API Recommended Practices 1170 & 1171

John Buflod

**Standards Development
American Petroleum Institute**

buflodj@api.org

API Standards Program

Mission: Provide a forum for development of <u>consensus-based industry standards</u>, and technical cooperation to improve the industry's safety performance and competitiveness.

- API publishes approximately 685 standards
- One third of these standards are referenced in U.S. (state and federal) regulations.
- Over 7000 active volunteers from 2000 organizations representing over 50 countries

API Standards Program

- **National Technology Transfer and Advancement Act (NTTAA) of 1995**: mandates that all federal agencies use technical standards developed by <u>voluntary consensus bodies</u>, as opposed to using government-unique standards.

- API is accredited as a standards developer by ANSI (American National Standards Institute).

- An ANSI-Accredited Standards Developer must demonstrate a "consistent record of successful voluntary standards development".
  - Transparent process
  - Openness, balance, consensus, due process

  i.e. consistent with ANSI's essential requirements:
  www.ansi.org/essentialrequirements

- Regular API standards program third party audits conducted by ANSI – API re-accredited by ANSI in June 2016

API Standards Program

Definition of Standard: broad term covering all API documents developed in accordance with ANSI's *Essential Requirements*.

- **Specifications**: Documents written to facilitate communications between purchasers, manufacturers and/or service providers.

- **Recommended Practices** (RPs): Documents that communicate recognized industry practices. RPs may include both mandatory and non-mandatory requirements.

- **Standards**: Documents that combine elements of both specifications and recommended practices.

API Standards Program

- **Due process**: API standards developed using ANSI-approved API Procedures for Standards Development

  www.api.org/products-and-services/standards

- **Developed by consensus**:

  - Consensus is established when substantial agreement is achieved

  - Substantial agreement means more than a simple majority but NOT necessarily unanimity

  - All views and objections considered and effort made toward their resolution

  - Defined as a majority of those eligible to vote shall have voted and approval by at least two-thirds of those voting, excluding abstentions

API Standards Committees

❖ **Openness**: participation on API standards committees

  – open to all parties (persons and organizations) that have a direct and material interest

  – API corporate membership is NOT a requirement

  – open attendance at standards meetings

  – standards consensus body ballots open for anyone to provide comments http://ballots.api.org/openBallots.aspx

❖ **Balance**: API strives for balanced representation of interest categories – in order achieve balance

  – efforts shall be made to contact organizations or individuals deemed appropriate for consensus body membership

  – targeted outreach conducted to under-represented interest categories

API Standards Committees

❖ **Outreach**:

- efforts to recruit materially affected and interested parties from diverse interest categories to become members of a balanced consensus body at the beginning of the standards development process and at appropriate points during it, should the need arise

- can take many forms, including, but not limited to:
  - specific website solicitations
  - webinars
  - meeting announcements with specific recruitment of identified interest categories sought
  - social media postings
  - targeted solicitations in meeting agendas and reports, trade press, publications, direct e-mails/mailings, press releases, articles, phone calls, and
  - soliciting recommendations from consensus body members

API Standards Development Process

❖ All standards balloting is done via the web through API's e-balloting tool http://ballots.api.org/openBallots.aspx

❖ One vote per company or organization on standards ballots

❖ Voting rights are determined by level of participation

❖ Observer (non-voting) membership available – mailing/reader list

❖ All comments (whether from the committee members or from the public) must be considered and the resolution documented

❖ API Standards must be revised, re-affirmed or withdrawn every 5 years

   ❖ Some key standards are updated more frequently

API Standards Information Online

- ❖ At the request of PHMSA and other stakeholders, API has made government-cited standards/RPs available online for public reference

- ❖ To access: government-cited standards/RPs available online as read-only on www.api.org/products-and-services/standards or http://publications.api.org/

- ❖ API also maintains a section of the site for standards that have been proposed for incorporation by reference - http://publications.api.org/IBR-Documents-Under-Consideration.aspx

Recommended Practices 1170 & 1171

- American Gas Association (AGA), the Interstate Natural Gas Association of America (INGAA), and their respective members were active and crucial participants to the development of both standards.

- Participants in the development process included federal and state regulators, engineering consultants and industry experts.

- Performance-based approach rather than prescriptive.

- These standards represent the best practices of the industry and therefore should be the foundation of any potential regulation.

API RP 1170

"Design and Operation of Solution-Mined Salt Caverns Use for Natural Gas Storage"

- Published July 2015.
- Provides the functional recommendations for salt cavern facilities used for natural gas storage service and covers facility geomechanical assessments, cavern well design & drilling, solution mining techniques & operations, including monitoring, and maintenance practices.

API RP 1171

"Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs"

- Published September 2015
- Applies to natural gas storage in depleted oil and gas reservoirs and aquifer reservoirs, and focuses on storage well, reservoir, and fluid management for functional integrity in design, construction, operation, monitoring, maintenance, and documentation practices. Recommends that operators manage integrity through monitoring, maintenance, and remediation practices and apply specific integrity assessments on a case-by-case basis.

Risk Management

❖ Risk is defined as the consequence of a realized threat multiplied by the likelihood of its occurrence.

- Operators shall develop, implement and document a risk management program.
- Program should include data collection, identification of potential threats and hazards to the storage operation.
- RP 1171 contains detailed tables that identify common threats and hazardous and preventative and mitigation measures.

Emergency Shutdown Valves

- Not required for most storage wells; however operators <u>shall</u> evaluate the need for any type of shutdown valve
- Must evaluate, among other factors:
  - Distance from dwellings and other buildings or areas where people assemble (playgrounds, campgrounds, recreational areas, etc.);
  - Distance from other wellheads and facilities;
  - Present and predicted development;
  - Gas composition, maximum flow potential.

Well Integrity

❖ Operators shall maintain functional integrity of storage wells and reservoirs

• Risk-based approach employed for developing the integrity demonstration, verification, and monitoring tasks and evaluating their frequency requirements.

• At least annual inspection for leaks and safety valve systems (function test).

• Shall also monitor presence of annual gas (measuring annular pressures) and tubular corrosion.

Questions?

John Buflod

Standards Development
American Petroleum Institute

buflodj@api.org