through asset management plans or facilities plan/processes.



## What is this procedure for?

This procedure describes how Hydro Group select, manage and maintain **Monitoring and Measuring Equipment (MME)** so that suitably accurate and precise results for safety and environmental management decisions can be obtained.



## What is the Selection and Maintenance of MME Process?

Unless otherwise stated, the **Works or Job Manager (the person in charge or managing the workplace)** ensures all the tasks in this procedure are completed.

1) Identify the piece of MME to be used or being used and establish the type of MME as per the following table:

- Record keeping and location of MME Management Plans or other processes for establishing maintenance and calibration schedules to be completed as per table.

MME Criteria	Type of MME	Maintenance, Calibration and Record Keeping Method
Is the monitoring equipment a part of an asset or infrastructure or is it monitoring a piece of infrastructure?	Asset MME	Monitoring and measuring equipment is considered an asset and captured in asset management plan or facilities plan/process etc.
Is the monitoring equipment used to monitor and measure environmental aspects and impacts?	Environmental MME	Contracted services to provide evidence of calibration and maintenance records.  See items identified in Monitoring and Measuring Procedure for further information on monitoring criteria and any calibration requirements.
Is the equipment monitoring people, or the task being undertaken by people (E.g. dust monitors, air monitors, noise monitors, breathalysers, lighting meters)?	WHS MME	WHS MME. Records and monitoring and measuring requirements captured in SAP. MME Management Plan or maintenance/calibration schedule to be within SAP in accordance with this procedure (See Section 2)  Contracted services to provide evidence of calibration and maintenance records.

2) **For WHS MME only**, maintain the MME Records Database on SAP. **For Environmental MME and Asset MME**, records database captured as per asset

# Selection and Maintenance of Monitoring and Measuring Equipment

management plans or other processes identified in monitoring and measuring procedure. Where appropriate, records should include:

- MME description, type, manufacturer and unique identification number
  - Date of acquisition, where available
  - Precision, required accuracy and usable range
  - Type and frequency of calibrations, verifications, or checks
  - Responsibilities for ensuring MME is calibrated, verified or checked
  - Reference to, or description of the method for calibration, verification, or checking
  - Information and details of preferred suppliers for calibration and servicing
  - Date of the last calibration, verification, or check
  - In-house calibration/verification equipment serial number and the results
  - Results prior to, and after any adjustment
  - Next action, due date and (if applicable) the Calibration/Service Report
  - Records of the person performing the calibration, verification, or check.
- 3) Select MME capable of satisfying the monitoring/measuring requirements and:
- Allocate each piece a unique identification, using its serial number, or (if it does not have one) assigning it a number.
  - Register it and its identification in the MME database and filing any of its technical information (e.g. calibration instructions) in individual Equipment files.
- 4) Ensure MME is calibrated/verified/checked and subsequently adjusted:
- Against standards traceable to international/national standards, or (if none exist) record the basis of the calibration/verification in the MME Records Database
  - By suitably qualified and competent in-house or approved external providers
  - At the frequency recorded in the MME Records Database
- Whenever MME is repaired, suspected or found to be out of calibration
  - Before (and possibly after) a critical use, as specified by the client
  - Recording the calibration/verification/check expiry in the MME Records Database.
- 5) Approve and arrange in-house MME calibrations/verifications (and adjustments) if:
- Acceptable standards are available within the required data range
  - It can be performed in the controlled conditions necessary (e.g. temp and humidity)
  - The equipment and competent personnel are available
  - The resultant performance and the validity of the MME can be assured
  - All contractual, regulatory, legislative, and other requirements can be met
  - Approved In-house procedures exist defining the requirements above, including any necessary inspections, cleaning, adjustments, reporting and records maintenance.
- 6) Select an **external contractor** for an MME calibration/verification/adjustment, considering:
- If they are authorised or recommended by the MME manufacturer
  - HT's past experience with the provider, industry and other recommendations
  - Performing a capability assessment or relevant management system certification.
- 7) Engage the selected **external contractor** as per the Management of Contractors and Suppliers Procedure, specifying the:
- Need for traceability to international/national measurement standards
  - Required precision, accuracy and authorising them to adjust/recalibrate the MME
  - Need for a Certificate of Calibration, showing the date, the MME's identification number, calibration method, traceability, results and adjustment information.
  - Any special requirements for packaging for return after calibration.

# Selection and Maintenance of Monitoring and Measuring Equipment

- 8) Inspect any MME received from an external provider after calibration to ensure that it is satisfactory, and that the documentation includes all the specified requirements
- 9) If **calibration/verification results show the MME is out of specification**, the **Calibrator or User** informs **those who previously used the MME** to determine what:
  - Immediate actions to take (e.g. repeating monitoring/measuring, replacing/repairing equipment or taking corrective action as necessary).
  - The MME has been used for since the last successful calibration/verification/check, and check the validity of previous results and the potential effects on safety.
- 10) Once the Calibration/ Verification/Check has been completed:
  - Ensure that the calibration/verification status of each item of MME is recorded on the device, using a "Calibrated/Verified/Checked" label or similar (where practical)
  - File the records on the Equipment file and update the MME Records Database
  - Safeguard it from adjustments that would invalidate the measurement
  - Protect it from damage during handling, maintenance, and storage
  - Make it available for use as per the Monitoring and Measuring procedure.
- 11) Keep the following records:
  - Calibration/verification/check results, Calibration Certificates and Service Reports
  - Notes regarding data collected using MME that was found unsatisfactory.