



Regulatory Aspects – Directive 17 Fuel Gas Requirements

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EUB Regulatory Documents

Regarding Fuel Gas

- ◆ **Directive 17** – Measurement Requirements for Upstream Oil and Gas Operations (Feb 2005) – Contains Specific Measurement Requirements
- ◆ **Directive 64** – Requirements and Procedures for Facilities (Dec 2005) – Field Inspectors, Inspection Manual
- ◆ **Directive 46** – Production Audit Handbook (Jan 2003) – More Detailed Audit Requirements – With focus on Oil and Gas Batteries
- ◆ **Directive 7** (and ID 2002-01) – Production Accounting Handbook – How to report to the Petroleum Registry
- ◆ **Directive 60** – Upstream Petroleum Industry Flaring, Incinerating, and Venting (Nov 2006) – Measurement section clearly spells out fuel gas dilution gas expectations

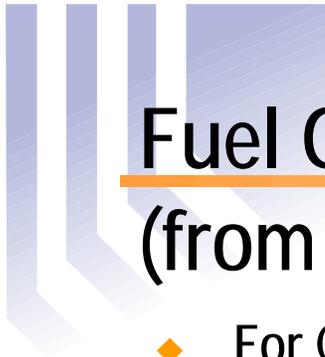
When does fuel need to be reported?

- ◆ All fuel used to operate process equipment, instruments, heaters, compressors, pumps, artificial lift systems, flare pilots, dilution gas, blanket gas, treaters, line-heaters and other production equipment must be reported.
- ◆ When it is diesel, gasoline, electricity, or royalty-paid propane it does not need to be reported to the petroleum registry.
- ◆ With the introduction of the petroleum registry, in addition to total fuel used, a new requirement to report fuel volumes and locations where they were physically used was implemented e.g. multiple compressor sites along a gas gathering system.



Fuel Gas Estimates

- ◆ Where small volumes of fuel gas are consumed (<500 m³/d) an estimate of consumption may be all that is required. An exception is dilution gas added to an acid gas flare which must be measured regardless of volume (D17, section 4.3.5.2).
- ◆ Even small volumes of fuel gas must be reported monthly to the Registry.
- ◆ These smaller fuel volumes may include casing head gas, pump motors, instrument gas, building heaters, heated tanks, line heaters, etc.



Fuel Gas Estimates – Direction to Audit Staff (from Directive 46 – Jan 2003)

- ◆ **For Compressors**

If a compressor is found to have no meter for the measurement of fuel gas, the operation personnel has to supply the fuel gas usage estimate based on the make, model, and operating conditions (rpm and HP) of the engine. (The fuel gas usage may be obtained from the manufacturer's specifications or from Figure 4-13 of the GPSA *Engineering Data Book*.)

- ◆ **For Reboilers and Other Equipment**

The reboiler fuel gas requirements, as well as those for glycol pumps and others, should be obtained from the operation personnel, who can cite manufacturer specifications or provide a reasonable estimate.

Ensure that all fuel information is obtained during the inspection.



Fuel Gas Estimates (con't)

- ◆ What are the EUB expectations regarding fuel gas estimates?
 - ◆ The expectation is that an engineering estimate, when allowed (consumption less than 500 m³/d), will be within 10% for any point in time.
 - ◆ The engineering estimate may be based on equipment specifications and operating time or it may be based on previous measurements of fuel gas, updated annually.
 - ◆ The company must be able to provide documentation to show how the engineering estimate is arrived at.

Figure 11 (D17, Section 1.7.2)

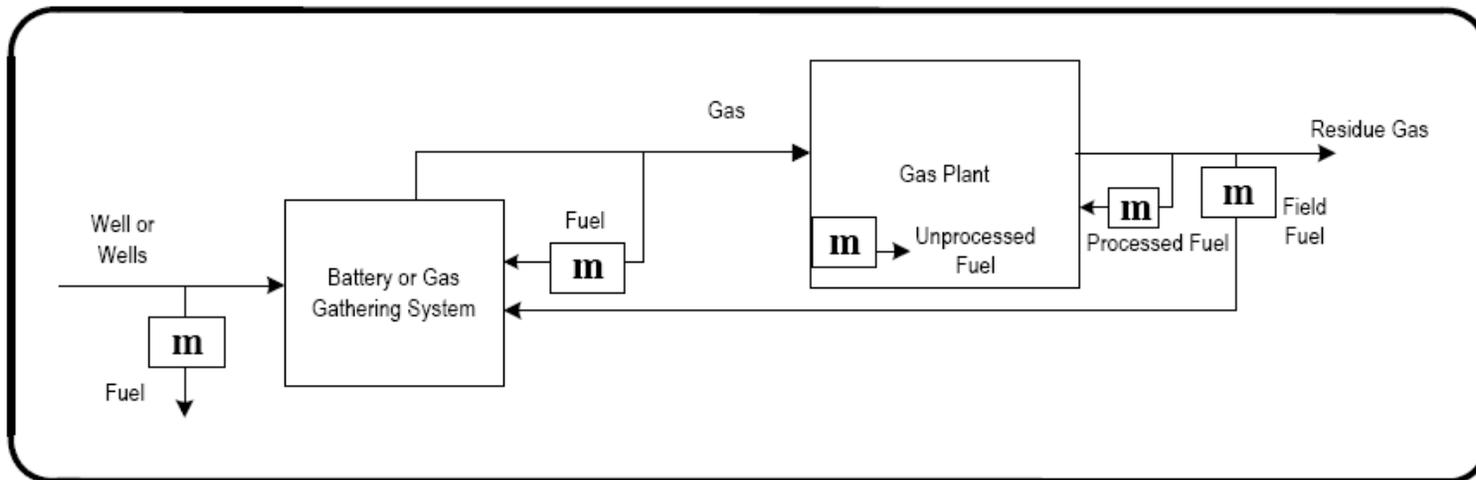


Figure 11

- ◆ Where "m" is Single point measurement uncertainty
>500 m³/d = 3% (generally measurement required)
<500 m³/d = 10% (generally estimate ok)

(% is with 95% confidence level ie 19 out of 20 times).



Questions and Answers

- ◆ I am delivering my fuel gas from my plant to a number of compressors along a gas gathering system in the field – do I need to measure it at each compressor site?
 - ◆ If fuel gas volumes leaving the plant are greater than 500 m³/d it must be measured leaving the plant site and at any compressor site along the gas gathering system where the fuel consumption is greater than 500 m³/d. The consumption for each compressor site must be reported on the gas gathering system report.
 - ◆ From Guide 7 (Sep 2002)

Gas gathering system: You must identify the compressor station where the ... fuel usage occurred. Report the activity using the reporting ID for the compressor station. If more than one compressor station is associated with the gathering system, then report for each compressor the flared, vented, or fuel volume(s). The compressor station is only reported when an activity occurred at the compressor station (Section 2, pg 59).



Questions and Answers (con't)

- ◆ Does purchased fuel gas need to be reported?
 - ◆ Yes – purchased fuel gas needs to be reported and that function is contained in the registry
 - ◆ If the purchased fuel is diesel, gasoline, electricity, or royalty paid propane it does not need to be reported.



Information/Questions?

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