FUEL SYSTEM PLANNING, REPLACEMENTS & RELEASE

November 3, 2016

Frank Capic, P.E.
Associate Civil/Environmental Engineer
On our way to Chicago

I WILL STRIKE WHEN THE TIME IS RIGHT

LAST KNOWN CHICAGO CUBS WORLD SERIES PARADE

THE ONLY RING A CUBS FAN EVER SEES
FUEL SYSTEM PLANNING, REPLACEMENTS & RELEASE

November 3, 2016
Frank Capic, P.E.
Associate Civil/Environmental Engineer
Objectives

• Awareness of the 2015 CFR Updates
• Planning for Systems & Preparing for Operational Needs
• Replace? Or Continue Repairs & Upgrades?
• Releases
AWARENESS OF 2015 CODE OF FEDERAL REGULATIONS (CFR) UPDATES
2015 Regulation Changes vs. 1988

- Certain portions of the UST rules - 40 CFR 280
- Similar to key portions of Energy Policy Act of 2005
- New O&M requirements
- Addresses UST systems deferred in the 1988 regs
- Implementation dates by:
  - Oct. 13, 2015 (inception)
  - April 11, 2016
  - Oct. 13, 2018
2015 Regulation Changes vs. 1988

Includes:

- Operator Training
- Secondary Containment
- Operations & Maintenance (O&M)
- Past deferrals on 3 types
- Compatibility – biofuel blends
- Non-categorical changes
- Update Codes of practice & Editorial/Tech corrections
Operator Training – by Oct. 13, 2018

- Definitions for all 3 operator Classes:
  - Class A
  - Class B
  - Class C
- Owner or Operator (O/O) designate 1 individual for Class A and B operator classes
- Remaining individuals meet Class C operator
- O/O retain list designated operators trained
Secondary Containment & Interstitial Monitoring – by Apr. 11, 2016

• For new and replaced tanks and piping
• Replace entire piping run for 50% or more of piping is removed and other piping installed
• Under dispenser containment (UDC) for all new dispenser systems

“EPA Musts for USTs”
https://www.epa.gov/ust/musts-usts
Operations & Maintenance Added Requirements – by Oct. 13, 2018

- Walkthrough Inspections: of spill prevention equipment – every 30 days; of containment sumps & handheld release detection - annually
- Release detection equipment tests (and LLDs) annually

“EPA Musts for USTs”
https://www.epa.gov/ust/musts-usts
Operations & Maintenance Added Requirements – by Oct. 13, 2018

- Spill prevention equipment (i.e., spill bucket) test every 3 years for liquid tightness test or use double-walled spill bucket with interstitial monitoring\(^1\)
- Containment sumps - every 3 years liquid tightness test or use double-walled with interstitial monitoring\(^1\)
- Overfill prevention equipment inspection every 3 years\(^1\)

\(^1\) USTs installed after Oct. 15, 2015 required at installation

“EPA Musts for USTs”
https://www.epa.gov/ust/musts-usts
Removed Past Deferrals – by Oct. 13, 2018

Airport Hydrant Systems

Field Constructed Tanks

Emergency Generator Systems

“EPA Issues Stronger UST Requirements”
Removed Past Deferrals – by Oct. 13, 2018

• Airport Hydrant Systems & Field Constructed Tanks
  ▪ Notification & financial responsibility Oct. 13, 2018

HOWEVER:

▪ Release reporting & closure Oct. 15, 2015

“EPA Issues Stronger UST Requirements”
Removed Past Deferrals – by Oct. 13, 2018

- EPA reclassified or excludes
  - Wastewater treatment tank systems
  - Containing radioactive materials
  - At Nuclear Regulatory Commission (NRC) facilities
  - ASTs associated with airport hydrant or field constructed

- USTs must be compatible with fuel stored
- Notify no less than 30 days if switch to:
  - >10% ethanol or >20% biodiesel
  - Other biofuels substance – more information
Non-Categorical Changes – by Oct. 15, 2015

• Flow Restrictors/Ball Float Valves in vent lines eliminated for new systems
• Internal Lining – close tanks if lining fails inspection and no repair available
• Interstitial Monitoring Results – Per 280.50 & 280.52
• Repairs- definition revised; test within 30 days post-repair
• Vapor & Groundwater Monitoring Allowed – record site assessments (before Oct. 13, 2018)
Updates Codes & Tech Corrections
– by Oct. 15, 2015

• Various code references updated or removed in 40 Part 280
• Technical corrections and new guidance and interpretations since original code developed in 1988
EPA Grant State Program Approval (SPA) – by Oct. 13, 2018

- Under 1988 regs, 38 states enacted statutes and state agencies developed regulations to obtain SPA to operate in lieu of federal program
EPA Grant State Program Approval (SPA) – by Oct. 13, 2018

“State Underground Storage Tank (UST) Programs”
https://www.epa.gov/ust/state-underground-storage-tank-ust-programs
EPA Grant State Program Approval (SPA) – by Oct. 13, 2018

- 2015 regs includes SPA updates in 40 CFR 281
- 38 states have until Oct 13, 2018 to re-apply
- Remaining 16 non-SPA states apply anytime
- What are benefits of SPAs?
OPERATIONAL NEEDS FOR EXISTING SYSTEMS
What does this mean for my system?

- Maintain Operator Training
- Maintain Operations & Maintenance needs
- Upgrade if needed Secondary Containment & Interstitial Monitoring
- Alarm Reporting for Interstitial Monitoring
- If internal lining fails and no cathodic protection (pre-1988 tanks) – if lining cannot be repaired, get tank closed
- Testing required following repairs (whether release is or is not reported)
PLANNING OPTIONS FOR NEW & EXISTING SYSTEMS
Planning Options for Fuel Systems

• Complete an Evaluation & Assessment of Your Fueling Needs
• Who are end users?
• Pros vs. Cons
  ▪ Pros:
    – Eliminate 3rd party distribution station
    – Control volume
    – Travel time to 3rd party distribution station
  ▪ Cons:
    – Costs to Manage/Maintain system
    – Notification requirements
    – Self-insured or need to obtain insurance to cover?
Planning Options for Fuel Systems

• Existing systems – how prioritize each one?
• Develop desktop matrix to evaluate which systems prioritize if multiple, consider:
  ▪ Size of facility
  ▪ Fuel Capacity
  ▪ Throughput/Usage
  ▪ Quantity/Type of USTs
  ▪ Repair costs
  ▪ Environmental Exposure/Liabilities
REPAIR/UPDATE VS. REPLACE existing fuel systems
Repair vs. Replace?

• Based on site assessment results
• Determine rough order of magnitude costs or obtain quotes on repairs
• 2015 UST rules towards regulatory impacts such as UDCs, or internal linings, testing after repairs. May impact question?
Repair vs. Replace?

• If replacement option, be prepared for:
  ▪ Develop design for new system to meet 2015 regs
  ▪ Pre-design tasks:
    – Geotechnical and environmental soil investigations
    – Survey – utilities and surface elevations
    – Asbestos and LBP assessments/abatement
  ▪ Closure of Tanks Prior to New Tank Installations
    – Temporary vs. Permanent vs. Abandoned-in-Place
MANAGING RELEASES
Managing Releases... Entire Context

- As of March 2016 USEPA estimates:
  - 562,751 active USTs (at approximately 202,000 sites) regulated by EPA’s UST program
  - Since 1984 program inception = 1,832,148 USTs have been properly closed
Managing Releases... Entire Context

- As of March 2016 USEPA estimates:
  - +529,000 release incidents & +457,000 cleanups completed since 1984 program inception

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Confirmed Releases Each Year</th>
<th>Cumulative</th>
<th>Cleanups Remaining</th>
<th>Percent Of Confirmed Releases Pending Cleanup Completion*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid 2016</td>
<td>2,591</td>
<td>529,390</td>
<td>72,046</td>
<td>13.6%</td>
</tr>
<tr>
<td>2015</td>
<td>6,830</td>
<td>528,521</td>
<td>71,186</td>
<td>13.6%</td>
</tr>
<tr>
<td>2014</td>
<td>6,847</td>
<td>521,271</td>
<td>73,948</td>
<td>14.2%</td>
</tr>
<tr>
<td>2013</td>
<td>6,128</td>
<td>514,123</td>
<td>77,717</td>
<td>15.1%</td>
</tr>
<tr>
<td>2012</td>
<td>5,674</td>
<td>507,540</td>
<td>82,903</td>
<td>16.3%</td>
</tr>
<tr>
<td>2011</td>
<td>5,998</td>
<td>501,723</td>
<td>87,983</td>
<td>17.5%</td>
</tr>
<tr>
<td>2010</td>
<td>6,328</td>
<td>494,997</td>
<td>93,123</td>
<td>18.8%</td>
</tr>
<tr>
<td>↓</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>2005</td>
<td>7,421</td>
<td>452,041</td>
<td>119,242</td>
<td>26.4%</td>
</tr>
</tbody>
</table>

*Divide cleanups remaining by cumulative confirmed releases
Managing Releases... If release occurs

- Maintain records demonstrating financial responsibility
  - To pay for any clean-up required
  - To correct for any environmental damages
  - Compensate 3rd parties for injuries to properties/persons
Managing Releases... If release occurs

- Release Response/Corrective Action measures
- Correspondence with State LUST agencies
- Eligibility for reimbursement from state Trust Fund programs for cleanup costs
Conclusions

- Awareness of the 2015 CFR Updates to Fuel Systems
  - Relevance to your systems
  - Regulatory viewpoints
- Planning for Systems & Preparing for Operational Needs
  - Desktop evaluations
  - Site assessments
- Replace or continue repairs and upgrades? - Pros vs. Cons
- Managing releases:
  - Financial responsibility identify
  - Proactive cleanup
QUESTIONS?

Frank Capic, P.E.
Associate Civil/Environmental Engineer

1431 Opus Place, Suite 400
Downers Grove, IL 60515
Direct: 630-724-3242
Cell: 630-669-9857
CREATE AMAZING.