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Validation of Passive Mitigation Systems for Fires

Agreement #693JK32310002POTA

Quarterly Status Report – Q1

Public


December 22, 2023

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1 General

The performance period for the research project "Validation of Passive Mitigation Systems for Fires" (Project) is 24 months, from October 1, 2023 through September 30, 2025 as outlined in PHMSA Agreement #693JK32310002POTA (Agreement). The current quarter closes on December 31, 2023. The PHMSA Agreement Officer's Representative (AOR) for this project is Ms. Andrea Ceartin and the Technical Task Inspectors (TTIs) are Ms. Kathleen Roth and Ms. Yasmin Alamin.

2 Items Completed During this Quarterly Period

Table 2-1 shows the project tasks and deliverables; the items in green were completed during this quarter. The items in yellow are in progress and items in blue (light and dark) are future tasks.


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Table 2-1. Project Tasks and Deliverables

Item No.	Task No.	Activity	Deliverable	Due Quarter No.	Completion
1	1	Project Initiation: Conduct kick-off TAP meeting and finalize project scope; summarize in a PowerPoint	Submit PowerPoint from Kick-Off meeting	1	100%
2	8	1st Quarterly Status Report	Submit 1st quarterly report	1	100%
3	2	Conduct literature review of passive fire mitigation methods (PFM) and summarize findings in a report	Submit report with findings from literature search	2	15%
4	8	2nd Quarterly Status Report	Submit 2nd quarterly report	2	0%
5	6	Define failure criteria for structural steel and for pressure vessels and summarize in a report	Submit report with definition and justification of failure criteria	3	0%
6	8	3rd Quarterly Status Report	Submit 3rd quarterly report	3	0%
7	3	Conduct experimental testing of selected PFM methods and summarize results in a PowerPoint presentation	Submit PowerPoint with summary of experimental test series and results	4	0%
8	8	4th Quarterly Status Report	Submit 4th quarterly report	4	0%
9	4	Define modeling techniques for the selected PFM methods; summarize findings in a report	Report on PFM modeling methods	5	0%
10	8	5th Quarterly Status Report	Submit 5th quarterly report	5	0%
11	8	6th Quarterly Status Report	Submit 6th quarterly report	6	0%
12	5	Validate PFM models against experimental data and summarize findings in a report	Report on PFM model testing results	7	0%
13	8	7th Quarterly Status Report	Submit 7th quarterly report	7	0%
14	7	Prepare and Submit Draft Final Report	Submit draft final report	8	0%
15	8	8th Quarterly Status Report	Submit 8th quarterly report	8	0%
16	N/A	Prepare & Present Paper at public event or publish paper in journal/magazine	Prepare & Present Paper at public event or publish paper in journal/magazine	N/A	0%
17	N/A	Final Virtually Held Info Dissemination Meeting	Final Virtually Held Info Dissemination Meeting	N/A	0%
18	7	Address Comments and Submit Final Report (also Public Version)	Submit final report	N/A	0%

3 Items Not Completed During this Quarterly Period

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

4 Project Financial Tracking During this Quarterly Period

The contract for this research project is fixed-price. The total federal payment due for work completed in Quarter 1 is \$57,780. The current project financial tracking is shown in Figure 4-1. Work for the project is currently on schedule and projected to remain on schedule.

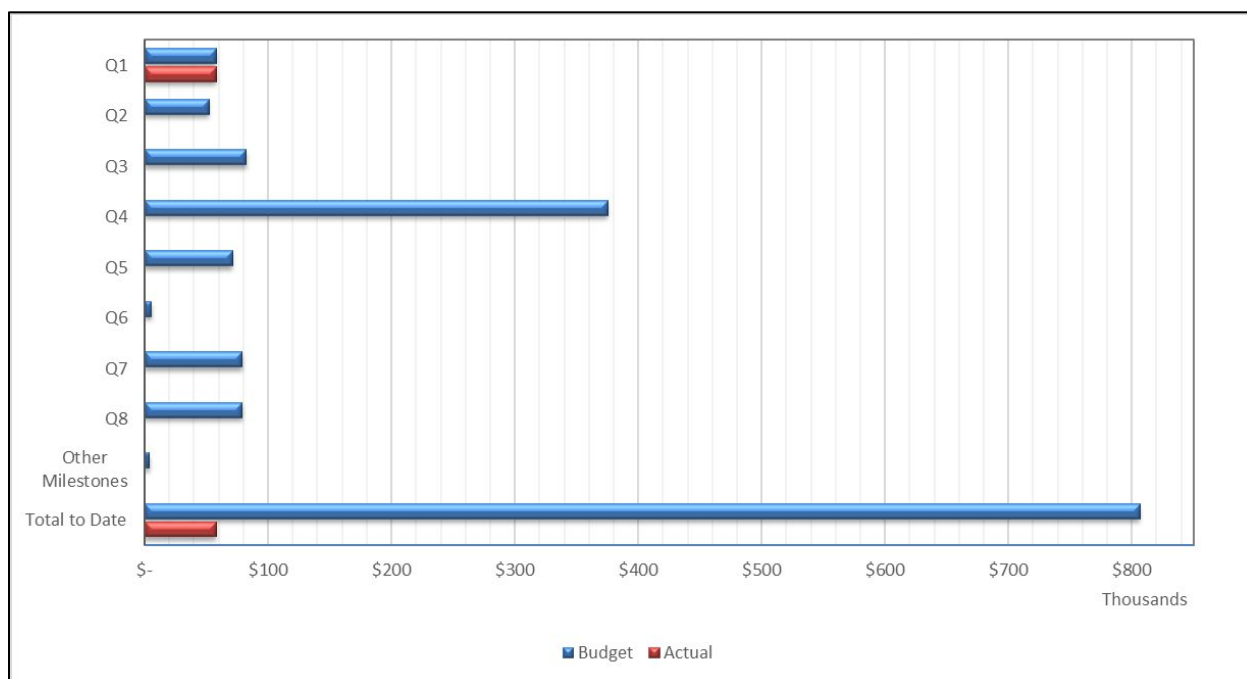


Figure 4-1: Project Financial Tracking

5 Project Technical Status


5.1 Task 1 – Project Initiation

The goal of Task 1 was to build a Technical Advisory Panel (TAP) with representatives from regulatory agencies, facility operators, and other key stakeholders in the LNG industry. The Project team compiled a TAP with over 10 members to which two academic advisors will be added during the next Quarter.

The Project team hosted a project kickoff meeting with PHMSA and the TAP on December 12, 2023 via Teams. During this meeting, the Project team reviewed the project background and scope of work to familiarize the TAP with PHMSA's goals for this research project. Thus far, the project has received strong support and very active participation from the TAP.

5.2 Task 2 – Literature Review of Passive Fire Mitigation Methods

Work on Task 2 is in progress, consistent with the project schedule. The Project team is in the process of performing a comprehensive literature review on available passive fire mitigation methods, as well as on available data and mathematical models on the thermal response of structural steel exposed to elevated heat fluxes; a summary of the

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literature findings will be discussed with the TAP next quarter. Work on task 2 will be detailed in a summary report at the end of Quarter 2.

5.3 Task 3 – Experimental Testing

Work on Task 3 has begun ahead of schedule. The Project team anticipates significant input from the TAP on the details of the test program, therefore, several calls with TAP members are anticipated throughout the next few quarters. Work on this task will continue as detailed in the project schedule.

5.4 Task 8 – Project Management

The Project team has developed an internal project schedule and manpower allocation to support the proposed project timeline and has internal team meetings as necessary. Monthly reports have been submitted to PHMSA effective November 2023, except for months ending a quarter. The first quarterly report was submitted on December 22, 2023.

6 Project Schedule

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

- The project is on budget;
- The overall schedule shown in Figure 6-1 remains on track and no changes in the project schedule have been required;
- The project team remains highly engaged and stable (with no changes in personnel).

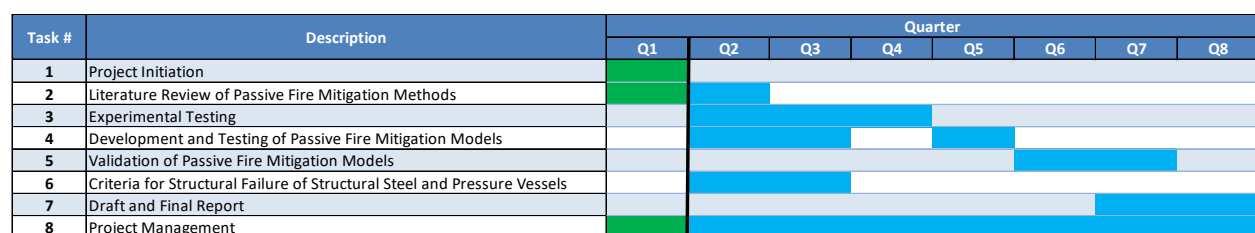


Figure 6-1: Project Schedule

6.1 Future Activities

Project team resources in Q2 will be focused on completing Task 2 "Literature Review of Passive Fire Mitigation Methods" and beginning Task 4 "Development and Testing of Passive Fire Mitigation Models" and Task 6 "Criteria for Structural Failure of Structural Steel and Pressure Vessels". Planning work for Task 3 "Experimental Testing" will also continue.