

BRIAN D. SWARTZ

6038 Sharon Hills Road * Charlotte, NC 28210 * (515) 868-6601 * briandswartz@msn.com

Summary:

Experienced chemical engineer with a background in operations management, project management, process engineering, and compliance looking to join an organization in a role as a technical expert. Skilled at troubleshooting, analyzing data, and improving processes, equipment, and management systems in the lithium, fuel ethanol, soybean oil solvent extraction, and nutraceutical production industries.

Core Competencies:

- ❖ Data Analysis
- ❖ Project Management
- ❖ Capital Management
- ❖ Process Optimization and Improvement
- ❖ Operations Management
- ❖ Process Safety Management Compliance
- ❖ Management System Development
- ❖ Health and Safety Compliance and Auditing
- ❖ Unit Operation Performance Measurement
- ❖ Incident Investigation
- ❖ Operations Training and Development

Employment

FMC

Engineering Manager

Bessemer City, NC

November 2014 – 2018

Managed a multi-discipline, centralized, engineering department serving Lithium based metal production, specialty organics, and inorganic salts processes. The engineering team consisted of subject matter experts in design engineering, reliability engineering, process controls, project management, and construction management.

- Facility Capital Portfolio Manager– Managed allocation of the project and capital resources for the facility.
 - Managed the allocation and performance tracking process for an annual capital budget of \$8.5 MM.
 - Established a staged gate process for progression of capital projects from idea to implementation.
 - Was able to reduce the portfolio of “current” project by two-thirds in order to concentrate resources to highest priority projects.
 - Worked with site Operations teams to develop a 5 year capital plan and coordinated with Divisional Stakeholders to ensure capital resources were being allocated to the highest priority projects.
 - Facilitated an engineering study to measure and quantify process building conditions
 - Developed a capital deployment process for site projects based on corporate capital deployment standards; re-instituted site capital controls to support the deployment process.
- Project Manager – Managed a cross-functional project team that designed and executed a project to provide a sealing system to the lithium hydroxide finished project dryer.
- Divisional Technology Roadmap - Part of a team that was charged with developing the Lithium Division Technology Roadmap for the next 7-10 years. Worked with a team consisting of Process Technology, Research and Development, and Sales and Marketing

representatives from the Worldwide Lithium Group to develop a technology roadmap that will be presented to the Lithium Senior Leadership Team.

Lincolnway Energy LLC

Ames, IA

Project/Process Engineer

April 2012 – May 2014

Engineer accountable for all process and project engineering for a 50 million gallon per year fuel ethanol facility. Performed economic analysis, managed capital budgets, performed process engineering, and managed implementation for all site projects. Measured and optimized the performance of unit operations when needed based on the facility needs.

- Project Manager for Plant Energy Source Conversion – Coordinated cross-functional team (Engineering, Compliance, Operations, Construction, Accounting,) to develop vision and strategy to convert the fuel mix for facility steam generating systems. Built economic models using discounted cash flows in Microsoft Excel for a new natural gas boiler and a converted coal-to-biomass boiler.
 - Analyzed true cost of ownership for coal boiler operation by compiling historical cost accounting data into Microsoft Excel
 - Analyzed fuel markets in order to project future fuel costs using a variety of information sources (supplier agreements, Energy Information Agency (EIA) fuel cost projections, NYMEX futures contracts, etc.)
 - Built economic model of the possible alternatives including a full economic analysis with discounted cash flows using Microsoft Excel. Created dynamic models that could easily be updated based on fuel market fluctuations and performed sensitivity analysis on key value drivers (fuel and capital cost) using Excel Data Tables
 - Identified and quantified potential risks and developed risk mitigation plans for key project risks.
 - Presented viable alternatives and recommendations to Board of Directors, Chief Executive Officer (CEO), Chief Financial Officer (CFO), and Plant Manager
 - Acted as Project Manager for the two main projects resulting from the analysis.
- Bio-mass Boiler Project Manager - Managed inter-organizational project partnership between Lincolnway Energy and DuPont to design and convert a bubbling fluidized bed coal boiler to a 100% biomass boiler.
 - Coordinated the efforts of the functional groups (Engineering, Compliance, Operations, Construction, Accounting, and Marketing) to commence operation of a 100% biomass fueled process boiler by 2015.
- Natural Gas Boiler Project Manager - Managed project for a new 185,000 lb/hr natural gas boiler. Worked with Engineering, Procurement, and Construction contractor to perform process engineering, develop equipment specifications, procure equipment, and coordinate the project timeline to correspond with the completion of a natural gas supply pipe to the facility in the Fall of 2014
- Project Manager Responsible for Strategic Direction – Coordinated the efforts of the functional groups (Engineering, Compliance, Operations, Quality Assurance, and Marketing) to develop a step-by-step execution plan to convert facility product mix to achieve Lincolnway Energy Board of Directors' Strategic Vision. Managed R&D activities needed for designing and testing of new processes to produce desired products.
- Process Engineering - Developed systems to collect operations data used in a quantitative model to evaluate and optimize fermentation performance.
 - Collected operational data from plant database by importing data into Excel.
 - Analyzed operational data using Excel Data Analysis tools (regression and multiple regression)

- As part of the operation performance measurement model, developed innovative ways to increase the reliability of results by creating new independent variables using existing data.
- Recommended operational changes and used the model to statistically evaluate fermentation performance; increasing corn-to-ethanol yields by approximately 5%.
- Developed system to measure the evaporation unit operation for residual fermentation solubles using available process data. Was able to apply principles of heat transfer to quantify heat exchanger fouling factors in order to measure and predict operational performance. Converted from a preventative maintenance strategy to a predictive maintenance strategy for clean-in-place operations.
- Fuel Storage and Loadout Project Manager - Performed process engineering for a new fuel blending, storage, and loadout facility.

Flint Hills Resources

Menlo, IA

Plant Manager

March 2011 – March 2012

Facility leader accountable for all site operations in a 100 million gallon per year fuel ethanol production facility. Led a team of 6 direct and approximately 50 indirect reports.

- Led the Site Leadership Team to develop a facility vision and plans to improve areas such as safety, environmental compliance, production performance, and process reliability.
- Built management team and achieved full staffing levels in all departments
- Developed training plan for new employees.
- Re-designed Site Leadership Team meeting agenda to increase team participation in facility priorities.

Process Engineer

April 2007 – March 2011

Provided process engineering technical expertise for a 100 million gallon per year fuel ethanol facility.

- Member of a management team in charge of starting up a newly-built 100 million gallon per year ethanol facility.
 - Created training curriculum and training materials used to prepare a group of 35 newly-hired employees to start up and operate a 100 million gallon per year dry-grind ethanol facility.
 - Trained operations group how to recognize and troubleshoot key operation issues
 - Coached operations personnel through the start-up of a new plant.
- Team member for the design of experiment to compare competing enzymes used in breaking corn into sugar for ethanol production.
- Optimized unit operations including daily optimization of saccharification, fermentation, distillation, anaerobic digesters, and ethanol dehydration performance.
 - Maintained location fermentation Microsoft Excel datasheet; reports primarily based on AVERAGE, STDEV, and VLOOKUP functions
 - Worked with yeast and enzyme suppliers to help formulate recommendations for plant management in order to maximize fermentation performance.
 - Decreased residual sugars and DDGS starches and increased the reliability of the fermentation unit operation.

- Championed and participated in early validation of Process Hazard Analysis based on analysis of risk profile of a new owner.
- Managed process improvements with a focus on increased throughput, reliability, and decreased processing costs including a significant project to upgrade Energy Center safety and reliability systems as a regional project. Engaged subject matter experts to solve various equipment reliability problems in the distillation area and managed projects to implement the designs.
- Created company-wide written management system policies for process safety compliance under OSHA 29 CFR 1910.119 (Process Safety Management).
- Managed safety compliance programs for a dry-grind ethanol facility on an interim basis

Cargill, Inc.

Des Moines, IA

Production Manager

February 2001 – April 2007

Managed a team of production and engineering professionals at a soybean oil solvent extraction facility. Managed two direct-report production supervisors with 20 indirect report.

- Patent Valuation – Created a value for potential purchase of a patented process. Performed cash flow analysis using P&L historical data and a marketing analysis to project future revenues. Determined patent value by using a Microsoft Excel spreadsheet that reported expected yearly cash flows. Performed sensitivity analysis of key cash flow drivers using Excel Data Tables to help decision makers make an informed purchasing decision.
- Statistical Model Development - Developed a statistical model in Microsoft Excel for better product quality and yield optimization. Built the model by using historical operational data including process mean and standard deviation of finished product characteristics. Also collected and analyzed customer data and quantified customer behavior to include in the model. Recommended new targets for moisture control of soybean meal. Model was used as the basis for new business unit best practice to maximize product yield.
- Six Sigma Site Representative – Designated as the location Six Sigma representative. Attended 40 hrs Green Belt Training. Participated with Business Unit Six Sigma Black Belt on finished product moisture control project.
- Created process equipment maintenance history tracking database using Microsoft Access. Created data input forms to aid maintenance personnel in populating the database with operations data.
- Optimized key energy demand unit operations. Imported operational data from plant database into an Excel spreadsheet to build a unit operation performance measurement model that quantified process variability (i.e. standard deviation). Designed and tested new control strategies and analyzed process performance using the Excel model created. Recommended and implemented new process targets and control strategies resulting in sustained 8% decrease in energy usage.
- Implemented significant improvements to training and process safety management systems. Implemented a more robust process for certification in all operational areas of the plant including emphasizing the source for key procedural steps, adding a personal certification step in the process, and rewriting all procedures to attain compliance and reflect current best practices.
- Performed cost and benefit analysis of potential projects, and proposed projects based on process needs (customer, cost, reliability, etc.). Managed capital project budgets of up to \$5 million annually.
- Obtained Certified Maintenance and Reliability Professional (CMRP) designation from Society for Maintenance and Reliability Professionals. Was involved from the

operations side in the implementation of a variety of predictive maintenance technologies including vibration, infrared (mechanical and electrical), motor circuit evaluation, and oil analysis.

- Created and documented instrumentation standards for facility. Worked with a preferred supplier to develop a comprehensive document to aid purchasing engineers in procurement of instrumentation and process communication equipment that met current business unit best practices.
- Managed all OSHA required safety compliance programs from facility management systems to facility general conditions. Oversaw all Process Safety and Risk Management Systems (including OSHA Process Safety Management under 29 CFR 1910.119). Modified most PSM policies and procedures to reflect current OSHA audit guidelines. Developed a PSM training program for the location aimed at operations technician and developed a PSM training program aimed at new supervisory staff. Presented PSM training to all new supervisors in North American Oilseeds business unit.
- Achieved business unit safety auditor certification for the North American Oilseeds business unit. Performed internal compliance audits for facilities throughout North America

Start-Up and Project Engineer

June 1996 – February 2001

Part of a joint venture team of Cargill Inc. and Roche Vitamins that commissioned a newly-created natural Vitamin E and phyto-sterol process.

- Managed capital reporting on all small and medium sized (\$0-\$2.5 million) capital projects that supported the larger Vitamin E project.
 - Automated monthly capital budget updates by creating a Microsoft Access database with corresponding forms that allowed capital project engineers to report project progress. Compiled capital spending progress report using the data collected on a monthly basis that the Project Manager used to track capital committed, spent, and remaining to complete the Vitamin E project.
- Commissioned plant by performing systematic pre-start-up testing of equipment and instrumentation including communication to the computer control system.
- Executed process improvement projects as issues were identified and action plans developed.
 - Projects included a variety of process equipment piping and instrumentation projects as well as additional laboratory and process building facilities.
- Troubleshoot computer interlocks using Distributed Computer System (DCS) documentation. Recommended Provox DCS control system programming changes to improve process uptime and efficiency.
- Gained experience with HACCP systems while performing projects related to the Vitamin E and Sterol process.

Education

Masters of Business and Administration, University of Iowa, Iowa City, IA - 2005,

- Emphasis in Finance (Real Estate, Fixed Income, International, and Corporate Finance)

Bachelor of Science, Chemical Engineering, Iowa State University, Ames, IA - 1996