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ENGINEERING PROJECT EXPERIENCE

Plumbing/Water Losses

- Engineering analysis of a fatal pressure vessel explosion during pneumatic testing
- Engineering analysis of a mis-assembled rail car valve that led to a massive oil leak
- Multiple engineering investigations of frozen pipe water losses
- Multiple engineering investigations of water loss due to failed sump pumps
- Multiple engineering investigations of flooded basements due to surface water
- Engineering investigation of failed and corroded PEX tubing clamps
- Engineering investigation and testing of a dislodged shower head which struck a user
- Engineering investigation of a water loss due to a temporary fire suppression system main failure during construction
- Engineering investigation of a corroded fire suppression system water main
- Engineering investigation of a rooftop pool leak due to a filter connection fitting failure
- Engineering investigation of a water loss due to a fractured HVAC heat exchanger
- Engineering investigation of a failed CPVC elbow fitting in a residence
- Engineering investigation of a water loss due to a misconfigured chemical injection pump
- Engineering investigation of reported plumbing defects in residential construction
- Engineering investigation into rampant water losses due to corroding Reflok fittings in a large apartment building
- Multiple engineering analyses of inadvertent sprinkler head discharges
- Multiple engineering investigations of failed piping systems due to improperly installed Victaulic fittings
- Engineering investigation and testing of a failed water filter housing in a multistory office building
- Engineering investigation of a pneumatic golf ball distribution system
- Engineering investigation of high-water usage due to an underground water supply piping leak
- Engineering analysis of a failed sewer pipe due to tree roots

Heavy Equipment

- Engineering investigation of a fatal caught-between incident involving a SkyJack SJ3219 scissor lift
- Engineering investigation of a fatal caught-between accident involving a CAT CB13 roller
- Engineering investigation of a tip-over of a SkyJack SJ3219 scissor lift
- Engineering investigation of a struck-by accident involving a boom lift
- Engineering investigation of a crushed-by fatal accident involving a Bobcat skid steer during logging operations
- Engineering investigation and testing of a Crown electric pallet jack accident
- Engineering investigation of a farm tractor with motor-mount bolt failures
- Engineering investigation of uncontrolled movement of a pavement roller

- Engineering investigation of BraunAbility ambulance lift
- Engineering investigation of a commercial wood router back feed event
- Engineering investigation of an industrial circular saw kickback accident
- Engineering investigation of a stump grinder accident
- Engineering investigation of a fabric weaving guarding system
- Engineering investigation into a band saw injury at a meat processing facility
- Engineering investigation of a cocoa bean processing plant guarding system
- Engineering investigation of a fatal crane caught-between incident at a steel plant
- Engineering investigation of a pinch point accident with a dock leveler system design
- Engineering investigation into the guarding on a mulch blowing system
- Engineering investigation into the guarding on a recycling center processing line
- Engineering investigation of a caught-between accident at plastic extrusion processing line
- Engineering investigation into a fatal material cart tipping incident at a manufacturing plant
- Engineering investigation of a dredging ship transmission failure

Slip, Trip, and Falls

- Multiple engineering/code analyses of slips and falls on stairways
- Multiple engineering/code analyses of trips and falls on sidewalks
- Multiple engineering/code analyses of falls at airport tarmacs
- Multiple analysis of falls at senior living centers
- Multiple engineering/code analyses of trip and falls over curbs
- Engineering analysis of a fatal fall from a rooftop
- Engineering investigation of a fatal fall at a steel processing plant
- Engineering/code analysis of a slip and fall due to construction sediment on a walkway
- Engineering/code analysis of a trip and fall over computer cables in an office setting
- Engineering/physics analysis of a slip and fall in a hotel bathtub
- Engineering/code analysis of a fall allegedly due to a blinding sign light
- Engineering/code analysis of a misstep and fall on the patio of a commercial establishment
- Engineering analysis of a slip/trip and fall at a restaurant booth
- Engineering/physics analysis of a trip and fall over a temporary telecommunications cable
- Engineering/physics analysis of a trip/slip and fall from a mobile MRI trailer
- Engineering/physics analysis of a misstep and fall from a raised exercise mat

Fires and Explosions

- Engineering/fire investigation of a natural gas-powered garbage truck
- Engineering/fire investigation of an explosion in an underground fuel storage tank at a service station
- Engineering investigation of a structural collapse of a selective catalytic reducer at a cement plant due to improper natural gas heating controls
- Multiple engineering/fire investigations of rooftop HVAC systems
- Multiple engineering/fire investigations of small consumer products
- Engineering/fire investigation of a farming combine fire

- Engineering/fire investigation of a round baler fire
- Engineering investigation of a gas water heater burner sooting event
- Engineering investigation of residential boiler due to a scalding event
- Engineering/fire investigation of a flash fire/explosion during welding of a fuel tank
- Engineering/fire investigation at a natural gas pumping station
- Engineering/fire investigation of a residence dimmer light switch
- Engineering/fire investigation of a marine vessel after refueling
- Engineering/fire investigation of a gas range
- Engineering/fire investigation of a heated freezer door in a grocery store
- Multiple engineering/fire investigations involving gas distribution piping in residences
- Multiple engineering/fire investigations due to roof-mounted solar panels
- Engineering/physics investigation into a fuel oil leak during refilling of basement tanks in a residence
- Engineering investigation of carbon monoxide poisoning in a marine vessel
- Fire investigation of a chimney fire
- Fire investigation of a restaurant due to discarded smoking materials
- Engineering/fire investigation of a car fire due to a thrown connecting rod

Hunting Equipment

- Numerous engineering investigations into falls from hunting tree stands including climbing, ladder, and fixed-position stands with respect to design analysis, installation and use, manufacturing, corrosion, and warnings/instructions
- Engineering investigations and testing of a crossbow trigger design
- Engineering investigation of a shooting bench tip-over accident
- Multiple engineering and warnings/instructions analyses of hand injuries during crossbow use for multiple manufacturers
- Intellectual property analysis of a crossbow design

Doors

- Engineering analysis of a kiosk door that failed and fell onto a bystander
- Multiple engineering analyses of fire-rated doors closing performance
- Engineering analysis of a dislodged sliding closet door that led to fatal injuries
- Engineering analysis of a commercial overhead door in a struck-by accident

Construction Defects

- Engineering investigation of a residential wooden deck collapse
- Engineering investigation of a settling chimney due to support corrosion
- Engineering investigation of multiple construction defects in a jail

Medical

- Engineering investigation of a fiber optic tumor ablation probe failure during neurosurgery
- Engineering investigation of a laproscopic trocar separation during surgery
- Engineering investigation of a fall from a patient lift in a nursing home

Miscellaneous

- Engineering investigation a damaged laser-based quality control system during transport
- Physics analysis of a personal injury accident of a consumer lifting merchandise in-store
- Engineering analysis of a dislodged grocery store sign that fell and struck an employee
- Warnings and instructions analysis of a bathroom shower caddy
- Engineering investigation of an office chair that collapsed at a hotel

INDUSTRY PROJECT EXPERIENCE

Oil and Gas

- Development and manufacturing of several downhole oil and gas pressure sensor designs including pressures up to 20,000 psi and temperatures up to 300 C
- Development of downhole fiber optic connectors designs
- Design of oil well completions components; tubing, mandrels, centralizers
- Design of oil and gas wellhead components
- Cryogenic strain sensing of oil and gas tubing using fiber optic sensors
- Several projects to develop electro-optical instrumentation for oil and gas
- Engineering investigation of failed/corroded coiled tubing in an oil and gas application
- Engineering investigation of failed/corroded Inconel tubing in an oil and gas application
- Development of multiple methods to insert long lengths of optical fiber into capillary tubing

Aerospace

- Development of a damage detection system for helicopter rotor transmissions using fiber optic sensors
- Development of a method to predict the remaining fatigue life of rotor components using known usage data
- Damage detection in helicopter rotor blades using vibrations and modal analysis
- Active control of rotorcraft blades using piezoelectric sensors
- Design of a turbine engine monitoring system using laser-based spectroscopy
- Design and testing of a UAV landing system

Marine

- Strain sensing of composite bridge piles using fiber optic sensors
- Strain sensing of marine vessels using fiber optic sensors
- Certification of a privately-owned manned submarine using fiber optic strain sensing
- Shape sensing of towed sonar arrays using fiber optic sensors
- Development of fiber optic fire, flooding, and hatch closure sensors for shipboard damage detection

Optical Sensing

- Development of fiber optic accelerometers for missile tube monitoring
- Development of accelerometer and force sensors for use in an MRI environment