API COMMITTEE ON PETROLEUM MEASUREMENT

Sally Goodson
API Standards Associate
API Committee on Petroleum Measurement

- COPM Mission and Objectives
- COPM Subcommittees
- COMQ – Committee on Measurement Quality
- COPM Standards Development
- COPM Special Projects
- COPM ISO Relations
API Committee on Petroleum Measurement

COPM Mission and Objectives
API Committee on Petroleum Measurement Mission

COPM provides leadership in developing and maintaining cost effective, state of the art, hydrocarbon measurement standards and programs based on sound technical principles consistent with current measurement technology, recognized business accounting and engineering practices, and industry consensus.
COPM Responsibilities

COPM and its subcommittees are responsible for developing the policies of API on hydrocarbon measurement.

COPM engages in Standardization, Governmental Response, and Training.
COPM Objectives

Develop & maintain performance based measurement standards & practices

Develop guidelines which accelerate the application of new measurement technology

Promote the adoption and use of API measurement standards
COPM Objectives

Foster education & training to effectively apply measurement standards

Provide representation, including coordination of the USA position, on international petroleum measurement standards committees.
Standards and Practices

- Physical Properties
- Measuring Equipment
- Measurement Systems
- Measurement Practices
API COMMITTEE ON PETROLEUM MEASUREMENT

COPM Subcommittees
API Committee on Petroleum Measurement Subcommittees

- Committee on Evaporation Loss Estimation
- Committee on Gas Fluids Measurement
- Committee on Liquid Measurement
- Committee on Measurement Accountability
- Committee on Measurement Education and Training
- Committee on Measurement Quality/(Joint ASTM D02.02)
- Committee on Production Measurement and Allocation
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COMQ – Committee on Measurement Quality
COMQ: Committee on Measurement Quality

COMQ develops, approves, and maintains standards pertaining to measurement quality of hydrocarbons (sometimes in conjunction with other COPM Subcommittees)

This a joint committee with ASTM International through ASTM Committee D02.

Not all standards developed by the committee are joint API-ASTM standards.
Committee on Measurement Quality Standards

- Temperature Determination, MPMS Chapter 7
- Sampling, MPMS Chapter 8
- Density Determination, MPMS Chapter 9
- Sediment & Water Determination, MPMS Chapter 10
- Physical Properties, MPMS Chapter 11
- Statistics, MPMS Chapter 13 (Joint with COLM)
COMQ Work Groups

Work Group A
- Temperature (Chapter 7)
- Density (Chapter 9)
- Physical Properties (Chapter 11)

Work Group B
- Sampling (Chapter 8)
- Sediment and Water (Chapter 10)
COMQ Chapter 11.1 Physical Properties 2004 Edition

Calculates temperature and pressure volume correction factors for generalized crude oils, refined products and lubricating oils.

Provides the algorithm and implementation procedure for the correction of temperature and pressure effects on density and volume of liquid hydrocarbons.
Committee on Measurement Quality and ASTM Standards

API
Chapter 8.1
Chapter 8.2
Chapter 8.3
Chapter 8.4

ASTM
ASTM D 4057
ASTM D 4177
ASTM D 5854
ASTM D 5842
Committee on Measurement Quality and ASTM Standards

<table>
<thead>
<tr>
<th>API</th>
<th>ASTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 9.1</td>
<td>ASTM D 1298</td>
</tr>
<tr>
<td>Chapter 9.2</td>
<td>ASTM D 1657</td>
</tr>
<tr>
<td>Chapter 9.3</td>
<td>ASTM D 6822</td>
</tr>
</tbody>
</table>
Committee on Measurement Quality and ASTM Standards

API
Chapter 10.1
Chapter 10.2
Chapter 10.3
Chapter 10.5
Chapter 10.6
Chapter 10.7
Chapter 10.8
Chapter 10.9

ASTM
ASTM D 473
ASTM D 4006
ASTM D 4007
ASTM D 95
ASTM D 1796
ASTM D 4377
ASTM D 4807
ASTM D 4928
COMQ ISO/EI Relations


It also provides representation to the Energy Institute (formerly Institute of Petroleum).
API COMMITTEE ON
PETROLEUM MEASUREMENT

COPM Standards Development
Standards Development & Maintenance

Over 150 COPM Standards, Procedures or Guidelines in the measurement suite.

Existing standards reviewed at 5 year intervals:
- Affirmed, Revised, or Withdrawn.

Technology developments continually spur new standards.

There are about 30 new or revised standards under development at any given time.
API COPM- New Publications
2007


Ch 11.2.4 - Temperature Correction for NGL & LPG

Ch 11.2.5 - A Simplified Vapor Pressure Correlation for Commercial NGL’s
API COPM- New Publications 2007

Ch 12-A  –  Addendum to all Chapter 12 Standards for Calculation of Petroleum Quantities

Ch 14.10  –  Measurement of Flow to Flares

Ch 17.10.2 – Measurement of Refrigerated and Pressureized Cargo on Marine Tank Vessels – Part 2: Liquiefied Petroleum and Chemical Gases
API COPM - New Standards Under Publication 2008

Ch 4.9.4 – Determination of the Volume of Displacement and Tank Provers by the Gravimetric Method of Calibration

Chs 11.5.1, 2 and 3 - Physical Properties Data – Density/Weight/Volume Intraconversion, Parts 1, 2 and 3.

Ch 17.11 – Measurement and Sampling of Cargoes on Board Tank Vessels Using Closed/Restricted Equipment

Ch 17.12 – Bulk Liquid Chemical Cargo Inspection
API COPM - New Work Approved at October 2007 Meeting

Ch 12.2.5  Revise: Calculation of Petroleum Quantities Using Dynamic Measurement Methods and Volume Correction Factors

Ch 20.6  New Recommended Practice for Production Allocation Methodologies and Techniques

Ch 21.1  Revise: Electronic Gas Measurement

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COPM Special Projects
API COPM Special Projects

Ethanol/Gasoline Blend VCF Study

Study Purpose:

1. To measure temperature and volume changes incurred from blending denatured ethanols and gasolines.

2. To measure the density of various blends at specific temperatures and pressures.
API COPM SPECIAL PROJECTS

Ethanol/Gasoline Blend VCF Study Project Status

RFPs have been received from several labs and are being evaluated by the Chapter 11.3 TAG

Outcome: New Standards

Ch 11.3.3 Ethanol Density & VCF Tables
Ch 11.3.4 Gasoline/Ethanol Density & VCF Tables
API COPM Special Projects

Chapter 22 Auditing Criteria for Test Facilities

API Consultant is developing auditing and witnessing requirements based on ISO 9001:2000 and ISO 17025 for the auditing and witnessing of Laboratory Test Facilities. The study is using MPMS Chapter 22.2 Testing Protocol-Differential Pressure Flow Measurement Devices as an initial example for the study. However, API is hoping the study will extend to other measurement devices.
API COPM Re-Organization
Work In Progress

The COPM structure is being studied for re-organization. The current plan is to migrate COPM’s structure into two functions:

EQUIPMENT / TECHNOLOGIES

and

PROCESSES / INDUSTRY SEGMENT

ALL MPMS Standards would fall into one of the two categories. This plan will be further discussed at COPM in the Spring 2008.
API COPM Corporate Development

In accordance with API Mission and COPM’s purpose, to eliminate duplicative efforts, API has joint development arrangements and/or publishing agreements for specific measurement standards with the following organizations:

- ASTM International (ASTM D02.02 Joint with COMQ)
- The Energy Institute (EI, UK) – Phoenix Agreement
- Gas Processors Association (GPA)
- American Gas Association (AGA)
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COPM / ISO Relations
ISO Related Technical Committees

2. ISO Technical Committees develop standards related to COPM activities:

ISO/TC 28 - Petroleum products and lubricants

ISO/TC 193 - Natural Gas

ISO/TC 30 – Measurement of fluid flow in closed conduits
US TAG To ISO Committees

U.S. participation in the development and approval of ISO Standards is coordinated through US TAGs (Technical Advisory Groups)

U.S. TAG representatives are comprised of API committee members and others and API staff is the administrator on behalf of ANSI
API COPM

THANK YOU

Sally Goodson