

**ENGINEER: MECHANICAL
PROCESS
UTILITIES**

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EDUCATION

August, 1979 Bachelor of Science, Mechanical Engineering, University of Utah,
Salt Lake City, Utah

PROFESSIONAL EXPERIENCE:

2005
to present **Engineering Design and Testing Corp., Oakland, California**
Assistant Vice President, District Engineering Manager and Consulting
Engineer - Investigation of incidents involving natural gas piping systems and
facilities; moisture intrusion and damage in residential and commercial
buildings and industrial facilities; infrastructure utilities and piping systems;
HVAC and refrigeration systems; fire suppression systems; cranes/heavy
equipment, machinery and equipment. Services provided include failure
analysis and causation identification, scope of damage evaluations, estimate
repair/replacement costs, claims analysis, standards and codes interpretation,
fire origin and cause, and construction monitoring and timeline scheduling.

1998 - 2004 **Pacific Gas & Electric Company, San Francisco, California**
Manager – Conducted investigations of major gas incidents. Responsible for
development and implementation of construction, engineering, operations
and maintenance standards, procedures for gas distribution piping systems.
Prepared expert testimony and testified in California Courts on behalf of
PG&E's gas distribution capital and expense investments for the 1999
regulatory funding proceedings.

1993 – 1998 **Pacific Gas & Electric Company, San Francisco, California**
Senior Distribution Engineer – Investigated cause and emergency response of
gas distribution and transmission incidents. Interpreted regulatory code
requirements. Developed engineering, construction, and operations and
maintenance standards for pipe rehabilitation, valves, fittings, pressure
control facilities and substructure enclosures. Investigated system operations,
material, equipment, and facility failures.

1989 – 1993;
1984 – 1988 **Pacific Gas & Electric Company, Fresno, California**
Division Engineer – Supervised multi-disciplined work groups responsible
for the engineering, design, operations and maintenance of transmission and

distribution systems, including cathodic protection. Investigated gas incidents including fires and explosions and damage caused by third party dig-ins.

1988 – 1989

Pacific Gas & Electric Company, Fresno, California

Transmission and Regulation Supervisor – Supervised technical workgroup responsible for operations and maintenance on 2700 miles of pipeline and 165 pressure control stations. Scheduled work, prepared and directed system sequence of operations changes, and diagnosed system operations.

1984

Pacific Gas & Electric Company, Antioch, California

Area Engineer - Responsible for cathodic protection, facility records management, design and cost estimate preparation, engineering of gas transmission pipelines and associated facilities.

1979 – 1984

Pacific Gas & Electric Company, Walnut Creek, California

Engineer - Designed and engineered gas transmission pipe line, metering, and compressor station facilities. Specified water treatment and heat exchanger operations and maintenance at compressor stations. Performed pipe loading and stress analysis, and hydraulic capacity and system planning analysis.

1978-1979

Northwest Pipe Line Company, Salt Lake City, Utah

Engineering Intern – Facility engineering, perform cathodic protection analysis and prepare recommendations.

PROFESSIONAL ORGANIZATIONS:

ASM International (ASM)
American Society of Mechanical Engineers (ASME)
California Conference of Arson Investigators (CCAI)
East Bay Claims Association – Vice President 2012-13
National Association of Fire Investigators (NAFI)
National Fire Protection Association (NFPA)
National Society of Professional Engineers (NSPE)
National Association of Subrogation Professionals (NASP)

PROFESSIONAL REGISTRATIONS:

Registered Professional Engineer – Arizona (#44546)
Registered Professional Engineer – California (#M27526)
Registered Professional Engineer – Idaho (#14379)
Registered Professional Engineer – Hawaii (#14923)
Registered Professional Engineer – Montana (#19897)
Registered Professional Engineer – Nevada (#021117)
Registered Professional Engineer – Oregon (#78334PE)
Registered Professional Engineer – Utah (#180944-2202)
Registered Professional Engineer – Washington (#42731)
National Council of Examiners for Engineering and Surveying (#28431)

CONTINUING EDUCATION:

2010	Fire Pump Seminar National Fire Protection Association Reno, Nevada
2007	Investigation of Gas & Electric Appliance Fires Western Michigan University Kalamazoo, Michigan
2006	Fire and Explosion Investigation National Association of Fire Investigators Sarasota, Florida
2006	Mechanical and Electrical Estimating RS Means Las Vegas, Nevada

EXPERIENCE – ENGINEERING INVESTIGATIONS (partial listing)

Natural Gas Pipeline and Facilities

Damage to Pipelines Caused by Third Party Dig-Ins – Multiple Locations, California

Examine damaged pipe and site location, review utility locate and mark records, review “call before you dig” records, review third party records, and determine cause of dig-in. Evaluate scope of damage, emergency response and repair activities. Review utility repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Compressor Station Fire – Gillette, Wyoming

Examine station and equipment, review operating records and other documents and determine cause of fire.

Gas Explosions and Fires – Multiple Locations, California and Washington

Investigate and determine whether natural gas fueled explosions and fires were caused by natural gas utility facilities and/or operations.

Underwater River Crossings – Calgary, Canada

Examine three separate pipeline crossings underneath flooded rivers, review inspection records, conduct underwater survey, and determine scope of damage of pipelines. Evaluate the repair/replacement scope of work and estimated costs.

Overpressurization of Low Pressure Distribution System – Alameda, California

Lead investigation and determine cause of overpressurization of a low pressure system and evaluate gas utility emergency response. Examine pressure control station equipment and maintenance records, system operation records, emergency response sequence of events.

Pressure Regulator Stations – Multiple Locations, California

Determine cause of pressure regulator valve failures at multiple regulator stations and metering facilities.

Commercial and Residential (Single and Multi-Story)

Moisture/Water Intrusion – Multiple Locations

Investigation of 200+ incidents involving water supply, irrigation, HVAC, waste, drainage, and fire sprinkler system piping and associated fittings, connector hoses, and equipment; water heaters and boilers; restroom and kitchen faucets and appliances; washing machines.

Heat and Smoke Damaged Generator Ductwork – Mesa, Arizona

Review of drawings, fire damage reports, repair costs, business interruption estimates and other documents to determine scope of damage. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Leaking Chiller Tubes at Medical Center – Bakersfield, California

Examine chiller system and evaporator, review manufacturer drawings and equipment specifications, review operating records. Determine cause and scope of damage. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Dry Cleaning Equipment – Chandler, Arizona

Examine equipment, review equipment specifications, service records and other documents, determine cause of leaks in equipment steam chamber.

Collapsed Car Lift – San Francisco, California

Examine steel member framed, hydraulic powered car lift, review manufacturer specifications, drawings and other documents, determine cause of collapse.

Hail Damaged Roof Top HVAC Condensers – Scottsdale, Arizona

Examine condensers, identify impact damage caused by hail and determine reparability. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Leaking Hydraulic Elevator Casing – Multiple Locations

Examine elevator equipment, service records and other documents and determine cause of leak.

Water Damage to Elevator Components (multiple) – Multiple Locations

Examine elevator system components, identify water contacted components, and determine scope of damage, if any, to water contacted components. Evaluate repair cost proposals as to appropriateness of repair and associated costs.

Construction

Crane Tipover – San Ramon, California

Examine crane and highway construction site, review crane specifications, operator log and other documents and determine cause of tipover. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Mechanical Lift Tipover – Groveland, California

Examine lift and residence construction site, review lift specifications and determine cause of tipover.

Crawler Crane Tipover – West Olive, Michigan

Examine crane at generation plant, determine scope of damage from tipover and cost to repair. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Leaking Toilets in Condominiums Building – San Jose, California

Examine toilet installations, review manufacturer specifications and instructions, review test reports and determine cause of leaks.

Leaking Water Supply Valves in Multi-Unit Residential Buildings – Walnut Creek, California

Examine valves and installation, review manufacturer specifications and literature, determine cause of fractures in valve bodies.

Fire Investigations

Equipment and Appliances – Multiple Locations

Investigation of fires involving furnaces, water heaters, cooking and other appliances.

Industrial

Moisture/Water Intrusion – Multiple Locations

Investigation of incidents involving water supply, HVAC, boilers and water heater equipment, piping, and associated fittings.

Imploded Milk Storage Tank – Hanford, California

Examine tank, tank service and dairy operating records, manufacturer drawings and specifications and determine cause of implosion.

Imploded Fermentation Tank – Ukiah, California

Examine tank and process equipment at brewery, review operating records, drawings, sequence of operations, manufacturer specifications and other documents and determine cause of implosion. Review repair and pricing documents as to appropriateness of repairs and reasonableness of costs.

Imploded Storage Tank at Ethanol Plant – Cambridge, Nebraska

Examine plant and tank, review operating records and system design, coordinate testing of valve, and determine cause of collapse.

Single-Axis Solar Panel Tracker System Detachment – McCarran, Nevada

Examine tracker system and panels, review operating records and design documents, review snowfall and other weather records, and determine cause of detachment.

Ammonia Release at Cold Storage Facility – Phoenix, Arizona

Examine refrigeration equipment, review manufacturer specifications, review maintenance records, test components, and determine cause of ammonia release.

Utilities Service Interruption – Harahan, Louisiana

Review documents and determine duration and cause of service interruptions to a cold storage facility

Shiploader Tipover– Vancouver, Washington

Examine shiploader and bearing assembly, review design drawings and operating records, review video of incident, supervise other discipline engineers, and determine cause of tipover.

Damaged Retort MIG Thermometer – Corning, California

Examine retort, thermometer, and process equipment at olive processing facility, review operating records, FDA requirements, sequence of operations, manufacturer specifications and other documents and determine cause of damage to thermometer.

Logging Vehicle Fire Suppression System – Burns Lake, British Columbia, Canada

Examine fire damaged logging vehicle and fire suppression system, review multiple documents and determine why suppression system did not discharge.

Controlled Atmosphere Room at Cold Storage Facility – Multiple Locations, Washington

Examine facility Atmosphere Control System and refrigeration system, review test reports and facility records, and with a fruit harvest specialist, determine if damage to stored fruit was the result of a malfunction in the systems.

Chiller Coil Tube Leaks at Cold Storage Facility – Reedley, California

Examine facility and chiller tubes, review facility operations, review test reports and other documents and determine cause of leaks.

Fire Damaged Distillation Column at Ethanol Plant - Clinton, Iowa

Examine plant and column and review plant drawings and records. Determine scope of damage, cost of repairs and work schedule to facilitate repairs.

Digester Overpressure, Water Treatment Plant – Delano, California

Examine digester and associated equipment, review facility drawings, operating records and determine cause of overpressure.

Damaged PVC Piping System Containing CO2 Gas – Corning, California

Examine Carbon dioxide vaporizer and overhead PVC piping system in olive processing facility, review drawings, service records, weather records, operating and other documents and determine cause of damage.

Water Well Contamination – Live Oak, California

Examine well, review well inspection videos, water quality reports and other documents, and determine cause of contamination.

Water Well Collapse (2) – Corcoran, California

Examine well head and inspection videos, review drilling logs well test records and other operating documents and determine cause of collapse. Review repair documents as to appropriateness of repairs and reasonableness of costs.

Water Pumping Plant – Walnut Creek, California

Examine plant, review manufacturer specifications, design drawings and other documents, and determine cause of coupling detachment. Supervise other engineering disciplines to evaluate scope of water damage to building components, and electrical and mechanical equipment. Review repair documents as to appropriateness of repairs and reasonableness of costs.

Water Treatment Plant – Livermore, California

Examine damaged clarifier equipment, review construction, maintenance and test records, and determine cause of damage. Review repair documents as to appropriateness of repairs and reasonableness of costs.

Whirlybird Type Crane Tipover – Seattle, Washington

Examine crane, determine scope of damage, conduct research on used crane prices, and determine value of damage.

Fire Damaged Conveyor, Recycling Power Generation Plant – Oroville, California

Examine conveyor and associated electrical and mechanical equipment. Review construction drawings, operating records, repair cost estimates and other documents. Engage other engineering disciplines to determine scope of damage and reparability. Review repair documents as to appropriateness of repairs and reasonableness of costs.

Ammonia Refrigeration System – Coalinga, California

Examine refrigeration system, review facility and system drawings, service records and other documents and determine cause of ammonia release.

Corroded At-Grade Water Storage Tank – San Luis Obispo, California

Examine tank and attached piping, review cathodic protection system installation and service records, review other records, test insulation points, and determine cause. Determine scope of damage. Review repair documents as to appropriateness of repairs and reasonableness of costs. Monitor repair schedule.

Leaking At-Grade Gasoline Storage Tank – Las Vegas, Nevada

Examine tank, associated equipment, and tank farm cathodic protections system. Review tank and cathodic protection system drawings, operating records, manufacturer instructions, test records and other documents. Determine cause of leaks.

Marine

Ship Container Fire – Pacific Ocean

Examine ship containers and contents at Port of Seattle, review ship drawings and records, review manufacturer specification of container contents, and determine cause of fire.

Water Damaged Motors – Fairfield, California

Examine motors and packaging, review transport records and historical weather records, conduct laboratory tests, and determine if source of moisture was during transit or after motors were off-loaded from truck.

Pontoon Boat Lift Separation – Discovery Bay, California

Examine lift and documents and determine cause of separation.

Other

Hiker Fall – Muir Woods, California

Review documents, examine fall location, and determine if the involved trail had been maintained in accordance with regulatory requirements and to determine if the conditions of the incident location were dangerous and hazardous.

Roller Blader Fall – Ixtapa, Mexico

Conduct elevation survey and coefficient-of-friction tests on concrete trail.

Mobile Paper Shredder Truck – Fresno, California

Examine truck and paper shredder, review design drawings and determine cause of mechanical damage to shredder.

LEGAL CONSULTATION – PEER REVIEW (partial list)

Natural Gas Explosion – Seattle, Washington

Review gas utility maintenance and emergency response records, review Washington State regulatory requirements, review regulatory agency reports, review expert and testing agency reports and other documents and provide opinion as to the cause of the explosion.

Natural Gas Explosion – Sublette, Kansas

Review gas utility maintenance standards, maintenance and operating records, Kansas State regulatory requirements and other documents. Provide opinion as to cause of explosion.

Moisture Intrusion – Multiple

Review manufacturer, engineering, and investigation reports regarding separated piping system components. Provide opinions as to cause of separated components.