



# 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.