



JAMES E. BORTZ, P.E.



Mr. Bortz is a Senior Executive Consultant with Long International. He has over 25 years of process engineering and project management experience including budgeting, cost estimating, cost control, schedule preparation, schedule analysis, change control, change order analysis, and all aspects of contractor management. Moreover, Mr. Bortz has expertise with plant design, construction, and operation, constructability reviews, expert analyses, litigation support, and dispute resolution. His industry expertise includes oil, gas, energy, chemical, paper mill, and biofuels projects. Prior to joining Long International, Mr. Bortz held positions as a Senior Project Manager, Senior Process Engineer, Engineering and Maintenance Manager, and Senior Production Engineer with engineering, chemical, biofuels, and paper companies, including ENGlobal, Harris Group, Range Fuels, Tronox, International Paper, Arizona Chemical, and Dow.

EDUCATION

B.S., Chemical Engineering, Colorado State University, 1991

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer, Colorado (No. 45896)

Registered Professional Engineer, Illinois (No. 062.067823)

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers

TECHNICAL EXPERIENCE

Representative U.S. and international experience includes:

- Cost estimating
- Quantum analysis
- Schedule development and review
- Constructability reviews
- Contract preparation and review
- Change order preparation and review
- Contractor and subcontractor management
- Process hazard analysis (PHA)
- Field construction supervision
- Litigation support including development of rebuttal analyses
- Deposition and subject matter expert reviews
- Process engineering, including process flow diagrams (PFDs), piping and instrumentation diagrams (P&IDs), equipment specifications, and hydraulic calculations
- Chemical, oil, gas, and biofuels project management from initial design through startup and operation



- Final project reconciliation including creation, execution, and closure of punch lists, and pre start-up safety review (PSSR) action items for both the owner and contactor
- Coordination with contractors and suppliers for warranty, material defects, and other claims for contract closeout
- Root cause analysis training including incredible chain of events links and fault tree analysis
- Development of assembly and disassembly manuals, operational guidelines, commissioning, and start-up documents

PROJECT EXPERIENCE

Mr. Bortz has over 25 years of project management experience, which includes cost and schedule preparation and analysis, constructability reviews, expert analyses, and litigation support. Representative projects include the following:

Oil & Gas Production Facilities

- Analyzed schedule and quantum of multiple subcontracts for an owner in relation to a substantial delay and disruption claim on a large international gas processing facility.
- Analyzed natural gas storage and compression facility engineering documents for a law firm representing the owner in a claim against an engineering firm for delays in construction and start up. Reviewed P&IDs, email correspondence, and met with owners and contractors to determine losses due to time delays incurred because of incomplete engineering documents.
- Analyzed and created a report for a natural gas facility in California after operational issues and damage occurred during start up. The review of the facility and engineering documents determined that the engineering firm was responsible for damages as a result of failure to follow standard industry engineering practices.
- Engineering Project Manager for three solar turbine compressor installations in North Dakota.
- Engineering Project Manager for outside block limits (OSBL) of a 70,000 BBL greenfield installation of a fractionation facility in Louisiana. Equipment included emergency flare, high pressure line pumps, pressure vessels, storage tanks, and all ancillary structures including foundations, pipe racks, and pipe supports.
- Engineering Manager assigned to oversee engineering efforts for the initial design of a 1,100-mile NGL pipeline to deliver natural gas liquids from the northeast region of the United States to a fractionation facility in Texas. Coordinated with the owner, engineering, and survey companies to create alignment sheets, and environmental documentation for a FERC filing for pipeline construction. Other responsibilities included schedule management, cost reporting, and change order creation and execution.
- Project Manager for a greenfield 40,000 bbl oil terminal facility in North Dakota. Designed a new delivery system and lease automatic custody transfer (LACT) skid to increase reliability and decrease maintenance costs.
- Project Manager for a greenfield NGL fractionation facility in North Dakota. Equipment included refrigeration, reciprocating compressors, hot oil system, towers, and storage.
- Project Manager for multiple natural gas compression and gas storage facilities.



Biofuels and Chemical Facilities

- Led a team to perform a comprehensive engineering review of a waste-to-energy facility constructed in California. The owners required the review of the existing system to determine if the construction of the equipment would be safe to operate prior to start up. Assisted in creating documents for use in claim proceedings that demonstrated deficiencies with the existing equipment.
- Developed initial process design, PFDs, P&IDs, and equipment datasheets for a wood-to-diesel facility constructed in Alabama to be brought online in Q3 2021.
- Lead Plant Engineer for design, construction, commissioning, punch lists, PSSR, and start-up of a proprietary biofuels facility in Mississippi. Facility included patented gasification technology along with proprietary design of the catalytic reactor.
- Assisted in the review of potential gasification vendors for the use in a proprietary process to create a high valued chemical from syngas.
- Led the review of potential pyrolysis equipment vendors for the replacement of a deficient unit. The review included travel to Germany to meet with the vendor and several operations where the equipment was in use. Also developed the cost analysis of the various vendors, including capital and long-term operational costs.
- Liaison for a U.S. management team during a turnaround and upgrade of a resin facility in Niort, France.
- Analyzed yearly maintenance and operations for potential savings by upgrading the existing boilers to the latest technology for a compound in New Mexico. Reviewed the costs for the existing boilers, which allowed the owner to proceed with the capital project and realize an annual savings of US\$1.2 million.

PROFESSIONAL EXPERIENCE

Long International, Inc.

Denver, Colorado Area (August 2018 to Present)

As a Senior Executive Consultant with Long International, Mr. Bortz provides claims preparation, construction contract and change order dispute analyses, schedule delay, disruption and acceleration analyses, cost and damages analyses, and arbitration/litigation support.

ENGlobal, U.S.A., Inc.

Broomfield, Colorado (June 2013 to February 2018)

Mr. Bortz served as Engineering and Senior Project Manager for a full-service engineering firm, which worked on a wide range of projects for all industries. Mr. Bortz was responsible for all phases of the projects including proposals, estimating, scheduling, cost reporting, and management of all engineering disciplines to complete multiple projects in the oil, gas, and chemical industries. Mr. Bortz also provided process engineering support for many of the projects including P&ID development and preparation of hydraulics and equipment specifications.

Harris Group, Inc.

Denver, Colorado (October 2010 to June 2013)

Mr. Bortz was Senior Project Manager and oversaw engineering projects primarily within the oil and gas industry. He managed multiple projects including compression stations, natural gas liquid fractionation facilities, tank battery facilities, and pipelines. He was the Lead Process Engineer and Project Manager for a



large oil terminal in North Dakota where he implemented a new design for a LACT skid that enabled the owner to realize savings through reduced equipment maintenance from fewer rotating pieces of equipment.

Range Fuels, Inc.

Broomfield, Colorado and Soperton, Georgia (January 2008 to November 2009)

As a Senior Project/Process Engineer, Mr. Bortz worked on all facets of the development of the Range Fuels biofuels process. He led the maintenance and project implementation at the demonstration facility (two ton per day of wood to ethanol processing) including installation of new process equipment, daily maintenance activities, and an array of other duties for the start-up company. He was also a Process Hazard Analysis Lead, who designed and implemented many facility process improvements.

Tronox, LLC.

Hamilton, Mississippi (June 2006 to January 2008)

Mr. Bortz was a Senior Process Engineer at the Hamilton titanium dioxide facility. He was responsible for potential process improvement reviews and cost savings throughout the facility. Mr. Bortz completed a facility wide material balance that netted over US\$1 million in annual savings by identifying control issues, raw material losses, and simple operational changes. Mr. Bortz also worked with the Savannah, Georgia facility to recover raw ore that could be utilized in the Hamilton, Mississippi facility, which further resulted in savings to the company. Along with his process engineering duties, Mr. Bortz was a Process Hazard Analysis Leader for the facility.

International Paper

Terre Haute, Indiana (September 2004 to June 2006)

As the Engineering and Maintenance Manager at the Terre Haute Paper Mill, Mr. Bortz was responsible for the maintenance department and the project engineers at the facility. He managed over 40 personnel including instrumentation and electrical technicians, millwrights, planners, and staff engineers. He was also a Project Manager for multiple projects including boiler upgrades, refiner installations, and press roll replacement.

Arizona Chemical (Subsidiary of International Paper)

Dover, Ohio (March 2000 to September 2004)

As a Capital Project Manager, Mr. Bortz managed multiple capital projects within the facility, including replacement of a wiped film evaporator, a site-wide safety shower installation, pre-reactor installation, and multiple storage tank upgrades. His projects responsibilities included the initial scope development, front-end engineering, budget and schedule preparation, final scope definition, detailed design, project approval, procurement, construction, punch lists, warranty claims, and startup.

Pearson Technologies of Mississippi, Inc.

Aberdeen, Mississippi (June 1997 to March 2000)

As the sole site engineer, Mr. Bortz reported directly to the owner and was responsible for all phases of design and construction of a brownfield biofuels facility. He worked directly with contractors to construct a unique 35 ton per day wood-to-ethanol facility. The facility was brought online in June 1998 and operated for three years.



Dow Chemical Company

Freeport, Texas (June 1991 to June 1997)

Mr. Bortz was Senior Production Engineer and oversaw the day-to-day operations and project management at the Vinyl Chloride/EDC plant and the Wastewater/Rotary Kiln facilities. His duties included daily operations management of several areas along with project management responsibilities for these facilities. At the wastewater treatment plant, Mr. Bortz was the on-site Project Supervisor responsible for the retrofitting of the aeration systems for four 2.0 million-gallon bioreactors. His responsibilities included contractor management, safety, production coordination to minimize plant interruptions, and the subsequent startup of the new aeration system. He also was the Process Engineer responsible for the conversion of multiple systems from simple single loop controls to Dow's proprietary Distributed Control System.

TESTIMONY EXPERIENCE

2018 Technical expert and employee/witness for ENGlobal as the former Engineering Manager. Wood to Energy Facility for Orthios. *Englobal vs. NASCO*. January 2018. Civil Action No. H-16-2746. *Deposition Testimony*.