

JOHN D. (JAKE) JOYE, PE

EDUCATION

BS Engineering Clemson University

PROFESSIONAL LICENSES

South Carolina P.E. Reg.#13573
Delaware P.E. Reg. #8805
Tennessee P.E. Reg #103861 - Inactive
Arkansas P.E. Reg. #8716
Texas P.E. Reg. #81212
Missouri P.E. Reg. #E-2765
Pressure & Process Piping/P2
North Carolina P.E. Reg. #8716

PRIMARY DESIGN EXPERIENCE

- Process Air - Heat, Cool, Humidity, Clean Rooms, etc.
- Utilities - Steam, Refrigeration Compressed Air, etc.
- HVAC - Industrial & Heavy Commercial

SIGNIFICANT DESIGN EXPERIENCE

- Chemical Process
- Rotating Equipment
- Process Instrumentation
- Custom Air Handlers
- Material Handling
- General Offices

INDUSTRIES COVERED BY EXPERIENCE

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| <ul style="list-style-type: none">• Synthetic Fibers• Aluminum• Clean Rooms• Textiles• Shutdown• Mining• General Manufacturing | <ul style="list-style-type: none">• Chemical• Machinery• Non Woven Fabrics• Plastic Film• Electronics• Pharmaceutical• Biotech |
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SUMMARY OF EXPERIENCE

Mr. Joye's experience includes, lead engineer roles on projects ranging in size from hundreds of millions of dollars down to \$10,000.00, covering a variety of heavy industrial, pharmaceutical, biotech and commercial manufacturing. Included are dozens of smaller projects covering engineering evaluations, high temperature oven air reduction savings, standard office HVAC, churches, office buildings, produce cooling, etc.

CAREER HISTORY

CIBA Vision - Atlanta, GA. - Design of modifications to compressed air system which included installation of new 700 hp centrifugal compressors and screw compressors.

MWMB - Clarksville, Tennessee - Lead engineer for new 80 million dollar fiberglass plant which included 250,000 cfm of quench process air along with HVAC for the support facilities. This included specifications and sequence for using total heat recovery of the return air system to save more than one million dollars per year of operating costs. This included 12,000 square feet of office space which included cafeteria areas.

CIBA Vision - Atlanta, GA - Design of system to modify the existing air handling system to automatically remove toxic fumes and control air plant pressurization.

GlaxoSmithKline - Raleigh, NC - Design of all HVAC/Utilities for RCII Virology Lab. This included bio-safety cabinets, fume hoods, gas piping, etc. Included design of the controls systems for maintaining pressurization for the laboratory with three phases of containment.

ChemCodes - Durham, NC - Design of installation of a research lab in an existing building. This involved installation of new air supply systems along with control of pressurization with variations in flow from fume hoods and robots. There was a NMR area and multiply mass spec units.

PACTIV North America - Candaugua, NY - Design of all HVAC/Utilities systems for five plants which produce food packaging products. This includes compressed air, room pressurization and filtration along with compressed air, chilled water, etc.

GlaxoSmithKline - Raleigh, NC - Design of all HVAC systems for High Through-put Biology Laboratory. This included bio-safety cabinets, fume hoods etc. Included design of the controls systems for maintaining pressurization for the laboratory and air lock systems.

FUJI Film - Greenwood, SC

Mechanical Lead Engineer for installation of an air washer system for a metallic web process. This included HEPA filtration of all air supplied to the web path.

GlaxoSmithKline - Raleigh, NC

Mechanical Lead Engineer for design on new high thru-put biology laboratory which included specialty areas such as biological safety cabinets and required control system design for pressurization with measurement of total air flow into and out of all critical areas. This included all other support functions such as laboratory gases.

PACTIV - Plymouth, Indiana Heated Curing Chamber For Foam Products June 2003

Lead engineer for the Process Air design for a heated curing chamber, which requires maintaining plus or minus two-degree temperature tolerances within a 40,000 square foot warehouse and within the storage pallets. The design incorporated use of heat recovery from a RTO to reduce cost. Savings amounted to over one hundred thousand dollars per year in operating costs in addition to providing an improved product.

Siemens Westinghouse Turbine - Charlotte, NC - Mechanical Lead Engineer for redesign of entire plant HVAC systems including dust collection and process air systems for turbine manufacturing plant. This included preparing a presentation for corporate approval for funding a 10 million dollar project with cost estimate and justification for cost savings.

Bethlehem Steel - Lead Engineer for design changes to provide for pressurization control of electronic drive cabinets. This required the complete redesign of the original HVAC systems and addition of a chilled water cooling system without interruption to production. I completed the design drawings on a laptop in the field and personally supervised all construction efforts including the instrumentation sequence changes and design.

Thomson Electronics - Lead Process Engineer for 70 million new television tube manufacturing plant in Mexicali, Mexico. This included clean room manufacturing and all site HVAC systems. This is the largest plant of its type in North America. Responsible for all budgets and installed costs of projects until the project is accepted by the customer. HVAC comprises 9.6 million of total install budget.

IBM - Fishkill, NY - Mechanical Lead Engineer for HVAC/Clean Rooms design for multiple projects on the Fishkill site. Responsible for all budgets and installed costs of projects until the project is accepted by the customer.

ALCOA Alliance - US Smelter Operations - Mechanical Lead Engineer for multi-projects group which designed and assisted in start-up of projects which vary from 100 thousand to 16 million dollars. Responsible for all budgets and installed costs of projects until the project is accepted by the customer. This includes air permits to meet government standards.

Kodak Offshore, Kodak Asia, Xiamen China - Engineering Manager for Process Air and HVAC Lead Engineer for a 350 million-dollar photographic paper coating plant. This required design of over fifty (50) different air systems including film conveying and film drying systems. Acted as

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engineering manager for all functions based in Greenville which included structural, piping, HVAC, process air, instrumentation and electrical.

DuPont Fibers, Kinston, NC - Y-5/6 Expansion - Process Air/Utilities Lead Engineer and engineer of record for polyester expansion. This included 6,000 tons refrigeration; 70,000 PPH steam; 22,000 SCFM compressed air and 350,000 CFM of process air system. The powerhouse was completely automated.

DuPont Fibers (BCF), Seaford, DE Spinning Machine 30 & 31 Rebuild - Lead Engineer for all Process Air/Refrigeration systems involved with rebuild of two carpet fiber spinning machines. This included system design calculations and equipment specifications for air handling systems and installation of a new refrigeration machine.

DuPont Fibers, Waynesboro, VA - Lycra Production Expansion - Lead engineer for the Process Air/Utilities/ HVAC design. Personally directed all design activities for 20 million dollars of systems including an air compressor addition, two 1500-ton refrigeration machines for the powerhouse and two 250-ton low temperature process refrigeration machines.

PATENTS

- Assigned United States patent #4,810,268 on blow-thru air washer.
- Three patent applications on roll crusher design.