API Report to CA PR 1410
Working Group #6

API RP 751 – Safe Operation of Hydrofluoric Acid Alkylation Units

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API
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- One of API’s foundational programs
  • First API standard published in 1924, now ~700 standards covering all industry segments

- Accredited and transparent process
  • API is accredited by ANSI and follows its criteria for openness, balance, consensus and due process

- Core of Institute’s Technical Authority
  • API standards are heavily referenced by both Federal and State regulators

- Basis for worldwide operations
  • API standards are the most widely cited by international regulators for oil and natural gas industry

– API Standards/RPs are voluntary; performance-based
  • Represent industry’s accepted engineering practices and are used in worldwide operations
Summary of terms used in API Standards:

a) shall—is used to indicate that a provision is mandatory – minimum requirement to conform to standard;

b) should—is used to indicate that a provision is recommended or advised but is not mandatory, to conform to the standard

c) may—is used to indicate that a provision is optional;

d) can—is used for statements of possibility or capability.
API’s Approved Procedures

– Note: In some cases, third parties or authorities having jurisdiction may choose to incorporate API standards by reference and may mandate compliance with all requirements and recommendations.

– All uses of the words “should and “shall”, therefore, must be based on sufficient information of the standard’s current and potential future use.
API RP 751 Overview

- Guidance document that communicates proven industry practices for safe operation of HF alkylation units

- Widely Reviewed and Balloted Consensus

- RP 751 considered RAGAGEP by regulators (e.g., OSHA)
  - RP 751 – 3rd Edition: “Should” - 587 instances & “Shall” - 12 instances

- Sections
  - Hazards Management
  - Operating Procedures and Worker Protection
  - Materials, New Construction, Inspection and Maintenance
  - Transportation and Inventory Control
  - Relief and Utility Systems
  - Risk Mitigation – Options and Techniques
Provides options that sites can use to safely manage their risk

Not a “one size fits all” approach – use the “tools” based on design & site specific considerations (i.e., performance-based approach)
  • Overly prescriptive requirements lead to inefficient use of risk management resources possibly leading to less safe conditions

HF detection systems provide timely information of leak
  • Informs decision-making regarding activation of mitigation systems and enactment of emergency procedures

Mitigation Systems
  • Active: water, rapid acid transfer, remotely-operated block valves
  • Passive: barriers, settler compartments, minimize HF inventory, duel seal or seal-less pumps, vapor suppression additives
  • Sites use combination of active & passive mitigation systems
New requirements that a mitigation system have these capabilities:

- continuous HF release detection;
- remotely-activated and remotely-controlled water mitigation;
- event duration management (15 minute action)

Quantitative assessment shall be performed

- Consequence-based: based on MCE for main acid handling equipment
- Risk-based: numerical values for consequences & frequencies of range of potential HF releases

Details of detection systems, water mitigation and rapid acid transfer in Annex H of RP 751