



FRANK R. BROWN III

Senior Chemical Process Engineer

EDUCATION:

Massachusetts Institute of Technology B.S. Chemical Engineering
West Virginia University Graduate Studies
New Jersey Institute of Technology Graduate Studies

EXPERIENCE:

Process Engineer

The Experts Inc.

Jul 06-Nov 06

For Mustang Engineering Inc., Tampa, FL Worked on FEED for Ruwais Refinery Abu Dhabi, UAE. Designed Hydrogen Purification Unit (PSA), Designed Amine unit (MDEA) using BR&E **ProMax** process simulator. Sized towers, drums, and major process and utility lines. Specified pumps and heat exchangers.

Process Engineer

RTX Inc.

Sep 00-Dec 00

For Veco Pacific, Bellingham, WA worked on Pressure Safety Valve Audit for Equilon, (Puget Sound Refining Company) Anacortes, WA. The project reviewed the pressure safety valve calculations done by another company. My contribution was assessment, simulation, and calculation of hydrocarbon flows and properties from the refinery data.

Process Engineer

Technical Associates Company Inc.

Mar 98-Oct 98

For Brown & Root Energy Services, Houston worked on design of Utilities for Malampaya Offshore platform design for Shell E & P . My contributions were 1) The simulation on **Hysys** showed valves at points there were no valves on the proposed PFD, 2) First to realize head requirement on methanol column required placing it on a different deck, 3) Corrected methanol extraction column to show only one interface for continuous/dispersed phase flows not two, and 4) Assisted in planning control scheme for auto refrigeration and condensation of NGL

Process Engineer

Taylor Technical Inc.

Nov 97-Dec 97

For Onyx Engineering at Lyondell-Citgo Refinery, Houston Continued to prepared Process Safety Information Performed process flow calculations using SimSci **ProII** Compiled required equipment information Documented Pressure Safety Relief Valve calculations Extensive use of Networked Computers using Microsoft Excel, Access, and Word on Windows 95. Efforts brought job to successful conclusion.

Process Engineer

Technical Associates Company Inc

Jul 97-Sep 97

For Stone & Webster Engineering Company, Houston prepared process designs for Propane/Ethylene refrigeration systems for four Ethylene plant proposals. Designs were prepared using Sim Sci's **PRO/II**

Process Engineer

Onyx Engineering, Inc.

May 96-May 97

Prepared Process Safety Information for Lyondell Citgo Refinery, Pasadena, TX as part of OSHA 1910.109 Process Safety Management Performed process flow calculations using SimSci **ProII** Compiled required equipment information Documented Pressure Safety Relief Valve calculations Extensive use of Networked Computers using Microsoft Excel, Access, and Word on Windows 95.

Senior Chemical Engineer

Onsite*Offsite, Inc.

Nov 92-Feb 95

Involved in commercialization of the *Thermochemical Environmental Energy System*, a licensed process for the catalytic destruction of hazardous organic waste in water solution. Process designed, built and tested a 120 gal/day demonstration unit. Designed 10,000 gal/day unit. Details involved catalytic fixed bed reactor design, heat exchanger rating and vapor-liquid separator design.

Prepared Process designs and estimates for various clients. Performed small projects for ARCO Products Co.

Senior Project Engineer

Robert Brown Engineers

Jan 89-Jan 92

Responsible for Engineering Refinery for Sunbelt Refining Company, AZ. Engineered Crude and Vacuum Units and Offsites.

Designed and Engineered Naphtha Stabilizer for Huntway Refining Co., CA. using **Hysim**

Assisted in and reviewed HAZOP of changes to Chevron Gas Plant, Gaviota and prestart-up of Exxon Santa Ynez Unit as Technical Consultant for County of Santa Barbara.

Project Manager

Onsite*Offsite, Inc.

Sep 86-Jul 87

Managed field survey of 4000+ Safety Relief Valves, Tank Vents and Rupture Disks for ARCO Products Co., Watson Refinery. Project involved design of computer database, Valve Inspection, Data Analysis and Entry, and installation of Identification Tags. Scheduled work and reported progress weekly.

Project Manager

E&L Engineering, Inc.

Feb 83-Jun 86

Managed and engineered production improvement revamp projects for ARCO, Shell, Texaco, and Ultramar Refineries. Managed preparation of process design package and cost of construction estimate for Mid Cat Gasoline Splitter for Golden West Refinery. Designed Sour Water Stripper, Propane Recovery Tower and Facilities. Used output from process design simulators (Chemshare's **Design II** & Simulation Science's **Pro II**) for design studies on a routine basis.

Senior Project Engineer

ARCO International Oil & Gas Co.

Feb 80-Dec 82

Engineer on \$50 Million expansion of offshore oil and gas production platform in Java Sea, Indonesia. Approved design and specifications as resident in Contractors Office.

Principal Project Engineer on above ground facilities, open pit coalmine for Curragh Queensland Mining Limited Brisbane, Australia. Wrote and negotiated contracts for town construction and large BE Dragline construction facilities.

Senior Project Engineer

The Ben Holt Company

Sep 78-Oct 79

Project Engineer on Light Ends Recovery Unit (LPG), and Caustic Treating Unit, Bakersfield CA. Managed project during extensive absence of Project Manager.

Project Engineer on \$4M Offsite and Utilities in major expansion for Beacon Oil Refinery in Hanford, CA. Both projects included coordination of Civil, Structural, Piping, Instrumentation, and Electrical Design. Extensive client contact and field construction interface.

Senior Project Engineer

Procon Inc.

Aug 76-Sep 78

Process designed Crude Oil Distillation Unit. Design involved feed preparation, optimizing heat exchange/recovery to minimize fired heater cost, setting distillation tower height, diameter, number of trays, arrangement of internals (downcomers, draws, and distributors).

Project Engineering consisted of sizing, selection, and rating of mechanical equipment such as heat exchangers, air fin coolers, and pumps.

Engineered revamp of two 10,000 BPSD crude oil distillation units.

Managed engineering design of 3.2million gallon/day Reverse Osmosis Seawater Desalination Plant at Jeddah , Saudi Arabia for Fluid Systems. Acting Project Manager during absence of Project Manager.

Process Engineer on six-month foreign assignment in Bataan, Philippines to participate in engineering survey of fertilizer manufacturing complex. Plant produced Ammonia, Urea, Sulfuric Acid, Phosphoric Acid, and compounded phosphate and sulfate fertilizers.

Project Engineer

Ralph M. Parsons Company

Oct 73-Jul 76

Responsible for engineering design and schedule on MEA Regeneration, Sour Water Stripper, Claus Sulfur Recovery and Tail Gas Treatment Units for Dow Chemical Refinery. Duties included client liaison, requisitions, bid analysis, vendor drawings, and engineering drawings.

Project Engineer on criteria development, conceptual engineering design, equipment specification for gas compression, pipeline system and Natural Gas Liquids Fractionation Unit for Iran.

Project Engineer

J. F. Pritchard Co

Jan 72-Sep 73

Prepared P&ID's. Specified equipment, evaluated quotations, selected equipment, and wrote subcontracts. Projects were Sour Water Strippers, Sulfur Recovery (Claus Process) and two Tail Gas Treatment Units (Stretford Process). Served as Proposal Manager on several Unit Proposals.

Senior Chemical Engineer

C F Braun & Co

Aug 69-Mar 71

Prepared Material and Heat Balances for petroleum and petrochemical plants. Prepared process flow and P&ID's. Sized process and utility lines, estimated pump heads, and driver horse powers, set vessel heights, calculated design and operating pressure and temperature profiles, sized control valves and pressure safety valves. Prepared process design criteria for three Sulfuric Acid Plants. Wrote a computer program to size two-phase process lines using Braun's proprietary correlations.

Process Design Engineer on Hydrogen Plant in Amsterdam, N.V. Sized and prepared process specifications for steam-hydrocarbon reforming furnace, catalytic reactors, heat exchangers, and hydrogen gas compressor.

Production Engineer

Fine Organics Inc.

Oct 67-Jun 69

In Charge of in-plant process and product quality improvement. Processes were bromination reactions and amidation of fatty acids. Studies resulted in 10% decrease in raw materials required, a 33% increase in batch size, a decrease of in process inventory, and a decrease in operating labor. Other projects were Plant Safety evaluation, Optimum scheduling of production batches and raw materials. Assisted in inventory control. Trained and Supervised chemical operators on new processes and equipment.

Process Development Engineer

S.B. Penick & Co.

Jun 65-Jun 67

Involved in process development, both exploration and optimization of organic synthesis. Used statistically designed experiments and regression analysis to correlate data and derive modeling equations. Processes were hydrogenation, amination, carboxylation, acetylation, acetic acid recovery and crystallization.

Economically evaluated and justified process proposals based on capital and manufacturing cost estimates.

Military Service

United States Army

Feb 62-Jan 64

Paratrooper, **82nd Airborne** Division
Fort Bragg, NC

Honorable Discharge

Process Engineer

GAF Corporation

Jul 60-Sep 61

Wrote the start-up and operating manuals and trained operators in four (4) chemical unit start-ups. Evaluated fixed bed reactor catalysts for activity in a production operation. Processes involved acetylene, formaldehyde, butynediol, butanediol, butyrolactone, pyrrolidone, N-Methyl Pyrrolidone and vinyl pyrrolidone.

MISCELLANEOUS

American Institute of Chemical Engineers – Life Member

Mensa -- Member 25+ years

National Speleological Society – Member 35+ years

Licensed Private Pilot Single Engine Land

Airplane Owners and Pilots Association – Member

82nd Airborne Division Association – Life Member