

Gas Wholesale Consultative Forum

Subject:	Gas Quality and Metering Rule Change Proposal
Agenda item:	11
Paper #:	6
Contact:	Luke Garland
Date:	THURSDAY, 17 SEPTEMBER 2020

1. EXECUTIVE SUMMARY

Item raised by:	AEMO
Rule requirement:	NGR 287, 288, 289, 291, 299 & 303
Link to National Objectives:	To promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas
Previous forum discussion(s):	N/A
Item impact:	Align the NGR better with the Gas Safety Act (Victoria), remove inconsistencies and reflect current practise.
Impacted parties:	Registered participants in the DWGM
Purpose:	This paper informs the GWCF of AEMO's proposed approach to modify the National Gas Rules to remove a misalignment in the NGR with the previous MSOR and the Gas Safety Act (Victoria), enhance the operation of the DWGM with respect to metering, and ensure flexibility for future operation of the DWGM.
Desired outcome:	Through consultation, endorsement for AEMO submitting this rule change request to the AEMC.

2. BACKGROUND

AEMO proposes to amend NGR 287, 288, 289, 291, 299 & 303 to;

- Recognise two AEMO documents; the *Gas Quality Standard and Monitoring Guidelines* and the *Gas Quality Guidelines*;
- Remove the limitation on who can provide gas quality monitoring equipment at injection points into the DTS to align the NGR with current practise;
- Enable flexibility in the NGR for future system operation;
- Remove the reference to specific standards in the NGR; and
- Recognise the interdependencies within the NGR metering requirements.

3. DISCUSSION

3.1. Current Framework

3.1.1. Gas Safety and Gas Quality

AEMO is the independent operator of the DTS in Victoria and is responsible for monitoring the quality, safety and reliability of supply. These responsibilities are outlined in both Commonwealth and State legislation. AEMO maintains a Gas Safety Case which is reviewed and approved every five years by Energy Safe Victoria (ESV).

Outlined below are two primary documents that underpin AEMO's management of gas quality.

Gas Quality Standard and Monitoring Guidelines

This document provides an overview of the standard of quality required at all system injection points and sets out AEMO's requirements for gas quality monitoring in line with rules 287 and 288 of the NGR.

Information on gas quality parameters and their limits are obtained from:

- AS 4564 – Specification for general purpose natural gas
- the Victorian Gas Safety (Gas Quality) Regulations 2018
- AEMO's Service Envelope Agreement with APA

The Gas Quality Standard and Monitoring Guidelines centralise all the information into one document, specifying limits for parameters and how they are to be monitored. This includes those parameters which do not have prescribed limits in standards and cannot be referenced but must be appropriately determined by transmission system operators for the pipelines characteristics (such as odorant, water content, mercaptan sulphur and temperature).

The document is published on AEMO's website. It is a readily available resource to participants and other stakeholders who have an interest in the quality of gas that is transported throughout Victoria.

Gas Quality Guidelines

This guideline outlines how AEMO responds to short-term exceedances to the standard gas quality specifications. It outlines how AEMO balances the risks to supply of off-specification gas with the risks to public safety associated with curtailment of the injection, subsequent system disruption and re-lights in gas consumer premises.

This wholistic approach to risk management is required of gas companies under section 32 of the Gas Safety Act 1997. The guidelines cover in detail AEMO's process for acceptance of off-specification gas, which is a broadly outlined in NGR 289.

The Gas Quality Guidelines cover an area of gas quality management not covered by AS4564. Transient variations from the absolute limits set out in the standard are outside of its scope (AS4564 Appendix B). The standard does acknowledge that such situations occur and that additional conditions may be included in transportation and supply contracts to manage these events.

3.1.2. Gas Metering

AEMO as the independent operator is also responsible for the oversight gas metering processes for the DTS in Victoria. Outlined below is an overview of the calibration review, one of the areas of the metering process which AEMO is seeking to make amendments to.

Review of Metering Calibration Requirements Process

AEMO is responsible for making procedures relating to metering uncertainty limits and calibration requirements for metering installations (*Wholesale Market Metering Procedures (Victoria)*). This document sets out the requirements for the calibration of metering installations.

Under NGR 299(2), each metering installation must be calibrated by the responsible person in accordance with the requirements in the procedure. The uncertainty limits contained in the Procedure, which each of the meters are required to meet, are consistent with limits in literature. These limits were chosen to ensure they are able to be achieved by commercially available meters when calibrated as per the calibration requirements, as set out in the procedure and in the table below.

Table 1 Calibration Requirements

Category	A	B	C	D
Peak flow rate (standard cubic meters per hour)	>300,000	>40,000 ≤300,000	>4000 ≤40,000	≤4,000
Minimum pressure and temperature transmitter calibration frequency	Quarterly	Six-monthly	Annually	Annually or as otherwise agreed with AEMO
Remote meter fault detection surveillance frequency	Daily by exception	Daily by exception	Daily by exception	Daily by exception
In situ meter proving frequency	Annually Note: for ultrasonic meters by electronic means	Annually Note: for ultrasonic meters by electronic means	Annually or as otherwise agreed with AEMO Note: for ultrasonic meters by electronic means	Annually or as otherwise agreed with AEMO Note: for ultrasonic meters by electronic means

These requirements apply to all metering installations where gas is injected into or withdrawn from the DTS and apply to all responsible persons in the DWGM. The results of the meter calibrations, and whether they are achieving the required uncertainty limits, must be provided to AEMO as specified under NGR 299(6), and these results are used by AEMO to review the calibration requirements in order to ensure the accuracy of the metering installations in the DTS. NGR 299(3) specifies that AEMO must conduct a review into the calibration requirements set out in the procedures at intervals not exceeding one year.

3.2. Rule Amendment Proposal

Rule 287 Gas quality standard

AEMO publishes a Gas Quality Standard to consolidate information from various sources and specify limits for parameters not explicitly stated by regulations or the Australian Standards. This document is not recognised in the rules, however a provision for AEMO (then VENCORP) to determine its own standard was previously present in the Victorian Gas Industry Market and System Operations Rules (MSOR).

Rule 287 does give provision for AEMO to approve a quality standard that differs from the standard gas quality specifications at individual injection and withdrawal points. In practise, however, there are not individual standards for each withdrawal point, instead AEMO applies one gas quality standard to all injection points in the system. This is considered a more practical approach, given that:

- maintaining an gas quality standard with Registered Participants at each point is not straightforward since the representation at each delivery and receipt point evolves over time; and,
- the complexity of system flows means many withdrawal points can receive gas from a variety of injection points under certain circumstances.

AEMO is proposing a rule change to simplify existing arrangements and refer to AEMO's Gas Quality Standard in addition to AS 4564.

Rule 288 Gas quality monitoring

The requirement for a gas quality monitoring system and a gas quality monitoring plan, covered by NGR 288, does not reflect current practise at injection points into the DTS. The rule currently stipulates that the monitoring system and plan must be provided to AEMO by the declared transmission system service provider.

It is not clear why the rule was written to specify the declared transmission system service provider when this was not the practise at the time the NGR was drafted. Five of the current ten injection facilities maintain their own monitoring equipment and submit their own plans to AEMO.

AEMO is proposing a rule change to acknowledge current practise that parties other than the declared transmission service provider have the option to provide their own monitoring equipment that complies with the Gas Quality Standards and Monitoring Guidelines.

Rule 289 Off-Specification Gas

AEMO may in its reasonable opinion accept the delivery of off-specification gas when the conditions for clause (5)(b) of NGR 289 is satisfied. Although there is currently no requirement under rules or legislation, AEMO maintains a framework for managing variances from the standard specifications in the Gas Quality Guidelines.

While it is imperative that AEMO has the discretion to risk assess each off-specification event individually, this is usually the exception. The Gas Quality Guidelines provide a uniform framework and transparent approach for managing the vast majority of transient off-specification events.

As noted in section 3.1.1, AS4564 Appendix B states that variations from the gas quality standard, their durations and responsive actions may be considered in transportation

contracts. AEMO is of the opinion that the current arrangements should be reflected in the rules.

Rule 291 Metering Installations for Operational Gas

NGR 291 states that the DTS Service Provider must not withdraw gas at a connection point delivering operational gas unless the connection point has a metering installation that satisfies AEMO's requirements. This ensures that gas used for the purposes of operating DTS assets is accurately metered in order to settle the market accordingly. At present, only the DTS Service Provider is able to withdraw operational gas. However, this may be an issue in the future if participants other than the DTS Service Provider need to withdraw gas for operational purposes.

AEMO is seeking to amend the wording of NRG 291 to ensure that the obligation preventing the withdrawal of gas for operational purposes from the DTS without a compliant metering installation is extended to any "responsible person".

Rule 299 Review of the Metering Calibration Requirements

To meet the requirement under NGR 299(3) discussed in 3.1.2, AEMO requires an adequate set of calibration results to be provided by the responsible persons under rule 299(6). This information, together with any updates to gas metering standards, is then used each year to evaluate whether the calibration requirements or uncertainty limits require adjustment. AEMO is unable to complete an adequate review of the calibration requirements and uncertainty limits without sufficient data from the responsible persons, creating an interdependency between these NGR requirements that is not currently recognised by the rules.

AEMO has at times encountered difficulty in obtaining the results of meter calibrations, impeding AEMO's ability to meet its requirement under NGR 299(3). AEMO did not receive the full set of calibration data for the 2018 calendar year, and is also yet to receive some outstanding meter results for the 2019 calendar year, so a conclusive review of the metering calibration requirements was not able to be conducted for these years.

As stated in 3.1.2, NGR 299(3) specifies that AEMO must conduct a review into the calibration requirements at intervals not exceeding one year. This requirement has been in place since prior to the start of the DWGM and was present in the MSOR. In that time, despite the frequency of reviews, AEMO has not changed the calibration requirements. AEMO therefore considers the annual requirement to be excessive. Decreasing the frequency of reviews would enable a larger data set of calibration results to be collected, which would lead to a more conclusive review of the calibration requirements and uncertainty limits.

AEMO proposes to amend the NGR 299(3) obligation on AEMO to review the metering calibration requirements at intervals not exceeding one year, by decreasing the frequency of reviews, and to appropriately recognise the interdependent nature of the rule requirements, in order to ensure that an adequate set of calibration results is available for use in conducting the review.

Rule 303 Energy Content Calculations

AEMO is required under NGR 303 to make energy calculation procedures for which AEMO and affected participants must follow in order to calculate the energy content flowing through metering installations.

Under NGR 303(5), the energy content of gas flowing through a metering installation is required to be calculated in accordance with AGA 7, AGA 8 and ISO6976 unless the responsible person, the affected Participants and AEMO agree otherwise.

Standards are updated from time to time and the most relevant standard may be different at any given point in time. Whilst the NGR currently states that AGA 7 and AGA 8 should be used, as these were appropriate at the time of drafting, these standards are no longer considered best practise by the industry. Referencing specific standards in the NGR means that as these standards become outdated, the NGR must be updated to reflect this.

In order to allow for flexibility in the NGR, AEMO proposes to amend the wording of NGR 303(5) to allow the relevant standard to be referenced within the energy calculation procedures instead of the NGR. As the relevant standards are, AEMO and the responsible persons can collaboratively update the standards referenced to ensure currency.

4. RISKS / FINANCIALS

There are no risks or financial implications regarding this rule change proposal as this proposal is designed to align the rules with the Australian Standards, legislation and current practise.

5. TIMING AND NEXT STEPS

AEMO is seeking feedback on this proposed rule change to be provided to GWCF_Correspondence@aemo.com.au prior to the 29 October 2020. An update will be then provided at the next GWCF.

If feedback received is generally supportive of this change and there are no concerns, AEMO will progress this rule change request as an expedited rule change request, per NGR 9. For further detail on the rule change process please see the AEMC link below.

<https://www.aemc.gov.au/our-work/changing-energy-rules>

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