

There are currently ten unsolicited research and development topics and gaps from the meetings held on November 30 - December 2, 2021, and February 19 - 20, 2020. Please review the unsolicited topics as well as the Working Group notes from the meetings (links to these files are provided), as PHMSA will discuss and review these at the December 13-15, 2022, meeting.

2020 and 2021 Working Group Forum Report-Outs
Unsolicited Research and Development Gaps and Topics

February 19-20, 2020 Pipeline R&D Forum

- 1. Threat Prevention: Improve Geohazard Monitoring and Data Integration** ([see Working Group #2: Preventing & Mitigating Geo-Forces on Pipelines and Facilities](#))

Primary Objective:

To develop or improve geohazard monitoring solutions and data acquisition so operators can identify any geohazard threat that is occurring or that has occurred and determine how/when to intervene before there is a pipe failure.

- 2. Underground Natural Gas Storage (UNGS): Improve the Performance of Wellhead Seals: Design and Monitoring** ([see Working Group #4: Underground Gas Storage Facilities](#))

Primary Objective:

To improve the monitoring methodology for an energized wellhead seal and to adapt the wellhead design to remove false indications of annular leaks.

- 3. UNGS: Incorporating Fiber Optics into Wellbore Design and Monitoring** ([see Working Group #4: Underground Gas Storage Facilities](#))

Primary Objective:

To develop an alternative method to mechanical testing and inspection logging using fiber optics without creating a leak path. Validate that fiber optics can monitor the wellbore for potential leaks via temperature, strain, and acoustic profiles.

4. **UNGS: Investigating Cement and Other Materials as a Barrier in UNGS Wells** ([see Working Group #4: Underground Gas Storage Facilities](#))

Primary Objective:

To develop technology solutions that can test cement and/or other materials and validate the system integrity, including if cement and production casing can be used in combination as a single barrier system.

5. **UNGS: Improving Cathodic Protection (CP) as Applied to Well Tubulars** ([see Working Group #4: Underground Gas Storage Facilities](#))

Primary Objective:

To assess the effectiveness of technology used to monitor CP on underground gas storage well tubulars, specifically surface casing; evaluate the overall effectiveness of CP throughout the entire length of production casing and; determine if the CP reaches the desired casing strings.

November 30-December 2, 2021 Pipeline Transportation: Hydrogen and Emerging Fuels R&D Public Meeting and Forum

6. **Anomaly Detection: Develop In-Line Inspection (ILI) Sensors and Tools to Accurately Detect and Size Integrity Threats in Hydrogen Distribution Pipelines** ([see working group #3: Utilization of Inspection Tools on Hydrogen Pipelines](#))

Primary Objective:

To review the effectiveness of current ILI technology to accurately detect and size anomalies caused or changed by hydrogen service and to develop ILI tools to operate in gas distribution pipe systems.

7. **Anomaly Characterization: Investigate Damage Mechanisms to Determine Inspection Intervals for In-Line Inspection (ILI) Tools** ([see working group #3: Utilization of Inspection Tools on Hydrogen Pipelines](#))

Primary Objective:

To determine the level of degradation of an in-service pipeline after an ILI inspection and determine the time to failure based on analysis of the characteristics of the features.

8. Climate Change: Investigate the Recompression of Compressor Station Operations to Capture and or Incinerate Fugitive Methane Emissions ([see working group #5: Methane Mitigation – Construction and Operations](#))

Primary Objective:

Develop new solutions that decrease the time to achieve such action and prevent emissions with the possibility of re-using the captured emission.

9. Hazardous Liquid Tanks: Standardize the Application of Vapor Corrosion Inhibitors (VCIs) ([see working group #6: Breakout Tanks – Methods to Prevent Corrosion of Tank Bottoms](#))

Primary Objective:

To develop standardized methods to qualify VCIs as alternatives to failed/failing cathodic protection systems for tank bottom application through industry verification/validation of researched data.

10. Hazardous Liquid Tanks: Investigate Tank Foundation/Pad Designs to Improve Corrosion Control ([see working group #6: Breakout Tanks – Methods to Prevent Corrosion of Tank Bottoms](#))

Primary Objective:

To evaluate various foundation/pad designs and determine opportunities for improving corrosion control.