

QEI ENGINEERS, INC.

STAFF PERSONNEL QUALIFICATIONS RESUME

MICHAEL G. MARISCALCO, PE

PRINCIPAL

PROFESSIONAL PROFILE

Mr. Mariscalco is a practicing mechanical process engineer and consultant, with 30 years of experience in planning, designing and constructing processes and facilities for chemical manufacturing, steel, cement, petrochemicals, plastics, utilities and power generation. His experience includes project development, plant siting and design, process design and control, code compliance, high pressure piping and vessels, energy and utility systems, ventilation, air pollution control, and bulk material handling. These activities have involved all phases of conceptual planning, design engineering and procurement, process safety and OSHA compliance.

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

EDUCATION

Bachelor of Mechanical Engineering, University of Dayton (1975)

Master of Mechanical Engineering, University of Dayton (1976)

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, National Fire Protection Association (NFPA)

Member, American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE)

Resident Mechanical Engineer - Unified Board of Building Appeals, Montgomery County, OH

REPRESENTATIVE PROJECT EXPERIENCE

- Principal engineer for 750 PSIG, 1100F, 20,000 SCFM process air supply piping system, USAF, Wright Patterson AFB, Dayton, OH.
- Principal engineer for upgrades to Safe Operations Practices program, Hydrogen Annealing Facilities, AK Steel Corporation, Middletown, OH.
- Principal consulting engineer for evaluation of Slab Re-Heat Furnace burner safety upgrades, AK Steel Corporation, Middletown, OH.
- Project executive and principal engineer for the design of a biosolids, rotary kiln, thermal oxidation facility, Butler County Division of Solid Waste Management, Butler County, 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, central plant, ammonia refrigeration system, Freshway Foods, Inc., Sidney, 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 the engineering design of a catalytic hydrogen reforming/catalytic NOx emission control system for a gas turbine/cogeneration installation, Wyeth Biopharma, Andover, MA.
- Project manager for the design of facility and piping systems, new 1000 GPM ultra-pure water system, BP Chemicals (Crown Solutions, Inc.), Lima, OH.
- Principal engineer for multiple plastic extruder systems design and installation, with bulk storage and handling facilities, Advanced Composites, Inc. (Mitsui Plastics, Inc), Sidney, OH
- Project executive and principal engineer for a sodium erythorbate production facility with 30,000 gallons of in-process methanol, Fujisawa Pharmaceuticals, Peoria, IL.
- Principal engineer for plant and process construction for a hydrogen cyanide (HCN) heat treating facility, Nihon Parkerizing, Inc (Trutec USA), Springfield, OH.
- Principal engineer for a 350,000 CFM, NOx, selective catalytic reduction control system for treatment of quartz processing air emissions, 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 of modifications to the catalytic CO emission control system for the 240 MW Crockett Cogeneration Facility, Engelhard Corp., Crockett, CA
- Principal engineer for the design of a catalytic CO emissions control system, 500 MW primary power generation facility, Arizona Public Power (EmeraChem, LLC), Phoenix, AZ
- Principal engineer for 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.

REPRESENTATIVE FORENSIC EXPERIENCE

- Investigation of corrosion induced heat exchanger failures for a mechanical vapor re-compression based ethylene glycol recovery system at a large, Midwestern airport (Defendant's expert)
- Investigation of a high pressure steam equipment explosion with fatalities at a large Cincinnati, Ohio manufacturer (Plaintiff's expert)
- Investigation of a high temperature hot water system explosion resulting in extensive property damage, USAF (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 of a steel mill coke oven gas line explosion with multiple fatalities, Burns Harbor, IN (Defendant's expert)
- Investigation of a residential oil furnace explosion with personal injury, Ashland, OH (Defendant's expert)
- Investigation of ladder fall accident resulting in serious personal injury, Cincinnati, OH (Defendant's expert)
- Investigation of a construction site failure of pile casting machinery resulting in serious personal injury, Pittsburgh, PA (Defendant's expert)
- Investigation of a construction site structural failure for a pre-engineered steel building resulting in serious personal injury, Maysville, KY (Defendant's expert)

- Investigation of a natural gas explosion for a Hamilton, Ohio residence resulting in extensive property damage (Plaintiff's expert)
- Investigation of a motor fuel explosion at an Indian Lake, Ohio marina resulting in extensive property damage (Plaintiff's expert)
- Investigation of an accidental steam boiler discharge at a Cincinnati, Ohio apartment complex resulting in serious personal injury (Plaintiff's expert)
- Investigation of a fatal, 600 HP high pressure steam boiler explosion with multiple fatalities at a LaPorte, Indiana rubber products manufacturer (Defendant's expert)
- Investigation of a guyless derrick crane collapse, with multiple fatalities, during the construction of a 500,000 gallon, 130' tall water tower, Granville, NC (Plaintiff's expert)
- Process consulting and hazard analysis for fabrication deficiencies, six (6) hydrodesulfurization reactors, \$50MM damage claim, ExxonMobil vs. Doosan Heavy Industries, Houston, TX (Defendant's expert)

PROFESSIONAL EMPLOYMENT HISTORY

1996 - present	QEI ENGINEERS, INC. Centerville, Ohio Principal
1994 - 1996	HOK/K INDUSTRIAL (a 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 Dayton, Ohio Research Engineer