



Asset Type: **Gas Transmission, Distribution, and
Metering**

Effective Date: **March 2008**

Function: **Design, Operations, Maintenance**

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Title: Natural Gas Quality

Purpose This standard defines the responsibilities and requirements for Pacific Gas and Electric's (Company's) natural gas quality.

Safety Perform all gas measurement and gas quality related work safely and in accordance with all applicable safety rules, the Code of Safe Practices, and Utility Standard Practice (USP) 22, "Safety and Health Program."

Requirements The requirements for natural gas quality are outlined in the Company's Gas Rule 21, "Transportation of Natural Gas," Section C, which states that gas delivered to the Company for transportation to the delivery point(s) shall meet the gas quality specifications stated in the service agreement between the delivering pipeline company and the Company. If no gas quality specifications agreement exists between the delivery pipeline company and the Company for the receipt point(s), or if the natural gas is not delivered by a pipeline, the gas received by the Company shall meet the specifications outlined in Gas Rule 21.

Natural Gas Topics

This standard is the governing document for several Company topics and work procedures that address maintenance and operations details required to meet and sustain the Company's natural gas quality. These topics are as follows:

1. Interchangeability

The natural gas accepted into the Company's pipelines shall be interchangeable with the gas historically supplied and shall meet the Company's interchangeability specifications.

2. Removal and Control of Liquids from Pipelines

All gasses entering the Company's pipeline systems shall contain no free liquids. The Company shall monitor and make reasonable efforts to remove and/or mitigate the effects of liquids that may drop out during transport.

3. Hydrocarbon Dew Point Testing

Hydrocarbon dew point measurements shall be taken at locations where hydrocarbon condensate liquid problems exist, are suspected, or where testing is required by contract(s) or agreement(s).

4. Maintenance and Operations of Water Dew Point Test Instruments

Approved water dew point test instruments and procedures shall be used to ensure that natural gas entering the Company's system does not exceed 7 pounds of water per million standard cubic feet (MMcf) of natural gas.

5. Determination of Gas Quality Values for California Gas Wells

When a new gas well begins production into the Company facilities, a series of timely samples is taken and analyzed to establish the official gas quality values for the well. The official values are for heating value, specific gravity, nitrogen content, and carbon dioxide content of the gas. These values are used in volume calculations and for the determination of the total therms produced from the well, in a specified time frame, and for the custody transfer amounts attributable to the gas producer(s).

6. Sulfur Safety Procedures for Natural Gas

Because elemental sulfur may be present in the natural gas within the Company system, it is necessary that proper safety actions and mitigation activities be performed to safely remove such sulfur.

Approved by Robert Howard
Vice President

Implementation Responsibilities The vice president of Gas Transmission and Distribution (GT&D) is responsible for issuing and updating this standard. GT&D directors, managers, superintendents, and supervisors are responsible for ensuring that the provisions of this standard are followed.

Compliance Implementation and effectiveness are measured by responsible managers and superintendents. In addition, periodic reviews may be conducted by the Gas Measurement/Gas Quality section of the Gas Engineering department.

Recision This document cancels and supersedes Recommended Practice RP4332, "Removal and Control of Liquids from Gas Pipelines Maintenance and Operation of Associated Gas Conditioning Equipment."

Reference Documents

America Society for Testing and Materials International (ASTM) D1142-95, "Standard Test Method for Water Vapor Content of Gaseous Fuels by Measurement of Dew-Point Temperature"

California Public Utilities Commission (CPUC) General Order (G.O.) 58-A, "Standards for Gas Service in the State of California"

CPUC G.O. 112-E, "Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems"

Gas Rule 21, "Transportation of Natural Gas"