

THOMAS L. BERRY, P.E., CFEI

Senior Vice President



Summary

Tom Berry is a licensed mechanical engineer with over 35 years of experience designing, managing and investigating mechanical systems and equipment used in a wide variety of industries. He has developed extensive expertise in process/industrial systems, including process equipment, ductwork, piping, and controls integration as well as building systems such as plumbing, HVAC, and utilities. Tom has performed investigations in mining, power and energy, construction, manufacturing, hospitality, gaming, healthcare, commercial real estate and residential sectors. He is also a Certified Fire and Explosion Investigator.

Areas of Technical Expertise

- Mechanical Engineering
- Process Engineering
- Controls and Automation
- Equipment

Education

- B.S. Mechanical Engineering, 1978, University of Minnesota, Institute of Technology

Registrations

- Licensed Mechanical Engineer in AZ, AR, CA, GA, MN, NV, OH, OR, TX, and WA

Professional Activities

- Member, American Society of Mechanical Engineers (ASME)
- Member, National Association of Fire Investigators (NAFI)

Select Project Experience

Mechanical Engineering

Corrosion Evaluation, Los Angeles, CA. Evaluation of galvanic corrosion potential for assembly of dissimilar metals. Provided opinion on corrosion potential, design standard of care and provided recommendations for mitigation.

Corrosion Evaluation, Los Angeles, CA. Peer review of expert opinions regarding disposition of galvanized framing members with "white rust" and chloride contamination. Reviewed reports, suggested testing protocols and researched standards.

The Address Downtown Dubai, Fire Loss Assessment,

Dubai, UAE. MEP and fireproofing assessment of an existing 63-story 302 meter supertall hotel and residential tower, which sustained damage from and extensive fire. Services included on-site investigation, comprehensive damage assessment, interfacing with contractors and owners experts, documenting conditions and other support services.

Natural Gas Explosion Risk Study, confidential location.

Performed risk analysis associated with hazards from 12 inch natural gas pipeline distribution system operating at up to 1,000 psig used for gas turbine generators providing back up power for mission critical data storage facilities. Risk analysis included identification of Maximum Credible Events as defined by API 752 for gas release and potential ignition sources.

Property Condition Assessment, Natural Gas Piping,

Sacramento, CA. Performed condition assessment for natural gas piping serving five California State University Campuses. Inspected all gas entrances and conducted interviews in order to assess the condition of the underground gas service serving various campuses. Provided opinion of probable cost for maintenance and replacement of piping and upgrades to gas entrances including seismic gas shut off.

*Denotes work performed with previous employer.

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Industrial Ventilation Design, multiple mine sites, Northern NV.* Industrial ventilation design to reduce airborne mercury in gold refineries to meet National Institute for Occupational Safety and Health (NIOSH) indoor air quality requirements.

High Speed Conveyor Design, Kimberly Clark, Fullerton, CA. Designed sensing and reject station to detect size differences, compared to scheduled SKU. Developed schematic design for control system upgrade including scanner and vision system.

Heat Recovery, R&D Building, St. Paul, MN.* Design of heat recovery system for a 7-story research building. Run around system recovered heat from laboratory exhaust to preheat outside air intake, which resulted in utility savings.

Process Engineering

Pea Protein Plant – Dispute Analysis, NE. Performed investigation into dispute regarding various aspects of the design and construction of a food plant producing pea protein, starch and fiber from raw peas. Performed change order analysis and evaluated new product scaleup.

3M Company, Little Rock, AR and Corona, CA.* Design of dust control system for overland conveying of crushed granite. Design of bulk clay handling systems, including truck unloading, bulk silos, screw conveyors, weigh hoppers, rotary valves and pneumatic conveying. Evaluation of throughput from clay mixers to inclined furnace, including capacity evaluation of bucket elevators, pug mill and storage silos.

Precious Metal Processing, Refinery Design, multiple mine sites, Northern NV.* Selection of equipment and design of piping for carbon in leach circuit, electrowinning, filter press, retort furnace and ore furnace.

Code Analysis, DeQuincy, LA. Performed code analysis, process hazard evaluation, and site evaluation for the storage and handling of flammable liquids for mixing operations. This included identification of indoor and outdoor storage quantities and requirements for containment, location to exposures such as lot lines and public access, and process hazard evaluation for control of flammable vapors and ignition sources.

Chemical Plant Design, Hutchinson, MN.* Chemical plant design including piping, pipe load analysis, utilities, distillation process, tank farm, loading/unloading, CO2 fire protection and inert gas blanketing, boiler and cooling towers.

Origin and Cause, confidential location. Paper mill explosion investigation including process analysis of flammable vapors, review of management of change procedures and determination of likely ignition source.

Origin and Cause, Irvine, CA. Investigation into cause of damage and poisoning to CO catalyst and selective catalytic reduction for 23-megawatt landfill gas to energy plant. Investigated gas treatment and adsorption process for removal of siloxanes from landfill gas stream directed to seven reciprocating engine generators.

Origin and Cause, Veracruz, MEX. Investigation of a petrochemical plant explosion, including process analysis, materials evaluation and physical damage evaluation.

Fire and Dust Explosion, Frac Sand Processing, Houston, TX.* Investigation to determine cause of fire and explosion in frac sand processing system. Established origin and cause as a chain reaction starting with hot spot in thermal oxidizer.

Reactor Failure, Hutchinson, MN.* Investigated and established reactor design deficiency as root cause for damage from thermal cycling.

Chemical Plant Fire Investigation, Hutchinson, MN.* Led investigation into flammable vapor fire and catastrophic equipment failure. Performed root cause analysis, developed corrective action plans, led redesign efforts, construction and commissioning.

Controls and Automation

Newmont Mining, various mine sites, NV.* Design of automated feed system for bulk flux materials. Design of screw feeder for induction furnace. Design of concrete batch plant for underground mine portal. Schematic design for re-commissioned refinery; Design of 1M gal CIL tank.

Surety Claim Analysis, Hanover, NJ. Analyzed the merit of disputed claims regarding controls integration for wastewater treatment gas to energy plant. Provided opinions of merit based on contract documents. Provided written responses and basis for opinions.

Equipment

Confidential Client, origin and cause analysis of thermal oxidizer explosion.

Confidential Client, origin and cause analysis of skid pipe failure in steel reheat furnace.

Confidential Client, Reno, NV. Fire investigation involving damage to power distribution, rectifiers, control panels, electrolyzers, process piping, process equipment. Investigation included damage assessment and estimating of repair and replacement costs for specialty equipment.

Aeration Blower Failure, El Paso, TX. Root cause investigation into blower failure used for aeration of municipal water treatment plant. Investigation included analysis of maintenance records, SCADA data, and damaged artifacts and interpretation of observations during disassembly of blower and gearbox.

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Smelting Furnace Failure, Osceola, AR. Investigation into plasma arc furnace failure resulting in loss of charge and fire. Conducted interviews, site examination of refractory, review of operational data and commissioning protocols.

Automatic Transfer Switch [ATS], Scope of Damage Investigation, Redwood City, CA. Investigated scope of damage and reinstatement requirements for damage to ATS from building fire at OSHPD regulated facility.

Potash Processing, Regina, Saskatchewan, CAN. Investigated damage to crystallizer, heat exchanger and piping caused by collapse of structural supports. Evaluated repair versus replace alternatives and made recommendations for disposition of affected components.

Complex Fire Investigation, Macau, CHN. Led the investigation of fire damage to MEP infrastructure to a large hotel, casino, resort complex occurring while under construction. Prepared equipment matrix summarizing damage to installed assets, prepared methods statement for reinstatement recommendations, worked with adjusters in identifying scope and cost estimates. Coordinated investigation of assets installed by seventeen contractors, working with owner and owners representatives.

Brick Tunnel Kiln Investigation, Mexico City, MEX. Investigation of earthquake damage to 100 meter long brick tunnel kiln including structural support and refractory.

Concrete Pumper Boom Collapse, Las Vegas, NV. Investigated root cause of boom collapse including disassembly of main hydraulic cylinder and materials analysis of oil contaminants utilizing SEM, FTIR and 3D digital microscopy.

Litigation Support

Confidential, investigation into failure of a municipal water treatment plant lift station including finite element analysis, computational fluid dynamics, controls, and basis of design.

Witt & Sohn AG v. CPB Dragados Samsung Joint Venture Parties, investigation and failure analysis of motors used for tunnel ventilation fans. Supreme Court of New South Wales.

Dilling Grp., Inc., v. Winona Bldg. Prod., regarding controls integration for a laminated paper processing line and tank farm.

Barker Block HOA v. 530 Hewitt Holding Co., LLC, et al., regarding a standard of care matter related to corrosion failures of Victaulic Couplings. Investigated specifics related to specification and approval of Victaulic couplings during and after schematic design.

The Faribault Woolen Mill Co. and Adrian Mill Holdings, LLC v. Thermo-Env't Sys., LLC, et al, regarding standard of care for process design and construction deficiencies of heat recovery system, equipment, piping and controls integration.

Bowerman Power v. HR Green, regarding alleged design and construction deficiencies in a 23 MW landfill gas-to-energy plant.

Sworn Testimony

Depositions

Austin Bldg. & Design, Inc. d/b/a The Austin Co. v. Ingredion Inc., regarding various aspects of the design and construction of a food plant producing pea protein, starch and fiber from raw peas. District Court of Dakota County, Nebraska. March 15, 2024.

Juan Gracia v. MedStar Ambulance, provided expert testimony related to the condition, operation and function of a patient transport ambulance cot. November 29, 2023.

WV Great Barrel Co., LLC v. Bohnert Int'l, Inc., regarding machine guarding, electrical panel clearances, emergency stops and process exhaust systems. Circuit Court of Greenbrier County, West Virginia. June 10, 2022.

Covioriente v. Insurers, Bogata, COL, regarding cause and origin investigation of a bridge collapse over the Charte River, highway between Yopal & Aguazul, Casanare de Arbitramento and Conciliacion. March 13, 2020.

T-12 Three, LLC v. Turner Constr., regarding standard of care for plumbing and HVAC design. March 2019.

Confidential Parties, regarding scope of damage to shipbuilding fabrication equipment. November 2014.

Arbitration and Trial Experience

Arbitration and Deposition, RK Industries, LLC. v. Majestic Commercenter Bldgs II and Majestic Realty Co., regarding evaluation of sheet metal manufacturing operations. December 1, 2022.

Appraisal Hearings

Khalil v. Ace-Bankers Standard Ins. Co., regarding swimming pool ventilation and HVAC loss. October 2015.

CONTACT

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