

This study examined the experience with, and potential hazard of, town gas explosions in buildings supplied with town gas - the term town gas includes here any utility gas such as natural and manufactured gas - and the regulations and practices designed to prevent or mitigate such explosions. The frequency, causes, and consequences (human and property losses) of gas explosions in buildings are evaluated, based on reported incident data for the past decade.

Our results are based primarily on U. S. records and statistics. Although detailed and comprehensive statistics on the subject do not exist and an exhaustive case-by-case examination of each incident was not feasible, we have combined relevant statistical and case information to arrive at a realistic evaluation of past gas explosion experience. The available data do not permit distinguishing between gas explosions and gas fires, but in buildings gas explosions are considered predominate. It is estimated that about 100 deaths occur in the United States annually from gas explosions/fires in buildings, with at least 25 of these deaths occurring in incidents involving the building piping system (including cases of leakage). Up to \$72 million are lost annually in gas explosions/fires in buildings in the United States; however, the property losses for incidents associated with the building gas piping system are estimated to be less than \$20 million, or about lankar. The U. S. national code for gas installations in buildings was examined and discussed with experts in the field.

Our discussion focuses on requirements for the gas piping system and the gas appliance premises only; the code copies provided for Osaka and Tokyo Gas describe these regulations in detail and those directly concerning gas appliance and gas equipment.