



RESEARCH FOUNDATION

RESEARCH FOR THE NFPA MISSION

Project Summary

Carbon Monoxide Incidents: A Review of the Data Landscape

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Background: There are multiple sources which provide Carbon Monoxide (CO) incident data including but not limited to: Consumer Product Safety Commission (CPSC), Center for Disease Control and Prevention (CDC), U.S. Fire Administration (USFA), and standard development organizations such as the National Fire Protection Association (NFPA) and the International Codes Council (ICC). Each organization contains its own methodology for collecting information and providing statistics; however, it is not clear what specific information is being collected, disseminated, and represented for each incident type.

New requirements for the installation of CO detection into several types of occupancies (both new and existing occupancies) are being addressed in the latest editions of NFPA 101 Life Safety Code® and NFPA 5000, Building Construction and Safety Code®. There is a lack of understanding regarding the data available for non-fire CO incidents, specifically for commercial-type occupancies.

Research Goal: The overall goal of this project is two-fold:

- Review and present the carbon monoxide incident data landscape to clarify the source of information, how it is compiled and what the data represents.
- Identify, summarize, and analyze case studies of non-fire carbon monoxide incidents specific to commercial-type occupancies.

Project Tasks: This project involves the following tasks:

Task 1. Identify Currently Available Data Sources:

1. Task 1.1: Identify and evaluate the data points collected from each applicable source of CO incident data.
2. Task 1.2: Address the positive and negative characteristics of currently available data sets from these sources.
3. Task 1.3: Identify the insights that can be derived from this data. Also highlight what information cannot be obtained from the existing data sets.

Task 2. CO Incident Data Collection:

- Task 2.1: Identify and collect non-fire carbon monoxide incidents in commercial occupancies (time range TBD) reported in the public domain by conducting a literature review of CPSC, CDC, USFA, NFPA, ICC, news stories, OSHA records, insurance claims (to the extent that such information is publicly available)
- Task 2.2: Identify Contributing Factors: Identify and evaluate the factors that contributed to the non-fire CO incidents found in Task 2.1.
- Task 2.3: Gap Analysis: Verify the factors identified in Task 2.2 to evaluate if they are addressed in applicable codes (e.g., NFPA 101 Life Safety Code® and NFPA 5000, Building Construction and Safety Code®) that strive to prevent injury and death from carbon monoxide to identify gaps in the requirements for commercial-type occupancies from. Refer to the prior FPRF report: [Carbon Monoxide Detection and Alarm Requirements: Literature Review](#).

Task 3. Final report: Prepare a final report and finalize the report after reviewing with the project panel.

Implementation: This research program will be conducted under the auspices of the Research Foundation in accordance with Foundation Policies 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.

Schedule: This research project is scheduled to be completed within 6 months of project initiation.

Intellectual Property: The Research Foundation will retain rights to the project report which will be published on the Foundation website.