

QEI ENGINEERS, INC.

STAFF PERSONNEL QUALIFICATIONS RESUME

MICHAEL G. MARISCALCO, PE PRINCIPAL

PROFESSIONAL PROFILE

Mr. Mariscalco is a practicing Professional Engineer and consultant, with 30 years of experience in the responsible charge of planning, designing and constructing facilities for manufacturing, commercial and heavy industrial use. His experience as a design principal and project executive includes project development, facility siting and design, building/process design and construction, code compliance, high pressure piping and vessels, energy and utility systems, ventilation, air pollution control, HVAC, structural engineering, and bulk material handling. These activities have involved all phases of conceptual planning, design engineering and procurement, construction and erection, safety and OSHA compliance.

In addition to his direct engineering, procurement and construction (EPC) background, Mr. Mariscalco also maintains expertise in complex systems and equipment failure analysis, accident reconstruction, process hazard and risk assessment, thermal and stress analysis, fire and explosion investigation and construction claims consulting. His investigations include boiler, piping and pressure vessel failures and explosions, structural failures and collapses, and equipment fires and explosions.

EDUCATION

Bachelor of Science, Mechanical Engineering – 1975 – University of Dayton, Dayton, OH
Master of Science, Mechanical Engineering – 1976 – University of Dayton, Dayton, OH

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer – Ohio (E-45495), Pennsylvania (PE030901E)
Indiana (PE60860020), New Jersey (24GE0310390), Maryland (20422), Kentucky (12447)

PROFESSIONAL AFFILIATIONS

- Member, American Society of Mechanical Engineers (ASME)
- Member, National Society of Professional Engineers (NSPE)
- Member, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- Member, American Institute of Chemical Engineers (AIChE)
- Member, National Fire Protection Association (NFPA)
- Member, American College of Forensic Examiners (ACFEI)

- Member, American Society of Safety Engineers (ASSE)
- Member, American National Standards Institute (ANSI)
- Board Member – Unified Board of Building Appeals, Dayton/Montgomery County, OH

CONTINUING PROFESSIONAL EDUCATION

- International Building Code
- International Mechanical Code
- Ohio Building Code
- Ohio Fire Code
- Construction Contracts and Claims
- Sustainable Design
- Industrial Ventilation
- OSHA Industry and Construction Standards
- NFPA Standards
- ASHRAE Standards
- ASME/API Standards

REPRESENTATIVE PROJECT EXPERIENCE

- Principal engineer for 750 PSIG, 1100F, 20,000 SCFM process air supply piping system, USAF, Wright Patterson AFB, Dayton, OH.
- Project executive, office/corporate facilities design & construction, General Motors Corporation, Delco Products Division, Dayton, OH
- Principal consulting engineer for evaluation of Slab Re-Heat Furnace burner safety upgrades, AK Steel Corporation, Middletown Works, Middletown, OH.
- Project executive and principal engineer for the design and construction of 100,000 pound/day-chlorine bleach manufacturing plant with 360 tons of chlorine gas storage, Miami Products and Chemicals, Fairborn, OH.
- Principal engineer for the design and construction of a 2000 ton (refrigeration), central plant, ammonia refrigeration system, Freshway Foods, Inc., Sidney, OH.
- Project executive and principal engineer for the design of a bio-solids, rotary lime kiln, thermal oxidation plant, Butler County Division of Solid Waste Management, Butler County, OH.
- Principal engineer for upgrades to 450,000,000 BTUH, 2900F cement kiln natural gas burners, piping system and process control system, CEMEX, Inc., Fairborn, OH.
- Principal engineer for upgrades to cement kiln air pre-heater system, including piping and controls, CEMEX, Inc., Fairborn, OH.
- Principal engineer for the design and erection of feeders, conveyors and 70' tall storage silos for slag handling and cement kiln-feeding system, CEMEX Inc., Fairborn, OH.
- Principal engineer for the design and erection of emergency structural repairs to 65' tall cement storage hopper containing 280,000 lbs of cement product, CEMEX, Inc. Fairborn, OH.

- Principal engineer for upgrades to 100,000 CFM, cement clinker and fines dust collection system, including multi-level structural repairs to the 120' tall kiln tower, CEMEX Inc., Fairborn, OH.
- Principal engineer for emergency structural repairs to 10' diameter, 65' tall, cement kiln process exhaust stack, CEMEX, Inc., Fairborn, OH.
- Principal engineer for the engineering design of a catalytic hydrogen reforming/catalytic NOx emission control system for a gas turbine/cogeneration installation, Wyeth Biopharma, Andover, MA.
- Principal Engineer for the development of a high temperature, hydrogen annealing safety procedures and documentation program, Brite Gas Annealing, AK Steel Corporation, Middletown Works, Middletown, OH.
- Project Executive for plant design/construction and plastic extruder systems design/installation and erection of bulk storage and handling facilities, Advanced Composites, Inc. (Mitsui Plastics, Inc), Sidney, OH
- Project executive and principal engineer for a sodium erythorbate production plant design and construction, Fujisawa Pharmaceuticals, Peoria, IL.
- Project executive for plant and process design, construction and erection activities for a hydrogen cyanide (HCN) heat-treating facility, Nihon Parkerizing, Inc (Trutec USA), Springfield, OH.
- Principal engineer for a 350,000 CFM selective catalytic reduction control system for the treatment of NOx in quartz processing air emissions, including erection design of 75' tall exhaust stack, General Electric Quartz, Durr Environmental, Newark, OH.
- Principal engineer for the design of a selective catalytic reduction/NOx emission control system for a petrochemical processing facility, Sam Nam Petrochemical (Engelhard Corp), Seoul, Korea.
- Principal engineer for the design and erection of modifications to the 110' tall catalytic CO emission control reactor frame for the 240 MW Crockett Cogeneration Facility, Engelhard Corp., Crockett, CA
- Principal engineer for the design and erection of a 110' tall, catalytic reactor frame, 500 MW primary power generation facility, Arizona Public Power (EmeraChem, LLC), Phoenix, AZ
- Principal engineer for structural and process upgrades to styrene monomer reactor system, piping and controls, Deltech Polymers, Inc., Troy, OH
- Principal engineer for the design and construction of a 120,000 gallon above ground, Class 1B flammable solvent storage tank facility with piping, controls and secondary containment, Textileather, Inc., Toledo, OH.
- Principal engineer for boiler plant/building upgrades to 22 school buildings, Dayton Public School System, Dayton, OH.
- Project executive for the design and construction of a 600,000 SF automotive fasteners plant, Indiana Automotive Fasteners, Greenfield, IN

- Principal Engineer for 15,000 CFM fumed silica/carbon black powder mixing and blending system, General Motors Corporation, Dayton, OH
- Principal Engineer for 40,000 CFM asbestos and talc dust collection systems, Lear Automotive, Danville, KY.
- Principal Engineer for the design and erection of a 140' tall, 8' diameter exhaust stack for a foundry dust collection system, Ravenna Foundry, Ravenna, OH.
- Principal Engineer for the design of a 75' high foundry dust-collection system enclosure for a large vacuum casting process, A&B Foundry, Inc, Franklin, OH.

REPRESENTATIVE FORENSIC INVESTIGATION EXPERIENCE

- Investigation and reconstruction of a high pressure steam separator explosion in the powerhouse of an aircraft components manufacturer, resulting in a single fatality, Cincinnati, OH (Plaintiff's Expert)
- Investigation of corrosion induced heat exchanger failures for a mechanical vapor re-compression based ethylene glycol recovery system at the Cincinnati/Northern Kentucky Airport (Defendant's Expert)
- Investigations of a residential fire resulting from improper installation of a fireplace insert, gas piping and chimney construction, Ft. Mitchell, KY (Plaintiff's Expert)
- Investigation and reconstruction of catastrophic tube failures in two high pressure, 600 HP, steam boilers (Precision Boilers) in a large fabric manufacturing facility, Elkin, NC (Plaintiff's Expert)
- Investigation and reconstruction of a high temperature HVAC hot water system explosion, resulting in extensive property damage, USAF, Wright-Patterson AFB, OH (Plaintiff's Expert)
- Investigation of a coal furnace/ gas conversion burner defect resulting in excessive levels of carbon monoxide (CO), and significant personal injury, New Philadelphia, OH (Defendant's Expert)
- Investigation of a gas furnace defect resulting in excessive levels of carbon monoxide (CO), and multiple fatalities, Cleveland, OH (Defendant's Expert)
- Investigation and reconstruction of a steel mill coke oven gas line explosion with multiple fatalities, Bethlehem Steel, Burns Harbor, IN (Defendant's Expert)
- Investigation and reconstruction of a residential oil furnace explosion with personal injury, Ashland, OH (Defendant's Expert)
- Investigation and reconstruction of an industrial ladder fall accident resulting in serious personal injury, Cincinnati, OH (Defendant's Expert)
- Investigation of the construction site failure of pile casting machinery, resulting in serious personal injury, Pittsburgh, PA (Defendant's Expert)
- Investigation and reconstruction of a construction site structural failure involving erection of a pre-engineered steel building and alleged crane operator error, resulting in serious personal injury, Maysville, KY (Defendant's Expert)

- Investigation of a natural gas explosion for a Hamilton, OH residence resulting in extensive property damage (Plaintiff's Expert)
- Investigation and reconstruction of a fatal, 600 HP high pressure steam boiler explosion with multiple fatalities at a LaPorte, IN rubber products manufacturer (Defendant's Expert)
- Investigation of a refrigerated ammonia release from a food processing, scraped surface heat exchanger, resulting in a single fatality, Chicago, IL (Plaintiff's Expert)
- Investigation and reconstruction of a multiple fatality, guylless derrick crane structural collapse, involving alleged operator error, during the construction of a 500,000 gallon, 130' tall water tower, Granville, NC (Plaintiff's Expert)
- Investigation of design and construction defects for elementary and high school construction, Dayton Public School System, Dayton, OH (Plaintiff's Expert)
- Investigation of design and construction defects in a municipal water park requiring complete demolition and reconstruction, Covington, KY (Defendant's Expert)
- Investigation of design and construction deficiencies for a municipal water treatment facility, City of Lancaster, OH (Plaintiff's Expert)
- Investigation and reconstruction of an explosion and attendant structural failure in the dust collection system of a large metal shredding operation, Gaylord, MI (Defendant's Expert)
- Investigation and reconstruction of carbon monoxide concentrations from welding activities, including ventilation/building-code compliance effects, in a 100,000 square-foot commercial food freezer warehouse, \$42MM personnel injury claim, Asher et al v Unarco Material Handling, London, KY (Defendant's Expert)
- Process consulting and hazard analysis for fabrication deficiencies, six (6) hydrodesulphurization reactors, \$50MM damage claim, ExxonMobil vs. Doosan Heavy Industries and Fluor Corporation, Houston, TX (Defendant's Expert)
- Investigation and reconstruction of a dual fatality structural collapse during the construction of a steel mill electric arc furnace (EAF), involving construction defects and alleged crane operator negligence, Ghent, KY (Defendant's Expert)

PROFESSIONAL EMPLOYMENT HISTORY

1996 - Present	QEI ENGINEERS, INC. Dayton, Ohio Principal & Managing Partner
1994 - 1996	HOK/K INDUSTRIAL (Joint Venture – Kajima, Inc. /HOK Architects) Miamisburg, Ohio President and Chief Operating Officer
1984 - 1994	QSOURCE ENGINEERING, INC. Miamisburg, Ohio President and Chief Executive Officer

1979 - 1984

BRUCE MENKEL AND ASSOCIATES, INC.
Franklin, Ohio
Chief Engineer

1976 - 1979

UNIVERSITY OF DAYTON RESEARCH INSTITUTE
Applied Physics Division/Impact Physics Group
Dayton, Ohio
Research Engineer