

Implications of Proposed Metering Requirements on Existing Infrastructure on the OCS

For discussion purposes, the application of the proposed rule was assessed for an existing GoM shelf facility. While facilities will vary, the example below, and described in the attached P&ID, is typical of the challenges anticipated in retrofitting an existing facility, notably the following:

- Compliance with the proposed rule would require the installation of multiple meters. Realistically, a three meter setup is the minimum number likely for a majority of the new facilities and more required on older facilities due to platform design, piping limitations and pressure systems employed in the processing train.
- The cost impact of the rulemaking has been grossly underestimated as it appears a single meter premise was used and the number of facilities impacted by the rule underestimated.
- The accuracy of +/- 2% specified over the wide range of conditions in which the vent/flare systems (High, Immediate, Low and Atmospheric) operate is not achievable in this application.
- The ability to modify existing facilities to install the necessary piping and meter configuration may not be feasible on some facilities given existing space limitations and current piping configurations.
- The ability to comply within 120 days is not feasible given the engineering, process reviews, and regulatory submittals required to insure that safety hazards are not created in the process of performing the modifications required of the facilities

Multiple meters would be required to be installed to measure all gas vented / flared on a platform.

There are a significant number of technical/engineering issues associated with attempting to meter flares/vents on existing platforms. A typical platform has as many as four primary vent systems:

- HP vent system with PSV vents routed directly to the vent boom;
- Intermediate-pressure vents routed to the vent scrubber with lower PSVs and vents;
- Low Pressure Venting systems normally operating in service below 150#.
- Atmospheric vents from stock tanks and other atmospheric vessels.

These vents cannot be commingled into a common header for metering, primarily due to safety issues associated with back-pressures that occur during relief events/upset conditions. As such, a minimum of three separate meter runs (or more depending on facilities that may be operating "dedicated separation" trains and operating at other than host facility pressures) would be required. In the particular case provided, five meters would be required to be installed.

In addition, there are typically several other local vent points (mostly atmospheric) that are segregated from these primary vent systems. These may include sump vents, compressor packing vents, gas-driven pumps vents (chemical injection, sump), instrument controller vents, valve actuator vents, gas seal vents, etc. Again, it may not be feasible to pipe these vents to a common header for metering due to back pressure limitations of each. As such, several additional meters may be required for these types of atmospheric vent systems. Space

restrictions for new piping may also be a limiting factor on existing platforms. There is a particular concern for the creation of safety hazards when re-routing systems on an existing platform where space is limited.

The time required to field verify existing systems, engineer new hardware installations, procure and perform modifications will far exceed the 120 days specified in the draft proposed rule. In order to retrofit an existing platform with vent/flare meters, the following steps would be required:

1. Identify all vent/flare points and the pressure regimes/variability of each. Confirm existing piping runs and establish volumes limits and capacities.
2. Conduct engineering/piping design analysis in accordance with API RP 520, API RP 14C, 14E, 14G; API RP 500 A & B among others.
3. Determine, if possible, the types of meters that meet the tolerance specifications of the engineering design
4. RFP/bid process for equipment, piping, and installation; procure, fabricate and deliver
5. Conduct HazOp for the revised system, taking into account the safety issues associated with both steady state and upset conditions
6. Revise Production Safety System, SAFE Charts, and Area Classification drawings; submit to MMS for approval
7. Field installation, calibration & inspection
8. As necessary, revise commingling and Production Handling Agreements.

Given this process, the estimated time it would take to bring an existing platform into compliance would far exceed the 120 days in the proposed rule. Likewise, the cost to bring an existing platform into compliance is estimated to far exceed the \$77,000 noted in the proposed rule. For the particular platform discussed here, the cost associated with the modifications required to the facilities is expected to well exceed \$375,000.

The proposed regulatory trigger will encompass more facilities than those producing 2,000 BOPD, given how production is handled on the OCS. Multiple facilities may be involved in the processing/handling of production streams and it is not uncommon for "host" facilities to handle production from satellite locations that are in excess of the "host" facility production volumes.. It is therefore believed that the number of facilities to be impacted by the rule has been underestimated. Given the cost per facility to comply as well as the number of facilities to be impacted has been underestimated it is believed that the cost impact of the rule has been grossly underestimated.