

## **David E. Cox, P.E.**

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### **EXPERIENCE**

#### **NPS - Founder and Principal 1991 - Present**

NPS offers incident investigation and litigation support (including expert testimony) in all matters involving fuel gases such as propane, natural gas, sewer gas, and acetylene. This includes such things as appliance, container, and industrial equipment malfunctions; residential, commercial, and industrial explosions and fires; recreational vehicle and gas grill fires; and carbon monoxide poisoning. NPS is also capable of testing and evaluating gas handling equipment such as regulators, controls, safety devices, meters, etc.

#### **Weldex Corporation - Chief Executive Officer and Co-Founder 1960 - 1991**

Weldex Corporation was engaged in the manufacture of tank truck bodies for use in the bulk retail delivery of propane. These vehicles called "bobtails" were built to Federal DOT specifications. Weldex also reconditioned and re-certified propane cylinders. This work was done under license and direction of the Federal DOT. During this period, Weldex was engaged in the fabrication of propane dispensing units and the distribution of equipment for the conversion of gasoline engines to operate on propane.

Duties at Weldex included management, sales, industry liaison, engineering, teaching of technical and safety classes, and after 1984, the investigation of propane incidents.

#### **Weldex Systems Corporation - Chief Executive Officer and Founder 1973 - 1991**

Weldex Systems Corporation designed and constructed, on a "turn-key" basis, plants for the storage, handling, and distribution of propane. These plants were for retail distribution of propane and for industrial standby and peak shaving. This work was done in the midwest and northeast. Storage capacity at times exceeded a quarter of a million gallons.

Duties included design of entire systems, specification of materials and equipment, field layout, construction supervision, code compliance, owner liaison, and regulatory liaison.

Work for both Weldex and Weldex Systems required an intimate knowledge of the physical properties of propane and the technical specifications and characteristics of hundreds of pieces of operational hardware. The list includes a wide range of valves, safety reliefs, regulators, connectors, hoses, pumps, controls, meters, and vaporizers.

## **EDUCATION**

Colgate University  
University of Minnesota  
Bachelor of Civil Engineering  
Bachelor of Business Administration

Member, Chi Epsilon, National Honorary Civil Engineering Society

## **PROFESSIONAL CERTIFICATES**

Commonwealth of Massachusetts: Registered Professional Engineer (PE)  
National Association of Fire Investigators: Certified Fire and Explosion Investigator (CFEI)

## **ASSOCIATIONS**

Member, National Propane Gas Association (NPGA)  
Member, NPGA Technology & Standards Committee  
Member, National Fire Protection Association (NFPA)  
Member, International Association of Arson Investigators (IAAI)  
Member, National Association of Fire Investigators (NAFI)

## **OTHER CERTIFICATIONS AND AFFILIATIONS**

Registered Design Certifying Engineer and Registered Inspector for MC-331 tank trucks;  
Department of Transportation, Office of Hazardous Materials

Instructor: The Institute of Fire Science, Rochester, NH

## **PUBLICATIONS**

Special Report - LP Gas Cylinders; Fire Findings; Summer 1997

Heat and Temperature Are Not Interchangeable Concepts; Fire Findings; Summer 1999

Special Report - Gas Regulator Lock-Ups; Fire Findings; Summer 2002

## INCIDENT INVESTIGATIONS

My experience is broad and ranges over many states. On these pages I have listed a small percentage of the total number of cases in which I have been involved. The purpose of this listing is to try to illustrate the diversity of challenges that I have encountered.

**Alabama** – A propane transport truck off-loading at an industrial plant catches fire.

**Arizona** - A malfunctioning bake oven in a coatings plant explodes.

**Arkansas** - A space heater explodes when the occupant is trying to light it. A glass front on the heater shatters and injures the occupant.

**California** - Propane leaks from a bobtail while the driver is making a delivery resulting in a major fire.

**Connecticut** - A carbon monoxide death involves a young person sleeping overnight in a vacation home that was still “winterized”.

**Delaware** - A propane regulator on an underground tank serving a mobile home park becomes flooded and frozen, resulting in several simultaneous home fires.

**Florida** - Built in gas grill on a patio catches fire burning the user.

**Georgia** - Man is burned while trying to light pilots on a stove. Uncapped line in an adjoining room supplied the gas.

**Illinois** - 100# propane cylinders stored in a maintenance garage are suspected to be the cause of a fire that destroys the building.

**Indiana** - A mysterious explosion and fire in a luxury home serviced by the local natural gas utility.

**Kentucky** - An explosion and fire results in two deaths. Although the house is serviced by propane, fire originated in gunpowder storage area of an indoor shooting range.

**Louisiana** - Loading hose ruptures and whips out of control while propane transport truck is loading at a terminal.

**Maine** - A propane regulator fails allowing high pressure gas to vent through the relief valve. Escaping gas is ignited by a nearby vaporizer, and major building damage results.

**Maryland** - The origin of a restaurant fire is a circuit breaker panel, but propane is suspected of adding to the fire damage.

**Massachusetts** - A leak in the natural gas pipeline in the street results in major structural damage to a multi-story row house.

**Michigan** - Three persons are killed when an improperly mounted propane cylinder allows propane liquid to flow into a heater in a recreational vehicle.

**Minnesota** - Two people badly burned by propane in a bungled case of apparent attempted murder.

**Missouri** - Leaking propane line under the crawl space of a home results in an explosion and fire.

**Nebraska** - An irrigation pump station catches fire while the propane fuel tank is being filled.

**New Hampshire** - Natural gas leak at a strip mall destroys half of the stores.

**New Jersey** - An explosion in an acetylene generator results in one death.

**New York** - A commercial establishment in a strip mall explodes and burns during the night. A case of suspected arson.

**North Carolina** - An explosion in the utility room of a restaurant burns an off duty employee.

**Ohio** - A propane vaporizer, part of a standby propane-air system at an industrial plant, explodes and burns.

**Oklahoma** - A safety shutdown valve fails to operate in a propane dealer bulk storage plant, resulting in a fire and a badly burned truck driver.

**Pennsylvania** - A welder is killed by an acetylene explosion in an underground mine.

**Puerto Rico** - A utility worker in a manhole is badly burned by leaking gas from a nearby line in the street.

**Tennessee** - A leak from a gas fired commercial swimming pool heater destroys the pool building and badly burns the attendant.

**Vermont** - Carbon monoxide from a gas refrigerator results in the death of a child in a vacation home.

**Virginia** - A home burns to the ground and propane is present and suspected.

**West Virginia** - A small cylinder stored in an attached garage is suspected of leaking and causing a fire.

**Wisconsin** - A suspected case of arson involving newspapers, sewer gas, and MEK.