

(February 27, 2009)

Proposed Rule 433 Natural Gas Quality

(a) Purpose

The purpose of this rule is to monitor and determine the effects of liquefied natural gas additions to the natural gas distribution system on the quality of natural gas being supplied to end users located within the South Coast Air Quality Management District (District) and limit increases of air pollutant emissions caused by natural gas quality changes.

(b) Applicability

Except as noted in section (h), all natural gas distribution system operators that convey natural gas to end users located within the District are subject to this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) A BTU DISTRICT is a geographic area defined by the operator of a natural gas distribution system for the purpose of determining the heating value of natural gas and natural gas bills for natural gas customers within that area.
- (2) LIQUEFIED NATURAL GAS (LNG) is natural gas that has been converted to a liquid state for shipment by a marine vessel and then converted back to a gaseous state for delivery to a natural gas distribution system.
- (3) A STANDARD CUBIC FOOT is one cubic foot of gas at a standard temperature of 60° Fahrenheit and a standard pressure of 14.73 pounds per square inch absolute.
- (4) The WOBBE INDEX (WI) of natural gas is the higher heating value (HHV) of the natural gas, expressed as Btu per standard cubic foot, divided by the square root of the natural gas specific gravity (SG), i.e.,

$$WI = HHV / SG^{1/2}$$

Where, SG = $\frac{\text{density of gas in pounds per standard cubic foot}}{\text{density of air in pounds per standard cubic foot (.07650 lb/ft}^3\text{)}}$

(d) Requirements

(1) Gas Quality Monitoring Plan

The operator shall submit to the Executive Officer for written approval and implement a Gas Quality Monitoring (GQM) Plan. The objectives of the GQM Plan are to monitor the quantity, composition and WI of LNG delivered to distribution system receipt points and the composition and WI

of natural gas in each Btu District. The GQM Plan shall specify the following:

- A) Locations in the distribution system at which the WI will be monitored,
- B) Information showing that the selected locations are sufficient to determine the composition and WI at all locations in the distribution system,
- C) Sampling and analytical methods and calculations to be used in determining the composition and WI,
- D) Frequency of composition and WI determination at each location,
- E) Receipt points at which LNG is being added to the distribution system,
- F) Frequency at which LNG quantities added to the distribution system at each LNG addition location will be recorded, and
- G) Method, frequency and format of reporting the LNG composition, WI and quantity data to the District.

(2) GQM Plan Updates

Whenever there is a change in the locations of receipt points at which LNG is being added to the distribution system or a change in the distribution system that requires a change in the locations at which the composition, WI and/or LNG additions must be monitored to comply with paragraph (d)(1), an updated GQM Plan shall be submitted to the Executive Officer for written approval and implementation.

(3) Historical Data

The operator shall submit to the District a summary of the daily average HHV, SG and WI at each Btu District within the District for the three year period from January 1, 2006 until December 31, 2008.

(4) LNG Rollout Plan

The operator shall submit to the Executive Officer for written approval and implement a LNG Rollout Plan, which shall include, but not be limited to, the following:

- (A) Past actions and future planned actions to educate natural gas end-users about gas quality changes and recommend revisions to end-user equipment maintenance or tuning practices;
- (B) Past actions and future planned actions to determine the effects of gas quality changes from LNG on emissions from end-user combustion equipment;
- (C) Results of emission testing conducted prior to June 5, 2009 by the operator or a contractor for the operator at an end-user, or at a test

facility, for the purpose of determining effects of changes to gas quality from LNG, including the AQMD application or permit number of the tested equipment, equipment description (type of equipment, make, model, rated thermal input), the date of the test, sampling and measurement methods, the natural gas WI, and the test conditions and emission results. The operator shall identify whether a test was conducted to determine baseline emissions prior to changes in WI from LNG, or after changes in WI due to LNG. If the operator conducts emission tests before and after any repairs, adjustments or tuning of the equipment, the operator shall report all emission tests and what repairs, adjustments or tuning was conducted. The operator does not have to provide in the plan the results of tests that were posted by June 5, 2009 on a publicly available website identified in the plan;

- (D) A map of Btu Districts existing as of June 5, 2009;
 - (E) A map of any planned changes to Btu Districts; and
 - (F) Past actions and future planned actions to mitigate effects of gas quality changes from LNG such as retuning end-user combustion equipment.
- (5) LNG Rollout Plan Amendment
- If the operator determines that a change to the LNG Rollout Plan is needed, an amended LNG Rollout Plan must be submitted to the Executive Officer for written approval. The old plan must continue to be followed until the amended plan has been approved.
- (6) District-Wide Projection of LNG Emission Effects
- The operator shall develop and maintain a projection of LNG effects on emissions within the District based on population data of end-user equipment and available information on the effects of LNG on emissions from various end-user equipment types. The projection shall be updated to incorporate new information on the effects of LNG on emissions as it becomes available. The operator shall report to the District periodically the data and methodology used for the projection and the results in annual tons of NO_x, CO and VOC.

(e) Compliance

- (1) The operator of a natural gas distribution system subject to the requirements of section (d) shall:
 - (A) By July 10, 2009, submit to the Executive Officer historical data required by paragraph (d)(3),
 - (B) By July 10, 2009, submit an initial GQM Plan and LNG Rollout Plan with a plan application and fee to the Executive Officer for approval, and

- (C) By August 1, 2009, implement the approved GQM Plan and LNG Rollout Plan or the plans as submitted if they have not yet been approved.
 - (D) By December 31, 2009, develop an initial projection of LNG effects on emissions as described in paragraph (d)(6).
- (2) Whenever plan modifications are needed, the modified plan, shall be submitted to the District for approval within 30 days from the time the operator first knew, or reasonably should have known, of the change.
 - (3) Any failure of the operator to comply in a timely manner with a reasonable request by the Executive Officer for information needed to evaluate a submitted plan or plan modification shall be deemed a violation of this rule.
- (f) **Monitoring, Recordkeeping and Reporting**
- Except as approved in writing by the Executive Officer, the operator shall comply with the following minimum monitoring, recordkeeping and reporting requirements.
- (1) At each receipt point where LNG is being added to the distribution system:
 - (A) Determine the composition, WI, SG and HHV of LNG being added to the distribution system at least once every hour and keep records of this information, and
 - (B) Record the volume, expressed as standard cubic feet, of LNG added each hour.
 - (2) At each Btu District in the natural gas distribution system, determine the natural gas composition, WI, SG and HHV at least once every hour and keep records of this information.
 - (3) Report the recorded data described in (f)(1) and (f)(2) for each month to the District by the 15th day of the following month. The data shall be transmitted to the District by email as a Microsoft Access™ file in a format approved by the District.
 - (4) Report all actions required by and information resulting from the LNG Rollout Plan described in paragraph (d)(4) for each month to the District by the 15th of the following month. The first report shall include all actions taken since those reported in the LNG Rollout Plan application. Each report shall include the following.
 - (A) Results of all emission tests on end-user equipment, including the AQMD application or permit number, equipment description (type of equipment, make, model, rated thermal input), the date of the test, sampling and measurement methods, the natural gas WI, and test conditions. The operator shall identify whether a test was

conducted to determine baseline emissions prior to changes in WI from LNG, or after changes in WI due to LNG. If the operator conducts emission tests before and after any repairs, adjustments or tuning of the equipment, the operator shall report all emission tests and what repairs, adjustments or tuning was conducted.

- (B) Guidance, services or technologies offered to end-users to mitigate emission increases caused by LNG.
- (5) Beginning July 1, 2009, submit semi-annual reports on the District-wide projection of LNG effects on emissions described in paragraph (d)(6).

(g) **Methods**

Except as approved in writing by the Executive Officer, the operator shall utilize the following Gas Processors Association (GPA) methods to determine the WI, HHV and SG of natural gas:

GPA Method 2166, Obtaining Natural Gas Samples for Analysis by Gas Chromatograph,

GPA Method 2261, Analysis of Natural Gas and Similar Gaseous Mixtures by Gas Chromatography, and

GPA Method 2172, Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis.

A calibrated gas chromatography system that complies with California Public Utilities Commission General Order 58-B, items 4 and 8, shall be used.

(h) **Exemptions**

- (1) Any natural gas distribution system operator whose only source of natural gas is by receiving natural gas from another natural gas distribution system operator at supply points located within the District is exempt from this rule.
- (2) Any natural gas distribution system operator that does not receive LNG directly from an LNG supplier is exempt from paragraphs (d)(4), (d)(5), (d)(6) and (d)(7) of this rule.