

Eric H. Coffin Registered Professional Engineer
7020 Hanover Court Lakewood Ranch, Fla. 34202
Cell Phone (727) 742-7276 Email: EricCoffinEngineer@Gmail.Com

Summary: Senior Mechanical / Process Engineer with 38 years of increasingly responsible experience in cost-effectively solving unique and complex engineering / production / energy problems in residential, industrial, commercial and utility environments. Experience has grown from design, engineering, procurement, coordination, supervision, management, and direction. Worked on more than 115 mechanical, electrical, civil, industrial, and chemical engineering projects in 19 states and seven countries with construction costs totaling over \$12,000,000,000. High level of expertise in: option development, power generation, energy usage & analysis, training, teaching PE classes, system planning, process control, financial analysis, engineering methods, computer simulation, static & dynamic modeling of processes, forecasting techniques, team leadership, and construction supervision. Viewed by many as a natural born leader and have been put, voted, promoted, or placed in management positions many times over the years.

Certifications:

Registered Professional Engineer – Florida
NCEES – National PE Record – USA
Certified Energy Manager – Worldwide
Continuing Education Provider – 39 States

2011 – 2014 Senior Process Engineer Jacobs Engineering, Inc. Lakeland, FL.

Performed energy and material balance on the new OCP ODI P1 site which involved nine months of computer model development and coordination with five different operating units and 27 engineers in two countries. Lead the steam balance, energy balance, and material balance for a net new 4,200 Sulfuric Acid plant for the Jorf, Morocco site. Process lead on the development of the financial model for the Fosfatos del Pacifico phosphate Project in Peru. Process engineer leader on the new sulfur melter for Mosaic. Process engineer coordinator for the proposed phosphate plant in Tunisia.

2008 – Present Owner of Green Energy Engineering, Inc.; Lakewood Ranch, FL

Incorporated Green Energy Engineering, Inc., to offer Green Energy Solutions that can reduce the amount and cost of purchased energy and carbon footprint by developing innovative projects using a working knowledge of money, energy, thermodynamics, fluid flow, process controls, boilers, cogeneration, and fuels. Teacher and trainer in both engineering methods and financial aspects of energy reduction that include air conditioner efficiency, wall, floor, and roof insulation, water heater fuels and efficiency and alternative fuels. Spoken, taught, and provided certified energy and economic training in over 100 live seminars throughout Florida and Southern States. Approved in 39 States and two territories to provide professional engineer continuing education classes. Trained hundreds of engineers Worldwide through the sales and use of DVDs that are sold from the www.GEEintl.com website. Conducted 100s of energy audits in all types of buildings and plants including commercial warehouse, schools, high-rise office towers, college campus, oil refiners, chemical plants, pulp mills, libraries, jails, courthouse, etc. Before a project is defined it must be conceived from thin air or invented by viewing an existing operation. This vision casting – which I have done many times, takes experience, confidence, and leadership.

2005 – 2008 Mustang Tampa, Inc. : / Pegasus TSI, Inc.; Tampa, FL

Managed projects and / or system analysis of energy, power, steam, and boiler projects throughout the world, involving steam balance work, boiler controls, and utility equipment optimization. Managed the steam balance effort by leading a team of plant personnel (I had just met these people in the Saudi Arabia plant) over a three-month period that included; unit managers, maintenance managers, engineers, designers, and the plant manager. This was a classic example of leading from below also known as managing up the organization. Financial studies of client options, projects, or methods within projects for chemical, pulp and paper, oil refinery, natural gas, fertilizer, and power plants.

2001 – 2005 Engineering Matrix, Inc.; St. Petersburg, FL

Named Project Manager on \$6,000,000 chiller addition at the University of South Florida by Engineering Matrix owner Mr. Stan Newton. Because of the size, importance, and prestige of working at the university, Stan had always managed the USF projects personally until this addition. Managed sub-consultants including architects; civil, structural, mechanical, electrical, and plumbing engineers. Served as the primary contact with the university who hired Matrix. Matrix in turn hired the Architects and others who were all under my leadership for this engineering and construction project. The university then hired the General Contractor, who they placed under my leadership for all procurement and construction. Performed and wrote investment-grade energy analysis reports based on computer models for third-party performance contracting investment firms.

1994 – 2001 Owner of Energy Generation Solutions, Inc.; St. Petersburg, FL

Worked directly as Chief Engineer with clients and owners regarding the financial attractiveness and engineering feasibility of various energy savings options. Advised other engineers on possible solutions, methods, and resources for solving complicated engineering and system analysis problems. Performed months of engineering and financial work for Disney World in how to have a green park by creating refuse derived fuel for sale to Lakeland Electric and sale of metals to local dealers. Worked for shareholders of Entec Engine Corporation on the testing of a novel internal combustion engine after the inventor suddenly died of a heart attack.

1984 – 1994 Florida Power Corporation; St. Petersburg, FL

Project Engineer for alternative fuel project for phosphate company in central Florida. This work involved field supervision of the general contractor and sub-contractors involved in forms, concrete, structural steel, vessel fabrication, equipment setting, burner modifications, piping, electrical conduit, controls, startup, and operator training.

Load Management analysis supervisor who created field testing methods and computer analysis software for confirming the kilowatt and kilowatt-hour savings associated with the world's largest residential (500,000 homes) load management program. Supervised five engineers in the creation of computer software. This included high-level software approach, data analysis, statistical equations, and interface with the substation group. Managed payroll and wrote performance reviews for these young engineers.

System Planning Senior Engineer conducted a number of reliability and financial studies of power generating options using the TIGER reliability software, PRO-MOD production costing model, and PRO-SCREEN corporate financial model. Conducted studies including: new transmission line into central Florida from Georgia; new generating units at several plant locations; 40-year fuel studies; truck, pipeline, and barge delivery of fuel oil for several plant sites; and conversion of some units to burn natural gas.

Managed the instrument and control and heavy electrical design of the Debary Peaker site addition through the engineer of record Black and Veatch. This included substation, transmission, railway, tank farm, pipeline, and control room modifications. Of most importance was the coordination of Debary as the "Black Start" site in the event of an entire Florida Power System failure or State of Florida electric grid failure. This coordination included system planning, energy control, and the transmission groups.

Managed the electrical as well as the instrument and controls portion of the Intersession City Peaker addition through the engineer of record Black and Veatch. This involved constructing a new control room and developing a cost-effective interface between the old control room and the new larger control room half a mile away. Heavily involved in the new fuel oil pipeline and tank rules propagated by the State of Florida at the time that required double wall containment.

Project Manager for 40 MW University of Florida cogeneration plant. As project manager spent two years traveling to Gainesville to negotiate the power and steam sale agreements with the corporate hired attorney. Managed the engineering contract with Hartford, Conn. based engineering firm Energy Services, Inc. who

was retained as the engineer of record. Directed all aspects of plant layout, flowsheet development, equipment selection, and detailed engineering. Negotiated large procurement specification and contracts for items such as; the gas turbine generator, heat recovery steam generator, water treatment system, switchgear, natural gas compressor skid, and feed water pumps. Heavy involvement with the Environmental group and supervision of the outside environmental firm KBN with regards to water, air and site use permits. Interfaced with the substation group and transmission group for step-up transformer, relay design, and load flow studies. Managed the \$43,000,000 engineering and procurement budget. Was the on-site project engineer during construction.

1979 – 1984 Procter & Gamble Company; Cincinnati, OH

Senior Process Control Engineer responsible for developing analog control schemes for various thermal equipment including boilers, steam turbines, gas turbines, chillers, compressed air systems, cooling towers, water treatment equipment, steam distribution systems, and plant utilities. Selected by engineering director to field train new engineers in boiler work. This included all aspects of plant visits, safety, boiler training, and controls training. Of most importance was burner management (combustion safe-guards check out) and control system calibration and tuning. Experienced with conventional power generation and co-generation cycles while burning a variety of fuels including: natural gas, off-quality gas, chunk coal, pulverized coal, sawdust, industrial wood waste, #2 oil, and #6 oil. Developed control schemes for various firing methods include traveling grate, suspension, air atomization, steam atomization, fluidized bed, gasifier, and piled bed. Investigated feasibility of drying paper with combustion turbine exhaust. Project involved cutting-edge computer simulations using Cray Super computers at the Massachusetts Institute of Technology (MIT), and culminating in a \$150,000,000 project for a paper plant in Pennsylvania.

Managed five other process control engineers and a \$3,000,000 budget during the engineering phase of a Mehoopany, Pennsylvania, pulp and paper plant energy project. This included the electrical work up through the 5kV system, programmable logic controllers, (PLC), ductwork design, as well as all electrical, instrument and control design. This involved the application of a gas turbine to the hot air-drying system and studies of the static and dynamic behavior of a 3,000-foot-long hot air duct coupled to six independently operating paper machines.

Education:

Bachelor of Science Mechanical Engineering – University of South Florida - 1978

Graduate work in Mechanical Engineering, specialty in Process Control, USF

Graduate work towards Master's in Business Administration, Xavier University

1985 - Present community, church, and professional activities; St. Petersburg, FL.

- Selected by peers and served as foreman on three trial juries.
- Served on LCC Day School board for five years
- Part of three-person management team for the \$1,800,000 Day School office, library, art, music addition
- Project manager for the \$1,300,000 NEPC office and theater addition.
- Captain of the 3,000 home Old Northeast Crime Watch organizations.
- Leader of men's breakfast at church for six years
- Leader of many church work days and/or church maintenance projects
- Invited by State Senator Dennis Jones to participate in the State of Florida "Energy Policy". This involved many meetings, reading, and writing with other Florida political leaders and stakeholders in crafting a fair and balanced "Energy Policy".
- Currently serve on the Florida State-wide 12 member energy subcommittee for the Florida Engineering Society. We review energy usage, follow federal and state proposed legislation and write position papers for the Tallahassee legislation, and the Florida Public Service Commission. Our goal is to improve efficiency and reduce the state's carbon footprint.

Continuing Education:

Foxboro Boiler Control School
Honeywell TDC 2000 Control System Project Engineering School
Massachusetts Institute of Technology, "System Modeling and Computer Simulation"
Procter & Gamble "Engineering Economics"
Procter & Gamble "Use of Capital"
Massachusetts Institute of Technology, "Mathematical System Analysis of Air/Gas System Dynamics of Fossil Fuel Power Plants"
Trane, Trace 700 Energy Analysis Software
Engineered Software, Pipe-Flo hydraulic software.
Allen-Bradley PLC Training
SETCON Real time computing school

Memberships:

Florida Engineering Society
Association of Energy Engineers
American Institute of Chemical Engineers
National Society of Professional Engineers
American Society of Mechanical Engineers

Publications:

"Cost Optimized Pumping in the Phosphate Industry" was a formal paper and PowerPoint talk given at the June 12, 2010 Clearwater Phosphate Conference.

"Cost optimized phosphate pumping systems" was a two-page summary of my 2010 Clearwater paper that appeared in the November 2011 issue of Fertilizer International.

"Alternative Energy and Fuels" was a formal paper and PowerPoint talk given at the June 10 – 11, 2011 Clearwater Phosphate Conference.

"Energy Cost Comparison of Alternative Fuels" appeared in the April 2013 Florida Engineering Society Journal that was devoted to "Energy – Global Challenge, Local Opportunity."

"Energy Efficiency – The 5th Fuel" appeared in the January 2018 Florida Engineering Society Journal that was devoted to Energy.

"Energy Efficiency – The 5th Fuel – At Home and in the Work Place" was a formal paper and PowerPoint talk given at the June 8 – 9, 2018 Clearwater Phosphate Conference.