Working Group Subject Backgrounds

Each Working Group should anticipate presentation and discussion within the subject areas shown and their impact on all relevant pipeline commodity & material types during the forum.

1. **Threat/Damage Prevention -** This group will discuss measures in preventing threats such as corrosion in its various forms and excavation damage/pipeline locating/Right Of Way monitoring/protecting or adapting pipelines to the potential impacts of climate change.

2. **Leak Detection/Mitigation -** This group will discuss line break sensors and their components and leak detection technology development from any deployment platform/understanding capabilities and limitations. Discussions around pipeline sensing/line break detection systems to minimize unintended valve closures are also anticipated. It is also anticipated that a heavy focus will be placed on solutions for hazardous liquid pipelines.

3. **Anomaly Detection/Characterization -** This group will discuss solutions for inside or outside (through coating) the pipe technology to better detect, size and shape anomalies/burst testing to improve remaining strength calculations/hard to inspect pipelines (i.e. unpiggable)/technology development in support of the implementation of ongoing PHMSA rulemakings. Detection and characterization of defects on or near girth welds will be another focus. This group will also provide a focus to non-line pipe facilities for pump/compressor stations and tank farms.

4. **Natural Gas Underground Storage -** This group will discuss a wide range of challenges for gas underground storage facilities. They include anything from well design – casing, tubing, wellheads, and safety valves to well integrity and inspection to assessing operations and maintenance programs to safety device testing – flow through tubing, casing or both – threat identification, risk assessment, preventative & mitigative measures, and remediation measures - location/frequency/valve life expectancy and mechanical integrity testing – type (pressure test, logging, or other), frequency, and remediation measures to odorant programs and down hole and facility leak detection to security – well, facility, and other and issues for emergency response and preparedness.

5. **Liquefied Natural Gas -** This group will discuss various challenges for liquefied natural gas (LNG) facilities. Such challenges my include failure of and accounting for LNG components, including life expectancy, over pressuring, explosions, cascading effects, and intentional acts - Fires and explosions, including flash fires, fireballs, pool fires, jet fires, deflagrations, and detonations - Vapor dispersions of propane, ethylene, ethane, nitrogen, carbon dioxide, and ammonia - Accounting for natural hazards, including seismic, wind, storm surge, and snow, with design requirements - Identifying knowledge gaps in 49 CFR Part 193/National Fire Protection Association 59A for process safety program elements - Determining risk profiles at large marine export facilities due to vapor fences.