

	<b>Develop a Risk-Based Approach and Criteria for Hazard Detection Layout</b>	03902-QRI-005
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# Develop a Risk-Based Approach and Criteria for Hazard Detection Layout

Agreement #693JK31910008POTA

Quarterly Status Report – Q5

Public

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## 1 Items Completed During this Quarterly Period

The performance period for the research project “Develop a Risk-Based Approach and Criteria for Hazard Detection Layout” (Project) is September 30, 2019 through June 30, 2021. The current quarter closes on September 30, 2020. The PHMSA Agreement Officer’s Representative (AOR) for this project is Mr. Robert Smith and the Technical Task Inspector (TTI) is Ms. Chau Tran.

Table 1-1 shows the items and deliverables that were completed during this Quarter.

Table 1-1. Items Completed During This Quarterly Period

Item	Task	Deliverable	Quarter
10	6	Case Study 1 – Generic LNG Facility	5
11	8	Quarterly Status Report and Project Management	5
18	8	Peer Review #1 – Virtually Administered	5

## 2 Items Not Completed During this Quarterly Period

There were no items or deliverables scheduled to be completed during this Quarter that were not completed.

### 3 Project Financial Tracking During this Quarterly Period

The current project financial tracking is shown in Figure 3-1. Work for the project is currently on schedule and projected to remain on schedule.

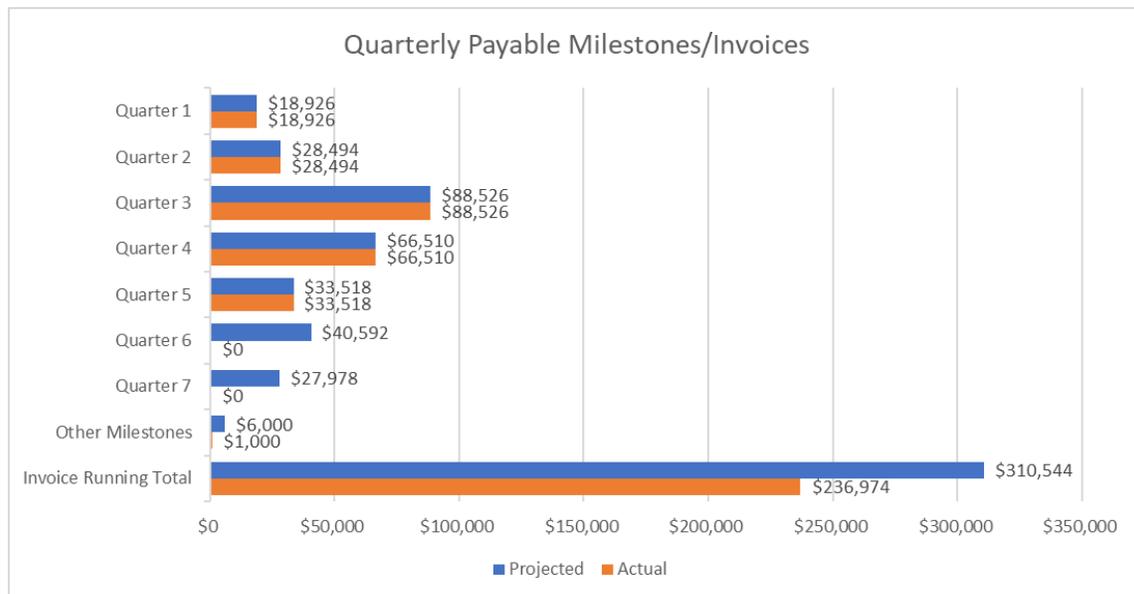


Figure 3-1: Project Financial Tracking

## 4 Project Technical Status

### 4.1 Task 6 – Case Study 1

Previous tasks completed under this research project have established risk-based performance targets for fire and gas detection systems at LNG facilities and identified which hazard scenarios should be used to evaluate detector layouts. The Task 6 report (03902-RP-004) demonstrates the proposed performance-based approach for establishing and achieving detector performance targets on a generic LNG facility with two liquefaction trains, a full containment LNG storage tank, vaporization and sendout areas, truck operations, and refrigerant storage.

### 4.2 Task 6b – Case Study 2

This research project includes a second case study to be performed on a smaller scale facility. During this quarter, BLUE developed the facility plot plan, process flow diagrams and heat and material balances for a peakshaver facility using a nitrogen-based liquefaction process. In the next quarter, BLUE will demonstrate the performance-based approach for establishing and achieving detector performance targets for this facility.

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### 4.3 Task 8 – Project Management

The annual peer review for this project was conducted on October 14, 2020. All project reports due this quarter are complete and formally submitted on December 30, 2020. The next project TAP meeting will be held in the first quarter of 2021.

BLUE submitted an abstract for this research project to the AIChE 2021 Spring Meeting and 17<sup>th</sup> Global Congress on Process Safety. The abstract was accepted for the GCPS LNG Safety Session. The conference will be held virtually the week of April 19-23, 2021. Participation in this conference will satisfy the public presentation requirement for this project.

## 5 Project Schedule

The project team's efforts to advance the project schedule are summarized below:

- The project is on schedule;
- The overall schedule shown in Figure 5-1 remains on track and no changes to the completion date are required;
- The project team remains highly engaged and stable (with no changes in personnel).

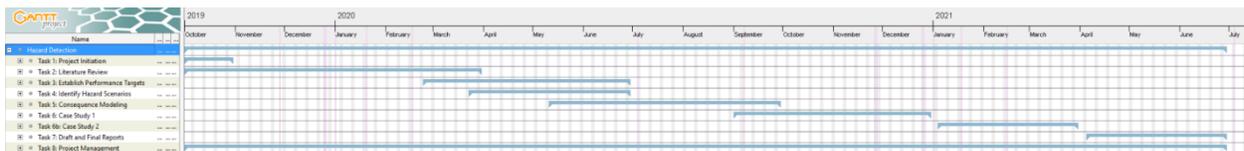


Figure 5-1: Project Schedule

## 6 Status Report Summary

Two payable milestones were completed in the current quarter:

- 1) Case Study 1 – Generic LNG Facility
- 2) Quarterly status report

Work for the project is currently on schedule and projected to remain on schedule.