



Australian Government
Department of Industry, Science,
Energy and Resources

National
Measurement
Institute

Instructions for observation assessments

Version 2.1 February 2021

Contents

Introduction.....	3
Observation options	3
What is being observed?	4
Specifically for verifiers.....	4
Specifically for weighbridge operators.....	4
Video calling (VC) and pre-recorded video (PRV)	5
Equipment.....	5
Specific instructions for verifiers.....	6
Specific instructions for weighbridge operators using VC	7
Direct observation	7
Observation at an NMI office (verifiers only).....	7
Observation at a site of your choice (verifiers or weighbridge operators)	8
Scenario options.....	9
Further information	9
Appendix 1	10
Appendix 2	12

Introduction

As part of the assessment process to determine your competence as a verifier of measuring instruments/measures, or operator of weighbridges, you need to demonstrate your practical skills. This means you will need to complete **all** the processes required for verification of an instrument/measure, or for operating a weighbridge, including any necessary preparation or finalisation processes, while being observed by a skills observer or your assessor.

The observation will usually take place once you have submitted your completed recognition kit and enrolled in assessment. The exception is where your observation evidence is provided through submitting a pre-recorded video.

Observation options

A number of options are available for you to choose from, but your choice may be limited, depending on the environment in which your observation will take place (Each kit will specify the options available):

- **Video calling (VC)** - The assessor will use VC to complete a direct observation of you, either at your work place or another suitable location such as a trader's site.
- **Pre-recorded video/s (PRV)** - You will complete a PRV, or series of PRVs, showing you completing all the stages required for verification of an instrument/measure, in a real or simulated situation.
- **Direct observation (NMI Office)** - The assessor, or a skills observer, will observe you completing all the processes required for verification of an instrument that you will bring into an NMI office.
- **Direct observation (your choice and arrangement of site)** - The assessor, or a skills observer, will observe you, completing all the stages required for verification of an instrument/measure, or setting up a public weighbridge and weighing vehicles, in a real or simulated situation either at your work place or another suitable location organised by you (e.g. a trader's site).
- **Scenario** – An alternative method of assessment where the assessor runs through a simulation of a verification process/public weighing step by step, asking you to describe processes, respond to test results/vehicle weight information given, complete calculations and communicate as if the assessor were a client/truck driver. **(This option is only used in specific circumstances)**

Not all options will be available for all assessments: Check the kit you are completing to see which options you can use

These instructions guide you through the requirements for each option. Further information will be provided by your assessor/skills observer. If you have any questions prior to completing an observation, contact the NMI Administrator:

- Email: NMIadministrator@measurement.gov.au
- Tel: 02 8467 3789

Before you undertake your observation, ensure you have practiced the processes/operations relating to your assessment, ideally under supervision of an experienced verifier/operator so that you are familiar with the requirements.

During your observation, you may access any procedures, guidance documents, crib sheets or other sources of information you would normally need or use when completing these activities in your workplace. **This is NOT a closed book assessment!** However, you should not take significantly longer to complete the tasks being observed than would be expected in the context of your workplace. Indicative timeframes for the observation are given in [Appendix 1](#).

What is being observed?

The purpose of your observation is to assess how you carry out the tasks associated with your role as a verifier/operator. In addition, you are being observed to see how you ensure you are working **safely** (for self and others in the work area) and how you **communicate** with clients and colleagues.

This means the observation commences at the time you arrive at site (an NMI site will represent a simulated work site) and continues to the time you leave. You should not complete any site preparation before the observer is present (other than organising logistics with the site operator, or where such preparation needs to take place in advance of the day of the test, such as may be required for certain complex instruments).

Ensure you have with you the I.D. you provided with your enrolment.

During the observation, you should explain to the observer what you are doing and why. This is particularly critical where you provide a PRV, as the assessor will not be able to ask you questions during the process.

Specifically for verifiers

The following activities will be included (as appropriate to the specific verification):

- Setting up the work area and handling reference standards/materials/equipment.
- Assessing risks and applying controls to ensure safety for self and others.
- Communicating with site personnel regarding the work you are completing and any assistance you may require (the observer may simulate the 'trader' if no suitable person is available during the observation – this may take place at a later time if not included in a PRV).
- Accessing and interpreting documentation relevant to the process.
- Demonstrating/discussing how you have assessed suitability of the reference standards/materials/equipment.
- Completing a simulated verification covering **all** processes required for initial verification in accordance with the relevant national instrument test procedures, including:
 - ensuring a suitable instrument is chosen, to enable you to demonstrate all standard tests that may be applied to an instrument of the specific subclass
 - making any adjustments/corrections to address environmental conditions.
- Completing test reports and determining the outcome of testing.
- Simulation of how to apply a verification mark.
- Packing up equipment, including handling and storage.
- Communicating results of the tests to the trader (the observer may simulate the 'trader' if no suitable person is available during the observation – this may take place at a later time if not included in a PRV).

Specifically for weighbridge operators

The following activities will be included:

- Assessing risks and applying controls to ensure safety for self and others.
- Preparing the weighbridge for weighing vehicles (pre-weigh checks).
- Organising traffic management.
- Determining the type of measurement required by the client, and suitability of weighbridge for the measurement.
- Communicating with the client regarding vehicle positioning on the weighbridge platform.
- Completing all vehicle measurements and any calculations required to complete the ticket/s.
- Demonstrating an understanding of how to complete an axle measurement on the weighbridge available to you (explaining, where applicable, why you can or cannot perform this measurement on the weighbridge for the vehicle).
- Completion of and issuing tickets, including communication with client.
- Record keeping.
- Managing different environmental conditions.

Video calling (VC) and pre-recorded video (PRV)

Pre-recorded video is not available for those being assessed for weighbridge operations.

VC and PVR cannot be used for certain observations, due to the use of recording equipment creating an added safety risk such as on fuel sites where the equipment has a potential to trigger an explosion, or where the camera operator may be at risk due to the distraction of filming.

VC is the preferred method of observation for verifiers/operators who are located at a significant distance from a major regional city. It permits interaction with the assessor that is not available when you provide a PRV.

Please note that you should not record any VC session or conversation with your assessor. Your assessor will make notes on the appropriate forms in the recognition kit.

Some of the technological requirements for VC and PRV are similar.

Equipment

Please use the following as a checklist as part of your preparation for providing PRV evidence, or when completing observation by VC:

Use a mobile phone/digital camera for this purpose. It should be able to record the date and time (for PRV) and be correctly setup with the date and time.

Ensure the equipment has a fully-charged battery and you have spares available.

If you can, use a tripod – this will facilitate better filming and a steadier image.

When using a mobile phone to record video, hold the phone in landscape position:



General instructions when using video recording/calling equipment

Before you start, get guidance on taking good quality videos. There is lots of information on the web, with advice dependent on whether you are using a mobile phone (essential for VC) or a digital camera for creating a PRV.

Familiarise yourself with the 'Skills observation report' from your recognition kit, as these are the points the assessor/SO will be looking for.

Ideally, use a colleague/friend to act as the 'camera operator', to ensure you are not distracted and all aspects of the process are correctly covered. They need to be familiar with the controls, including zooming in and out.

Get permission from the site (if on a trader's site) to complete the filming. In addition, ensure any persons you may interact with during the filming/VC (e.g. site manager, truck driver) are comfortable in being filmed. Try to avoid filming other people not directly involved in the observation.

Ensure the instrument you will test is installed in a location where there is good lighting and where you can clearly take video from all required angles.

Check there will be no undue external noise sources during filming.

Take a series of shorter PVRs (additionally numbered in the sequence they should be viewed) rather than one or two long PVRs, to enable you/your camera operator to change positions, where required.

Before completing your PVR/VC session, practice using your recording equipment, ideally completing at least one 'dry-run' to check that the video clearly shows your actions and you can be heard clearly.

During a VC, you may be asked questions to clarify what you are doing. Your camera operator may need to relay this to you if you cannot hear the assessor.

Afterwards, your assessor may have some additional questions relating to your submitted kit, so be sure to have your kit available during the call.

If you have submitted a PRV, the assessor will contact you to clarify anything they were unsure of from the PRV, and also to ask any questions relating to your kit.

Specific instructions when taking a PRV

To keep video file sizes manageable for uploading to the NMI Sigbox site, please lower the resolution of your video or reduce the file size of a video you have taken. There is generic guidance available here:

- for iPhones - [Compress existing video](#) or [Change recording resolution](#)
- for Android phones - [Compress existing video](#) or [Change recording resolution](#)

The first part of the first PRV should include the following:

Initial shots should focus on your face and your photo ID before panning to the instrument.

Announce your full name.

State the name of the company you work for.

State the date and time.

Show the data plate of the instrument you are about to test so that the details of the data plate can clearly be seen. Read out the instrument's details from the data plate.

Discuss general, as well as any particular, hazards applicable to the task and the place you are working and explain any particular safety controls you have implemented, where these may not be clearly seen from the PRV (e.g. describe any safety equipment you are wearing).

Discuss any environmental factors that are present that might affect your activities, and explain how you will address them.

For each subsequent PRV

Start by showing your face again and state the current date and time.

After you have completed all the tasks relating to your observation:

Check the PRV has adequately recorded your activities, including any recorded audio.

Save the PRV file/s to your computer giving each PRV a file name, as detailed in your recognition kit, with additional numbering to identify multiple PRVs.

Email your PRV/s with your kit, if they are not too large. If they can't be emailed the NMI Administrator will provide instructions for where to upload your PRV/s.

Specific instructions for verifiers

Describe the reference standards/materials/equipment you will use during testing, and any particular checks you have made to ensure their suitability. Provide copies of any certificates of verification for standards/materials/equipment used during the VC/PVR to your assessor (Send these in advance for VC observation).

During testing, state each individual test you are completing and briefly explain its purpose and the specific reference standard/material/equipment you are using. Explain what you are doing at each critical point, particularly where it may not be clear.

Pay particular attention to identifying and communicating any issues and the outcomes of each test.

At the completion of testing, have the camera focus back on you, and explain to the assessor the result of your tests (pass or fail) and why you have come to that decision. Talk to the assessor about the results as if you were talking to the owner of the instrument. In addition, if the instrument has passed all tests, state some of the common reasons the instrument tested might fail.

Simulate how you would complete and apply a verification mark to the instrument, if it had passed the requirements for verification.

Email the test report/s you complete for the observation to your assessor.

Specific instructions for weighbridge operators using VC

During the VC, the observation will start with you completing all pre-start checks and procedures to ensure the weighbridge is suitable for weighing vehicles.

You will need to include your interactions with the driver/s of the vehicle/s being weighed.

The assessor will want to see the movements of the vehicle before, during and after each measurement, and the weighbridge indicator display before, during and after each measurement.

You will be completing one or more (real/simulated) weighbridge tickets for each vehicle weighed. Following the VC you will need to scan/photo the tickets immediately and send them to the assessor by email.

If possible, plan to include a scenario where a vehicle attends that is not suitable to weigh on your weighbridge or where you cannot complete the weighing requested (because your weighbridge isn't suitable/approved for the specific type of vehicle measurement).

Direct observation

Once you have submitted your recognition kit, you will be allocated an experienced trade measurement officer to complete your observation, unless you have opted for an observation at a [local NMI office](#). Depending on your location, this may be your assessor, or a skills observer (SO) appointed by NMI. You will liaise with the officer to arrange a suitable venue, time and date for the observation.

Observation at an NMI office (verifiers only)

You may have the option to demonstrate your skills at one of the following locations:

- Brisbane (Geebung)
- Melbourne (Port Melbourne)
- Perth (Malaga)
- Adelaide (Edwardstown)

One day per month is allocated for observations at each of the offices listed above. A schedule of dates and information on how to book a slot will be provided on enrolment when you select this option.

Observation at an NMI office is only available for the following instrument types, NOT for weighbridge operations:

- Non-automatic weighing instruments (Subclasses 6.1-6.3).
- Masses (Subclass 3.1 & 3.2).
- Volume measures (Subclass 4.1).
- Alcoholic beverage measures (Subclass 4.3).
- Lubricating oil measures (Subclass 4.4).
- Pharmaceutical dispensing measures, graduated measuring cylinders (Subclass 4.5).
- Grain density measuring instruments (Subclass 4.9).
- Grain protein measuring instruments (Subclass 15.1).
- Cane Sugar measuring instruments (Subclass 15.2).
- Density hydrometers (Subclass 17.1).
- Leather (area) measuring instruments (Subclass 2.1).

You will be expected to provide the following:

- One or more instruments* of the subclass being assessed (depending on instrument subclass as detailed in [Appendix 2](#)).
- Reference standards/materials/equipment as required, along with relevant certificate/s of verification for those standards**.
- Blank test reports/histograms.
- Test procedures.
- Any safety equipment required (**safety shoes must be worn on site**).

You will be required to sign in when you arrive at the NMI site.

Notes: *If you are being assessed for all three of the non-automatic weighing instrument subclasses, 6.1, 6.2 & 6.3, remember you need to provide test reports relating to your testing of instruments of **each** subclass. At least **two** test reports are submitted with your completed kit. The instrument you use for observation should be of the third subclass.

If your assessment includes subclass 6.2, it is preferred that this be the instrument tested during observation. You should endeavour to provide an instrument with the following features:

- **Multi-interval**
- **Tare facility**
- **Price computing**

Any electronic measuring instrument or test equipment must have been tested and tagged to demonstrate electrical safety; particularly before use on an NMI site, (new** equipment should bear a 'new to service' tag). **You will not be permitted to plug in an instrument on an NMI site if you do not comply with this requirement.**

Observation at a site of your choice (verifiers or weighbridge operators)

You will need to organise the location for the observation and communicate with your allocated assessor/SO to organise a suitable date and time.

If the site is not your workplace, you will need to ensure the site owner is fully aware of the purpose of the inspection.

For verifiers

If there is an intention for the instrument/s to be verified on the occasion of the visit, you will need to arrange for a verifier from your organisation to be present to complete the actual verification. Regardless of the outcome of the observation, you will not be authorised to verify/mark instruments of the subclass being assessed at the time of the observation.

No adjustment of the instrument is to take place during the observation. You will simply perform all required tests, regardless of whether early test results indicate the instrument is not suitable for verification.

The instrument you choose should be one where you can carry out all the tests usually completed for initial verification (e.g. for a weighing instrument, choose an instrument with a tare facility and also a price-computing function, unless testing an instrument from subclass 6.1).

For weighbridge operators

If you choose to demonstrate your competence to operate weighbridges by weighing random vehicles coming to the site to obtain a public weighbridge ticket, you will need to ensure a current operator is present to sign the completed tickets. Be mindful that you may need to arrange for some vehicles to attend during the time allocated for the observation, so you do not exceed the time allocated.

You should ensure **copies** of weighbridge tickets are available for you to complete, to simulate the process of issuing a ticket in the following circumstances:

- Where you are being observed at a site that is not currently a public weighbridge
- Where you are demonstrating vehicle weighing on vehicles you have arranged for this purpose.

You shouldn't use actual public weighbridge tickets for measurements that are **simulated**.

Scenario options

The use of a scenario will be employed:

- where observation is not practicable or possible due to:
 - full verification tests requiring extensive and costly equipment arrangements, disruptive to the operator of the instrument (and no relevant instruments are scheduled for test by your organisation)
 - testing that would usually take place over an extended period of time
 - Covid-19 restrictions preventing direct observation and where VC/PRV not feasible (see [note](#)).
- as **part** of the assessment process for certain complex instrument assessments, where a combination of observation of some skills combined with a scenario may be used
- as a supplement to cover aspects of the assessment criteria that were not demonstrated during observation (due to the particular situation not permitting demonstration, or other factors).

A scenario involves you talking through the stages of a verification/public weighing scenario with your assessor. This will take place preferably by VC, otherwise by phone. Your assessor will provide information on the 'test results' at each stage, or direct you to the next stage of your task. At each point, you will be describing what you would be doing or saying, and what the results the assessor provides mean to you. It may involve you completing calculations. More detail will be provided if this option is to be utilised.

Note: Scenarios will only be used as a full replacement of observation where detailed third party reports have been provided. Applicants who do not have access to an experienced third party to provide a report will need to undertake a number of direct observations, which may need to be postponed during lockdown restrictions, if they are unable to complete observation by VC or through the provision of suitable PRVs.

Further information

Your assessor/SO will provide further information relating to the specific requirements for your observation, except where you provide a PRV.

They will not be able to tell you the outcome of your assessment after the observation.

If you have any concerns or questions about the observation process or methods, please contact the NMI administrator:

- Email: NMIadministrator@measurement.gov.au
- Tel: 02 8467 3789

Appendix 1

Table of indicative observation times

Instrument/subclass/activity	Observation time	Notes
Weighbridge operations (Public weighbridge operator)	1 hour	Excluding any induction required for observer.
Non-automatic weighing instruments (subclass 6.1-6.3)	1 hour	Additional half hour allowed for observations at NMI office to allow for set up/pack-up of instrument and warm-up time.
Simple measuring instruments (subclasses 18.1 & 18.2) <ul style="list-style-type: none"> • Consoles • Point of sale systems 	1 hour	Where verification of instruments of these subclasses is being assessed at the same time as instruments of a subclass to which they would be connected, then a combined assessment of both should be arranged and time taken should be reduced (e.g. 18.1 with 5.1 or 18.2 with 6.2)
Automatic packaging conveyor weighers (subclass 6.7)	3 hours	See also notes relating to multidimensional measuring instruments, if relevant.
Wheeled loader weighing instruments (subclass 6.8)	3 hours	
Fuel dispensers (subclass 5.1)	2 hours	Time includes all aspects of set-up from arrival at site and pack-up
LPG dispensers (Subclass 10.1) using: <ul style="list-style-type: none"> • master meter • mass flowmeter • gravimetric method 	2 hours 2 hours 3 hours	Excluding any induction required for observer
CNG dispensers (Subclass 12.1) using: <ul style="list-style-type: none"> • mass flow meter • gravimetric method 	2 hours 3 hours	Excluding any induction required for observer
Weighing instruments, capacity over 3 tonnes (subclass 6.4): <ul style="list-style-type: none"> • Using reference standards only • Using substitution material 	2 hours* 3 hours	*for instrument with capacity 15 tonnes or less.

Instrument/subclass/activity	Observation time	Notes
Bulk fuel flowmeters (Subclass 5.2) using: <ul style="list-style-type: none"> • Volume measure (prover) • Master meter • Gravimetric method 	2 hours 2 hours 3 hours	Excluding any induction required for observer. Times given for flowmeters on vehicles. For flowmeters at terminals, 5 hours
Bulk LPG flowmeters (subclass 10.2) using: <ul style="list-style-type: none"> • Master meter • Mass flowmeter • Gravimetric method 	3 hours 3 hours 3.5 hours	
Simple measures (All subclasses except 4.6)	1 hour	
Brim measures for flowable solids (Subclass 4.6)	2 hours	
Simple measuring instruments (all subclasses except 8.1, 9.1, 13.1, 18.1 & 18.2)	1 hour	Additional half hour allowed for observations at NMI office to allow for set up of instrument and warm-up time, where required.
Milk tanks and vehicle tanks (subclasses 8.1 & 9.1)	2 hours	Excluding any induction required for observer
Multi-dimensional measuring instruments* (subclass 13.1)	2 hours	Excluding any induction required for observer. *Where such instruments incorporate a weighing instrument (usually subclass 6.3 or 6.7) additional time relevant to the testing of that aspect of the instrument to be included
Belt-weighers (subclass 6.5)	Discuss with NMI	A combination of scenario/observation likely to be used
Automatic rail weighbridges (subclass 6.6)	Discuss with NMI	A combination of scenario/observation likely to be used
Discontinuous totalising hopper weighers (subclass 6.9)	Discuss with NMI	A combination of scenario/observation likely to be used

Appendix 2

Instrument subclasses where more than one instrument should be brought to the NMI office:

- Subclasses 3.1 & 3.2 Trade masses
- Subclass 4.1 Volume measures
- Subclass 4.3 Alcoholic beverage measures (Test as for individual testing plan – bring a line measure and a brim measure. If you wish to be assessed for both gravimetric and volumetric test methods, then bring reference standards/equipment to complete a test using each method)
- Subclass 4.4 Lubricating oil measures (Test as for individual testing plan. If you wish to be assessed for both gravimetric and volumetric test methods, then bring reference standards/equipment to complete a test using each method)
- Subclass 4.5 Pharmaceutical dispensing measures, graduated measuring cylinders