

COMPARISON OF EXCLUSION ZONE CALCULATIONS AND VAPOR DISPERSION MODELING TOOLS

1ST QUARTERLY REPORT

PHMSA Solicitation:	DTPH56-15-RA-000001
Research area:	Liquefied Natural Gas (LNG)
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1 INTRODUCTION

CH-IV International (CH-IV) has contracted with DOT PHMSA to provide research on vapor dispersion modeling (Project). This Project will compare the various design spill selection methodologies and compare the exclusion zone results for various facility types. The comparison will include a review of the DEGADIS, Phast, and FLACS modeling tools currently approved by DOT PHMSA to perform dispersion modeling to calculate vapor dispersion exclusion zones. The Project will also evaluate several design spill selection methodologies and apply them to import, export, peak-shaving, and mid-size truck loading Liquefied Natural Gas (LNG) plants. This Project will calculate vapor dispersion exclusion zones with each associated design spill. As a result, this project will help DOT PHMSA better define the approach for determining vapor dispersion exclusion zone distances.

2 STATUS UPDATE

- Agreement #DTPH5615T00005 was executed by CH-IV and DOT PHMSA and effective starting September 30, 2015.

2.1 Kick Off Meeting and TAP Update

- On October 8, 2015, an initial kick off meeting was held with CH-IV and DOT PHMSA to discuss the overall timeline and scope of the research project. Call attendees were Phil Suter and Jenna Wilson with CH-IV and Julie Halliday with DOT PHMSA. The proposal was to perform vapor dispersion for an LNG import, export, peak shaving, and mid-scale truck loading. As a result of the call and based on current projects being proposed, the scope of the proposal was changed to include LNG export, peak shaving, truck loading, and bunkering.
- Scope of Work Change: Change LNG import, export, peak shaving, and mid-scale truck loading to LNG export, peak shaving, truck loading, and bunkering.
- It was also discussed that there was a potential to add additional modeling for mitigated releases but a decision on that would be made later in the project.
- The Technical Advisory Panel (TAP) members were also discussed on the call and both CH-IV and DOT PHMSA were in favor of adding additional members from DOT PHMSA, DOE, USCG, and FERC to the TAP to raise the overall level of confidence in the research.
- DOT PHMSA reached out to FERC, DOE and USCG. As a result, Andrew Kohout from FERC, Kyle Moorman from DOE, and Ken Smith from USCG were added to the TAP. Additional personnel from DOT PHMSA and FERC will also be involved in reviewing each Task but Andrew Kohout and Julie Halliday will remain the main points of contact.
- On November 19, 2015 a full kick off meeting was held with DOT PHMSA and the TAP to re-introduce the project to the new members of the TAP who were recently added.

2.2 Task 1 Update

- On December 7, 2015 a draft of Task 1 deliverables were sent to the TAP for review with a review deadline on December 18, 2015.
- Comments were provided by DOT PHMSA, FERC, and Rich Kooy on the draft Task 1 deliverables. CH-IV consolidated all comments into a single document and provided responses to all comments. On December 29, 2015 the consolidated comments and responses were provided to DOT PHMSA for review.
- On December 30, 2015, CH-IV and DOT PHMSA convened a TAP Task 1 comment response review call and made final decisions on the comments from the TAP.

3 SCHEDULE UPDATE

Due to the addition of new TAP members and the need to hold an additional kick off meeting for the new TAP members, Task 1 was delayed approximately 1 month.

Other Tasks are still on schedule.

4 SECOND QUARTER TASK PROJECTIONS

It is anticipated that Task 1 will be completed early in the second quarter. It is anticipated that Task 2 will start and be completed mid second quarter. It is anticipated that Task 3 will start late second quarter.