

First Schedule: Metering and Measurement Requirement

1. Receipt Point Measurement

- a. APA shall operate, at or near the Receipt Point, the Receipt Point Facilities necessary for APA to be able to properly establish the quality and quantity of Gas delivered by the Shipper to APA at the Receipt Point.
- b. Where more than one User delivers Gas in a commingled stream through common Receipt Point Facilities, each such User (referred to in this clause as the Common Stream Gas User) shall advise or cause to be advised to APA, on a Daily basis or such other basis as may be required by APA from time to time, the quantity of Gas allocated to it by the Shipper of the Gas to the Receipt Point. Should such advice not be provided within 30 minutes of the end of the Gas Day, APA shall be entitled to determine the Daily Gas quantity delivered by each Common Stream Gas User using the allocation procedure set out in paragraph 1(c) or as it otherwise deems appropriate, acting as a reasonable and prudent pipeline operator. APA's determination as to quantity and quality shall, in the absence of manifest error, be deemed to be correct.
- c. Unless APA is notified otherwise pursuant to paragraph 1(b) each Common Stream Gas User shall be allocated its share of the Gas received by APA in a commingled stream in proportion to the quantity of Gas nominated by such User at the Receipt Point Facilities for that Gas Day divided by the sum of the quantities of Gas nominated by the Common Stream Gas Users at the Receipt Point Facilities, such that the sum of the quantities allocated to each Common Stream Gas User shall equal the total quantity of Gas as measured at the Receipt Point Facilities.

2. Delivery Point Measurement

- a. APA shall have possession of and/or shall operate, at or near the Delivery Point(s), Delivery Point Facilities necessary for APA to be able to properly establish the quantity and quality of Gas delivered by APA to the Shipper at the Delivery Point(s).
- b. Where more than one User receives Gas in a commingled stream through common Delivery Point Facilities, each such User (referred to in this clause as the Common Stream Gas User) shall advise or cause to be advised to APA, on a Daily basis or such other basis as may be required by APA from time to time, the quantity of Gas allocated to it at the Delivery Point. Should such advice not be provided within 30 minutes of the end of the Gas Day, APA shall be entitled to determine the Daily Gas quantity delivered by each Common Stream Gas User using the allocation procedure set out in paragraph 2(c) or as it otherwise deems appropriate, acting as a reasonable and prudent pipeline operator. APA's determination as to quantity and quality shall, in the absence of manifest error, be deemed to be correct.
- c. If required by paragraph 2(b), each Common Stream Gas User shall be allocated its share of the Gas delivered by APA in a commingled stream in proportion to the quantity of Gas nominated by such User at the relevant Delivery Point Facilities for that Gas Day divided by the sum of the volumes of Gas nominated by the Common Stream Gas Users at those Delivery Point Facilities, such that the sum of the quantities allocated to each Common Stream Gas User shall equal the total quantity of Gas as measured at those Delivery Point Facilities.

3. Technical Requirements

The measuring equipment comprised in the Receipt Point Facilities and in each of the Delivery Point Facilities shall comply in all respects with gas measurement standards in the Second Schedule.

4. Check Metering

APA grants to the Shipper the right to install and maintain check metering equipment to enable the Shipper to check the bulk measuring equipment located at any site provided that such check metering equipment shall not interfere in any way with any measuring equipment (or other equipment) and that the cost of installing and maintaining any such check metering equipment shall be borne by the Shipper.

5. Meter Testing

The uncertainty value of the measuring equipment shall be verified by APA in accordance with the manufacturer's recommendations and otherwise in accordance with gas measurement standards at reasonable intervals, and if requested in the presence of representatives of the Shipper, but subject to paragraph 6 APA shall not be required to verify the uncertainty value of such equipment more than once in any 60 day period unless it can be shown through check metering or otherwise that the equipment may have unacceptable errors or uncertainty values.

6. Special Test

If the Shipper notifies APA that it desires a special test of any measuring equipment, APA shall co-operate to secure a prompt verification of the uncertainty value of such equipment. The cost of any such special test shall be borne by the Shipper if the equipment is accurate as that term is used in the Second Schedule.

7. Test Procedures

The procedures outlined in the Second Schedule shall apply to tests on equipment carried out pursuant to paragraphs 5 and 6.

Second Schedule: Test Procedures

1. A gas chromatograph or other device used for the determination of Gross Heating Value shall be deemed to be accurate if such equipment shall have an uncertainty value of +/- 0.5%. Pressure, differential pressure, temperature and mass transducers shall be deemed to be accurate if such equipment shall have an uncertainty value of +/- 1.0%. Meters and correcting instruments (**correctors**) shall be deemed to be accurate if such equipment shall have an uncertainty value of +/- 2.0%.

APA shall ensure that metering certifications in respect of equipment they own are completed in accordance with the APA Group Measurement Scheme.

For the purposes of this Schedule:

Master Meter means a standard meter, certified by an Independent Testing Authority, which is dedicated to the testing of the site meter. This meter shall not be used as an 'on-line' or spare meter.

The Master Meter shall where reasonably practicable be calibrated over the range of operating pressures, temperatures and densities which are representative of the operational range of each site meter to be tested.

Independent Testing Authority means the National Association of Testing Authorities of Australia (**NATA**) or other testing authority of equivalent standing agreed between the Parties.

Transmitter certification includes calibration at 0, 25, 50, 75, and 100% of transmitter span. If a system is proven reliable the period between certification may be increased to a longer period as agreed between APA and the User, with intermediate monthly checks against a secondary standard at the operating point.

- a. The uncertainty value of any measurement equipment shall be taken to mean the difference in the output reading or signal of the device with respect to that of a suitable calibration standard, expressed as a percentage.
- b. A correcting instrument is any device connected to a meter either directly or indirectly and which incorporates means to convert actual quantities or volume as measured by the meter into quantities or volume at standard conditions.

Standard Conditions shall be as follows:

Standard Pressure	101.325 kPa
Standard Temperature	15.0°C
Combustion Reference Pressure	101.325 kPa
Combustion Reference Temperature	15.0°C
Density of air at standard temperature and pressure	1.2255 m ³

- 2. If, upon testing, any measuring equipment that is found to have an uncertainty value within the meaning of Section 1, all previous recordings or output of such equipment shall be considered acceptable in computing the acceptance, transmission, and delivery of Gas. To the extent that the uncertainty value of the measuring equipment is not zero the equipment shall be adjusted immediately such that its uncertainty value is as close as practicable to zero. No adjustment to Shipper's account shall be made.
- 3. If, upon testing, any measuring equipment that is found to have an uncertainty value outside the meaning of Section 1, any previous recordings or output of such equipment shall be corrected by the full magnitude of the uncertainty value found for any period wherein it is known definitely that and to what extent the measuring equipment was operating inaccurately. In the event the period or degree of uncertainty value is not known or not agreed upon and no superior information is available from check measuring of other appropriate equipment, such correction shall be for a period extending over one half of the time elapsed since the date of the preceding test. The extent of the adjustment shall be based on procedures incorporating gas measurement standards in regard to estimating the circumstances in which the meter fails. The equipment shall be adjusted immediately such that its uncertainty value is as close as practicable to zero.
- 4. To determine the uncertainty value of any measurement device it shall be tested so that the output signal or reading of the device is as close as practicable to the normal operating point or, if the device normally operates within a particular range, at points within that range. In the latter case the uncertainty value shall be an average across the range.
- 5. For the purposes of Section 1 a suitable calibration standard shall be any facility or testing device with traceability to a primary standard, or a testing laboratory or facility having appropriate NATA or other accreditation recognised by APA.

As far as possible, the uncertainty value of the calibration standard should be at least half that achievable from the measuring equipment installed in the field.

6. Gas Measurement Standards

All measurements, calculations and procedures used in determining volume, except for the correction for the deviation from the Ideal Gas Law, shall be made in accordance with the instructions contained in the American Gas Association Report No. 3 (AGA 3), A.P.I. 14.3, Parts 1 to 4 of the Third Edition August 1991-92, for the Orifice Plate Metering systems; AGA Transmission

Measurement Committee Report No. 7 for Turbine Metering; American Gas Association Report No. 9 Measurement of Gas by Multipath Ultrasonic Meter; ANSI B 109.3 (1986) for Positive Displacement (PD) Metering; or AGA Report No. 11 Measurement of Natural Gas by Coriolis Meter (for mass measurement), together with all presently existing supplements, amendments and appendices to those Reports or any revisions thereof acceptable to APA and the Shipper. Those instructions will be converted where necessary for compliance with Australian Standard AS1000 "The International System of Units (SI) and its Application", the Commonwealth "National Measurement Act 1960" and regulations there under and the Australian Gas Association publication "Metric Units and Conversion Factors for use in the Australian Gas Industry" or any revision thereof acceptable to APA and the Shipper.

The correction for deviation from the Ideal Gas Law shall be determined from the relevant method contained in "Supercompressibility: AGA Transmission Measurement Committee Report No. 8" (1992), or any revision thereof acceptable to APA and the Shipper. Metering Equipment may calculate Supercompressibility using compositional data, or may calculate Supercompressibility by using an alternate method in AGA Report No.8.

Other measurement standards may be adopted as agreed between APA and the Shipper.