Background: NFPA 58, Liquefied Petroleum Gas Code, addresses the storage, handling, transportation, and use of liquefied petroleum gas (LP-Gas). This code contains the provisions for the placement of LP-Gas containers, including those installed outside of buildings, whether they are portable or permanently installed. Table 6.4.1.1 of the 2020 edition of NFPA 58, contains minimum distances, measured from any portion of the container surface to several other items including other containers, important buildings, and line of adjoining property that can be built upon. Currently, The NFPA Liquefied Petroleum Gases technical committee, who is responsible for the development of NFPA 58, is questioning the separation distances specified for second stage propane regulator vents. While there is data regarding low-pressure regulator failure rates, the technical committee is interested in identifying how many fires incidents have occurred due to a regulator failure.

Research Goal: Determine how many fire incidents occurred due to the failure of low-pressure propane regulators venting to the atmosphere to determine the risk associated with low-pressure propane regulator failure rates.

Project Tasks:

Task 1: Develop & Implement Survey Questionnaire.
Task 1.1: Develop a questionnaire in consultation with the project technical panel that will focus on capturing data around fire incidents that occurred due to a low-pressure propane regulator failure. The questionnaire should also seek information on the limitations of any data. Personal or organizational identification information shall not be collected through this questionnaire and the data analysis and reporting shall also be conducted in a generic manner.
Task 1.2: Implement the questionnaire by circulating to utilities, insurance companies and other industry-related stakeholder groups in the United States.
Task 1.3: Review and summarize the fire incidents that resulted due to a low-pressure propane regulator failure, including characteristics of the incident and any general themes, if applicable.

Task 2: Risk Analysis. Conduct a risk analysis on the fire incidents identified in Task 1 which includes a hazards assessment that addresses most but not all parameters of the incidents including but not limited to: the regulator failure rate (full failure or leak rate), ignition sources, fire spread, etc.

Task 3: Develop a Research Plan. Develop a research plan that analyzes the data collected from task 1, document knowledge gaps and develop a research plan to fill those knowledge gaps.
Task 4: Final Report: Develop a draft final report that contains the findings from tasks 1 through 3 and review the draft report with the project panel and submit a final report after considering the panel’s comments.

Schedule: This research project must be completed within 6 months of project initiation.

How this information will be used:
- Project deliverables will be useful for NFPA Technical Committees NFPA 58, LP Gas Code.
- Gas Industries