Underground Natural Gas Storage

Southern Gas Association
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USDOT / PHMSA

“To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives.”
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General Statistics

- 128 Operators
- 4800 BCF Working Capacity
- ~390 Storage Fields, Split Inter/Intra
- 85% Reservoir-Aquifer, 15% Salt Domes
- 17000 Wells
- Tally based on EIA Information
- First Annual Reports were due March 15, 2018

- ~12% increase in PHMSA inspection burden
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Pipes Act of 2016

• Protecting our Infrastructure of Pipelines and Enhancing Safety, Section 12
• Establish regulations and inspection program for Underground Natural Gas Storage
• Develop inspection criteria and related training for both federal and state inspectors
• Interagency Task Force
  • Well Integrity, Public Health, Energy Supply

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Interim Final Rule

• Docket No. PHMSA-2016-0016
• Published December 19, 2016
• Effective January 18, 2017
• General Compliance January 18, 2018
## States Statistics

- UGS facilities in 31 States
  - 25 with intrastate assets
  - 6 with only interstate assets

### Top 10 States

<table>
<thead>
<tr>
<th>Number of Storage Facilities</th>
<th>Combined Working Gas Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pennsylvania</td>
<td>1. Michigan</td>
</tr>
<tr>
<td>2. Michigan</td>
<td>2. Texas</td>
</tr>
<tr>
<td>3. Texas</td>
<td>3. Louisiana</td>
</tr>
<tr>
<td>5. West Virginia</td>
<td>5. California</td>
</tr>
<tr>
<td>7. Kentucky</td>
<td>7. West Virginia</td>
</tr>
<tr>
<td>8. Ohio</td>
<td>8. Ohio</td>
</tr>
<tr>
<td>9. Indiana</td>
<td>9. Mississippi</td>
</tr>
<tr>
<td>10. Louisiana</td>
<td>10. Montana</td>
</tr>
</tbody>
</table>
States Participation

- State Regulators mostly not the agencies responsible for topside pipelines
- Similar, but separate Program, for State Partners
- States in initial 2018 Partnering Program
  - Certification: AR, MN, PA
  - Agreement: CA, IL, KS
- Other states expected to join

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UGS Inspection Program, Initial Conditions

- ~390 facilities requiring inspection
- 6 States participating in 2018, with ~62 intrastate facilities
- More states may participate in future years
- ~330 facilities currently within federal inspection responsibility
- Nationalized Team inspections, no region boundaries
- States invited to observe PHMSA inspections
- Initial inspection of all facilities within 5 years

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Number of Facilities by PHMSA Region Based on PHMSA and State Partners in 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>Interstate Facilities</th>
<th>Intrastate Facilities</th>
<th>Total</th>
<th>Intrastate Facilities</th>
<th>Agent States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>114</td>
<td>0</td>
<td>114</td>
<td>10</td>
<td>PA</td>
</tr>
<tr>
<td>Central</td>
<td>49</td>
<td>44</td>
<td>93</td>
<td>29</td>
<td>KS, IL, MN</td>
</tr>
<tr>
<td>Southwest</td>
<td>22</td>
<td>36</td>
<td>58</td>
<td>9</td>
<td>AR</td>
</tr>
<tr>
<td>Western</td>
<td>19</td>
<td>12</td>
<td>31</td>
<td>14</td>
<td>CA</td>
</tr>
<tr>
<td>Southern</td>
<td>17</td>
<td>16</td>
<td>33</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>221</td>
<td>108</td>
<td>329</td>
<td>62</td>
<td></td>
</tr>
</tbody>
</table>

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Initial Regulatory Inspections

• Initial inspections by PHMSA or States
• Based on Interim Final Rule, less Stay of Enfr.
• Focus on written procedures and implementation plans
• General Compliance Date : January 18, 2018
• Inspections started in March-2018
Inspection Questions

• Shared with operator prior to start of inspection
• To be generally published in August
• An inspection:
  • Would include those questions appropriate for the type and characteristics of the specific facility
  • May be specialized, focusing on only certain topical areas

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Operators demonstrate compliance through inspections

- Question set will guide inspection thoroughness in each topical area
- Inspections will be a blend of traditional OM&E and framework of integrity programs
- More detailed IM inspection content is forthcoming
- Discussion between Inspectors and Operator personnel is expected, but those discussions need to be supported by procedures, documented analysis and records
- Some time will be spent on field observations
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Wide variability of operating practices in the storage industry

- Regulations are objectives to be achieved by the Operator through programs, procedures, records
- These regulations are generally performance-based requirements
- Operators are expected to personalize their programs to site-specific equipment, history, operating and environmental conditions
Risk Analysis & Assessments

• Account for a realistic assortment of factors
• Defensible choice of risk factors
• Unknown or missing information raises risk
• Scope of risks broader than facility history
• Observable field conditions do not contradict
• Preserve the importance of consequences
Frequently Asked Questions

- Clarify, explain, and promote better understanding
- Often tied to a specific application as an example
- Help the public understand how to comply

- If an operator’s practice is aligned with the FAQ, then compliance is likely attained
- If an opposing course of action is taken, the operator could expect questions during an inspection

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Final Rule in Development

• Take broad assortment of comments into consideration
• Will account for the final disposition of non-mandatory aspects of the RPs
• Interim Final Rule in play until the content and effective date of the Final Rule are issued
What’s next for the remainder 2018 and 2019?

2018
- Transition from Word Inspection Form to Inspection Assistant
- Compliance Cases begin, and are posted
- Inspector Training
- State Tag-Alongs

2019
- Integrity Management requirements kick in
- Final Rule
- Revised FAQs
- Revised Inspection Questions with IMP Content
- Sustained TQ classes
- Public Workshop & start of Annual UGS Conference
PHMSA : Web Links

  - Operator Notifications
  - Event Reporting
  - Major Incidents
  - Key Documents
  - FAQs
  - Locations Map
Contact Information

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