



THE FIRE PROTECTION RESEARCH FOUNDATION

Quantifying Heavy Snowfall in NFPA 58

Background

NFPA 58, *Liquefied Petroleum Gas Code*, has requirements for installations in areas with heavy snowfall, which were first added in a TIA in the 1992 edition and then added to the 1995 edition. The requirements were the result of fatalities due to unusually heavy snow in Lake Tahoe, CA area during the winter of 1992-93 where the snowfall was sufficient to cover propane tanks, move tanks, and break piping systems.

The Technical Committee currently uses ground snow load levels as a hazard threshold in two areas of the upcoming 2014 edition of NFPA 58:

- **6.6.3.6** In locations where the monthly maximum depth of snow accumulation, as determined from the National Weather Service or other published statistics, is more than the height of aboveground containers, excluding the dome cover, the following requirements shall apply...
- **6.15 Installation in Areas of Heavy Snowfall.**
6.15.1 In areas where the ground snow load is equal to, or exceeding, 175 psf piping, regulators, meters, and other equipment installed in the piping system shall be protected from the forces of accumulated snow.

While the TC has attempted to provide usable requirements, problems of interpretation occur.

Research Objective: to provide guidance to the NFPA 58 Technical Committee on the criteria that should be used to determine threshold value(s) for heavy snowfall.

Project Tasks:

1. Review of literature: general snow load literature; analogous industry methodologies for determining snow load thresholds; state and local regulatory provisions (as available); failure incidents and analysis (potential resources include a survey of local authorities, information resources from the project technical panel and others, as available).
2. Identify the key parameters for snow accumulation related to both aboveground tank installations and protection of piping in NFPA 58. This may include parameters related to snow shedding from roofs, drifting, as well as ground snow load.
3. Provide the technical basis for threshold criteria that should be used for the requirements for aboveground tank installations and piping protection.

Implementation:

The research program will be conducted under the auspices of the Fire Protection Research Foundation and will be guided by a Project Technical Panel who will provide input to the project, recommend contractor selection, review periodic reports of progress and research results, and review the final project report.

Reporting and Deliverables:

The project contractor will provide periodic reporting and communication on all project tasks to the Project Technical Panel and will prepare the following deliverables: a report on Task 1, and draft and final project reports. The contractor will present the findings to the NFPA Technical Committee or via webinar upon request.

Intellectual Property

The Foundation retains the rights to the project report.

Project Milestones and Approximate Schedule

Proposals Due: August 30, 2013

Selection of Contractor: September 16

Task 1 Report: January 31, 2014

Draft Final Report: March 31

Final Report: May 15

How to Respond

Letter proposals (not to exceed six pages) shall be submitted electronically to Kathleen Almand, Executive Director of the Foundation, at kalmand@nfpa.org no later than 5:00 p.m. Eastern time August 30, 2013. For additional details see "Research Project Guidelines for Contractors" on the Foundation website: <http://www.nfpa.org/assets/files//PDF/Research/GuidanceforContractors.pdf> Each proposal shall include a description of the following which will be used as the basis for proposal evaluation: prior relevant experience and personnel expertise; and scope and approach. This is a fixed price project in the amount of \$20,000. The project will be awarded only upon receipt of a proposal deemed acceptable to the Project Technical Panel.