



Liquefied Natural Gas Research and Development Public Meeting and Forum

Working Group #2 – LNG Facility Siting

November 15, 2022



U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

PHMSA: Your Safety is Our Mission



Good Afternoon & Welcome!

- **PHMSA Leader:** Thach Nguyen, PHMSA Engineering and Research Division
- **Industry Co-Leader:** Drew Botwinick, Gexcon US
- **Industry Co-Leader:** Jake Piekarz, Blue Engineering
- Thank you for choosing this Working Group
- We have an important charge for you:
 - Listening/Learning
 - Assist in developing PHMSA's future research agenda
- All presentations posted and available after the forum.



Working Group Objective

Learn about technical challenges, known research investment and success to date within the Working Group subject matter and to identify non-duplicative/complementary technical gaps for future PHMSA research funding.



Agenda at a Glance

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Agenda at a Glance – Day 1

| Time | Agenda Item | Role |
|---------|--|--------------------------|
| 1:00 PM | Introduction to Working Group | Working Group Leadership |
| | Facility Challenges & Research Funding Organization Presentations | Various Presenters |
| | Question and Answer Session | All |
| | Research Gap Brainstorming Introduction | PHMSA Support Contractor |
| | Research Gap Brainstorming Session | All |
| | Break* | |
| | Research GAP Review/Consolidation | All |
| 4:00 PM | Day 1 Closeout/Adjourn | Working Group Leadership |

*Break taken as needed.



Agenda at a Glance – Day 2

| Time | Agenda Item | Role |
|----------|--|--------------------------|
| 10:00 AM | Review of Consolidated Research Gaps | Working Group Leadership |
| | Research Gap Prioritization Introduction | PHMSA Support Contractor |
| | Research Gap Prioritization Round 1 & 2 | All |
| 12:00 PM | Lunch | |
| | Research Gap Roadmapping* | All |
| 4:00 PM | Day 2 Closeout/Adjourn | Working Group Leadership |

NOTE: Remember to use the MS Teams meeting link for Day 2 – See provided agenda

NOTE: A summary report containing the roadmapped gaps will be posted 1 week after the forum.

*Afternoon break taken as needed.



PHMSA Funded Research

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Working Group #2 Relevant R&D (\$2.2 M)

| Prj # | Project ID and Title | Status | Contractor | Funding |
|------------------------|---|--------|---------------------------------------|-----------|
| 1. 150 | Modeling and Assessing a Spectrum of Accidental Fires and Risks in a LNG Facility | Closed | Technology & Management Systems, Inc. | \$213,030 |
| 2. 640 | Comparison of Exclusion Zone Calculations and Vapor Dispersion Modeling Tools | Closed | CH-IV International | \$217,810 |
| 3. 642 | Statistical Review and Gap Analysis of LNG Failure Rate Table | Closed | Gas Technology Institute | \$418,058 |
| 4. 731 | Consistency Review of Methodologies for Quantitative Risk Assessment | Closed | Gas Technology Institute | \$858,587 |
| 5. 847 | Evaluation of the Efficacy and Treatment of Hazard Mitigation Measures for LNG Facilities | Closed | Gas Technology Institute | \$319,707 |
| 6. 922 | Vapor Cloud Explosion at Nil Wind | Closed | Blue Engineering and Consulting | \$134,704 |

Research Project Pages found via: <https://primis.phmsa.dot.gov/matrix/>



Working Group #2 Relevant R&D (\$1.7 M)

| Prj # | Project ID and Title | Status | Contractor | Funding |
|------------------------|--|----------------------|---------------------------------|-------------|
| 1. 854 | Develop an Evaluation Protocol for Non-LNG Release Hazards - Modeling | Active to 12/31/2023 | Blue Engineering and Consulting | \$485,344 |
| 2. 923 | Development of Guidance on Potential Cascading Effects from Flammable Vapor Cloud Explosions | Active | DNV GL USA, Inc | \$1,231,520 |

Research Project Pages found via: <https://primis.phmsa.dot.gov/matrix/>



Research Knowledge Transfer

- Project results utilized for:
 - Policy and rulemaking development
 - Revision of consensus standards such as with the National Fire Protection Association



PHMSA Compliance Review



Siting and Design Compliance

- Subpart B - Siting
 - Issued 25 letters of determination under MOU with FERC
 - Assist state partners with 3 LNG projects
- Subparts C and E - Design and Equipment
 - Completed 1 design compliance review
 - Closing out 3 compliance review
 - Reviewing 8 projects under construction



Thank You!

Program Contacts

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