ANSI/API RP 3000

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API as a Standards Developing Organization (SDO)

• API publishes over 600 standards covering all industry segments

• API Standards are:
  – Core of Institute’s technical authority
  – Represent industry’s best practices and are used in worldwide operations
  – Voluntary

• API is accredited by the American National Standards Institute, ANSI
API Standards Process

• Standards process open to all parties with a direct and material interest

• Recommended Practice: communicates recognized industry practices and may include both mandatory and non-mandatory requirements

• WG had over 70 members, including:
  – Crude oil producers
  – Labs analyzing crude oil, lab testing equipment manufacturers
  – Railroad companies, rail tank car manufacturers and lessors
  – DOT/PHMSA and Transport Canada
  – Associations (COQA, DGAC, AFPM, CAPP)

• Also processed as an ANSI Standard
  – The draft was available for public review
RP 3000 Scope

- Hazardous Materials Regulations cover all hazardous materials, RP 3000 provides guidance specifically for crude oil
- For rail transportation only
- Includes loading, does not cover offloading of crude oil
- PHMSA encouraged to incorporate API RP 3000 by reference into new DOT regulations
- Consideration will be given to revisiting the standard if new DOT regulations contain different requirements
RP 3000

• What it does:
  – Classification
    • Identification of the physical and chemical properties of crude oil
    • Hydrogen sulfide risk and additional marking requirements
    • Corrosivity risk
    • Selection of Proper Shipping Name and UN ID Number
    • Documentation of Transportation Requirements
    • Sampling and Testing for Packing Group assignment
  – Quantity and Loading Requirements
    • Volume or Weight Loading Target Quantity (LTQ)
    • What to take into account for calculating LTQ
    • Sampling and Testing for calculating LTQ
    • Measurement Equipment and Processes
Classification

• To determine the proper hazardous material classification and the assignment of Packing Group (PG) for crude oil and the subsequent selection of the package
  – Crude oil shall be assigned the PG with the greatest level of potential danger, unless testing proves otherwise when
    • multiple crude oils having different PG are mixed together
    • a rail tank car is loaded from sources of different PG
  – Non-hazardous crude still needs periodic sampling and testing to ensure the non-hazardous classification remains valid
  – Safety Data Sheet may not provide sufficient information to be the sole source of information for PG assignment
Classification

• Testing for flash point – one test method is not recommended over another but comments are provided about applicability of each test method

• Testing for initial boiling point – test methods are listed in the HMR and alternatives must be approved by DOT
  – Alternative best practice for IBP included in API RP 3000: ASTM D7900 with some qualifiers
  – API approaching DOT for approval for this alternative practice
Classification

• Ongoing sampling and testing program for PG determination
  – Procedures must be in place to ensure no new crudes are introduced downstream of the sample point that could affect the package selection
  – Samples should be obtained as close as possible to rail loading point
  – Specific frequency for sampling and testing is NOT specified; instead factors are listed that should be considered by the offeror to determine frequency of sampling and testing
  – Samples shall be obtained using the closed container method as specified in API MPMS Chapter 8.1-2013/ASTM D4057-12 UNLESS it can be demonstrated closed container sampling not necessary
  – Sampling & testing program example given in Annex A
Quantity Measurement for Overfill Prevention

• Loading target quantity (LTQ) determined by calculations to ensure compliance with regulatory quantity requirements for weight & outage
  – Volume or weight can be used in establishing the LTQ; the more restrictive, lower quantity shall be used

• Since there are many measurement processes and scenarios unique to each facility, facility procedures shall be documented and utilized
  – Specific calculation procedures not included, ex. in Annex B
  – Items to be included in the calculations listed and guidance provided: temperature/density/VCF

• Does not cover offloading, although must take into account the heel, clingage and residue when calculating LTQ
Record Retention

• Document retention requirement of records, shipping papers etc.

• Shipping Paper
  – Shall include the date of acceptance by the originating carrier
  – Party that provides a shipping paper
    • Shall retain a copy or electronic image
    • Accessible at, or through the party’s principal place of business
    • Available upon request to an authorized official at reasonable times and locations

• Each Offeror shall retain the shipping paper(s) and documentation of quantity and quality, including results of sampling and testing for the classification of crude oil, for a minimum of 2 years after the crude oil is accepted by the originating carrier