

1ST QUARTERLY REPORT – PUBLIC
GTI PROJECT NUMBER 21873

**Project Title: Statistical Review and Gap
Analysis of LNG Failure Rate Table**

Contract Number: DTPH56-15-T-00008

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For Quarterly Period Ending: December 31, 2015

Prepared for:

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Technical Status and Milestones Completed this Quarterly Period

The following work was performed during this quarterly period.

Task 1. Form and Incorporate Initial Input from Technical Advisory Panel (TAP) – GTI commenced and completed this task during this quarter, as summarized by these accomplishments:

- Established Project Kick-Off Meeting Date on Nov. 4, and drafted Discussion Materials for Meeting.
- Contacted TAP members identified in proposal, and invited them to Kick-Off Meeting.
- Assisted PHMSA in coordinating additional participants from FERC and PHMSA's consultants in Project Kick-Off Meeting.
- Conducted Project Kick-Off Meeting on Nov. 4, 2015, including participants from PHMSA, FERC, TAP, GTI and subcontractor CH-IV International Inc.
- Prepared Minutes of Project Kick-Off Meeting and issued them on Nov. 23, 2015.
- Prepared Summary of Initial Input from TAP and issued on Dec. 31, 2015. Action items from this include considering and pursuing additional participants to expand the TAP for future input.

Task 2. Review Literature and Data and Prepare Preliminary Bibliography – GTI commenced Task 2 during this quarter, as summarized by these accomplishments:

- Reviewed existing equipment failure rate data at GTI relevant to this effort, and began procuring additional data and developing Bibliography. To date GTI has identified and collected more than 25 relevant technical resources such as books, reports, and data compilations.
- Ordered, obtained and began reviewing in detail: OREDA 2015 Vol. 1 Topside Failure Rate data; Lee's Loss Prevention 2012; AIChE Process Eqpt. Reliability Data 1989.
- Accessed and downloaded the UK HSE Hydrocarbon Release Database Systems data.
- Sought additional failure rate data resources.
- Began developing the Preliminary Bibliography.

Task 3. Develop Preliminary Framework Layout and Component Protocols – GTI commenced Task 3 during this quarter, as summarized by these accomplishments:

- Assembled the UK HSE Hydrocarbon Release Database Systems data into a consolidated spreadsheet, and began a more detailed analysis of existing failure rate data in order begin developing the preliminary framework layout and component protocols.
- Re-contacted FERC's representative to see if FERC's existing spreadsheet database of equipment failure rate data, and other failure rate records, were available.

Task 9. Program Management – GTI commenced Task 9 during this quarter, as summarized by these accomplishments:

- Prepared and submitted Monthly Reports, this Quarterly Report, and above-referenced

reports.

- Established subcontract with CH-IV International Inc.
- Communicated with DOT/PHMSA's AOR and performed other Project Management activities

The payable milestones completed during this quarter were:

1. Minutes of project kick-off meeting. Due to DOT within two (2) month of the effective date of the Agreement. Completed on Nov. 23, 2015.
2. Summary of Initial Input from TAP. Due to DOT within three (3) months of the effective date of the Agreement. Completed on Dec. 31, 2015.
3. Quarterly Report #1. Due to DOT within three (3) months of the effective date of the Agreement. Completed on Dec. 31, 2015.

Results and Conclusions

The project is progressing as scheduled, and excellent input was provided by participants in the TAP from government and industry. The project is at an early stage and no findings, discoveries conclusions or other summarizing information has yet been developed.

Plans for Future Activity

Planned activities for the next quarter include:

- Continue Task 2 - Review Literature and Data, and prepare and submit Preliminary Bibliography
- Continue and finish Task 3 - Develop Preliminary Framework Layout and Protocols
- Begin and finish Task 4 - Contact Additional SMEs beyond TAP
- Pursue additional members to join TAP based on the current TAP's Initial Input
- Submit monthly reports and quarterly report

End of Quarterly Report
