Résumé of David B. Leach

OBJECTIVE

Seeking to improve industrial process performance and human productivity through the application of advanced process control techniques, manufacturing information technology, and control-related tools and technology. Offer extensive hands-on engineering, training, and project management experience in process control, control systems, and manufacturing information technology projects.

SUMMARY OF EXPERIENCE

Engineering Consultant with extensive experience in:

- Advanced process control development and high technology project management that achieved clients' process performance improvement and process optimization objectives.
- Application of leading edge control information and process optimization technology that maximized plant profitability, including process and control system dynamic simulation.
- Human-Machine Interface systems (HMI) development and technology management.
- Control systems engineering and use of control-related information management tools (including "best-in-class" open systems technology) to improve plant performance and maximize productivity.
- Leading high performance engineering and contractor teams that conducted control projects worldwide, including leveraging supplier-customer partnerships that achieved strategic automation goals.
- Applying regulatory controller tuning and controller performance monitoring and assessment tools that optimized process and control system performance.
- Training technical, operations and management personnel to maximize return on control systems and information technology investments, and how to best utilize process control-related tools.

MAJOR ACCOMPLISHMENTS

Advanced Process Control:

Developed, implemented and started up a former employer's 1st model predictive control (MPC) application to optimize the performance of a pharmaceutical fermentation batch bioprocess.

- Implemented MPC strategy with a DeltaV™ Predict Pro controller and demonstrated that key project goals were met, including increasing product yield by 30%.

Managed the first project conducted by a former employer where Model Predictive Control (MPC) was applied to optimize the performance of a cryogenic gas separation unit. Also developed the custom HMI subsystem for the MPC Supervisory Control System.

- Resulted in a development program that applied this technology to most of the corporation's resource-intensive processes worldwide, substantially increasing the profit of operating units.

Developed several complex regulatory and advanced control strategies for cryogenic hydrocarbon processes using offline dynamic simulation of the process and control system; configured these strategies in various control systems (e.g., Honeywell TDC 3000, Bailey INFI90, and Siemens APACS+); and started up these plants.

- The control strategies were proven to provide tighter control and improve performance; became an integral part of the process design package; and helped to sell these plants to other customers.

Developed a proprietary dual composition distillation control strategy while starting up a former employer's largest single train cryogenic gas separation and hydrogen-producing facility.

- Outperformed comparable control strategies previously implemented in process licensor's similar plants around the world, and enabled the plant to meet stringent environmental regulations.

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Batch Process Control:
Managed three concurrent batch process control projects for a former employer that automated three different polymer production facilities. Developed a multivariable control strategy for a complex batch emulsions polymer synthesis reaction using neural network analysis and modeling software.
- Helped to maintain the dominant world market share in these product lines for over 15 years.

Designed a grass roots macrocyclic musk chemical plant as lead process engineer, supervised contractors to build this plant in Muskegon, Mi, and started up the plant.
- Plant startup demonstrated capability to manufacture a 1st-of-its-kind organic chemical that required complex organic synthesis

Control Systems Engineering:
Developed worldwide corporate standards and application guidelines for HMI systems that were applied to conduct all new DCS projects, streamlining the design work process and aligning with the control system supplier's standard offerings.
- Reduced DCS project implementation cost by an average of 5-10%.

Designed, integrated, tested and provided technical training and remote startup support for the HMI subsystem for a high reliability hydrocarbon gas-producing plant. This international project required the supervision of technical resources in four different supplier/customer facilities in the U. S. and Europe.
- Met or exceeded all project requirements for a first time refinery customer.

Developed the regulatory and advanced process controls for a first-of-a-kind cryogenic hydrocarbon liquefaction process, and supervised various engineering contractors and a systems integrator who performed the detailed DCS design and configuration. Piloted the first use of an online mass spectrometer, including a high-level data interface to the DCS required to support the advanced control strategy. Started up the plant and validated that the contractual plant performance criteria were met or exceeded.
- Helped to sell the plant design to other customers. The Customer was very satisfied with the results and subsequently placed another plant order.

Upgraded various DeltaV™ systems in pharmaceutical service and installed a batch historian; including performing required Computer Systems Validation (CSV).
- Enabled implementation of a novel advanced control strategy with savings of > $500K/year.

Control-Related Information Technology:
Managed the global introduction and application of "open systems" control information technology. Improved the productivity of designers and facility managers, and provided software tools that were applied to improve process performance.

Isolated the cause of a major process problem for a world-class European air separation facility, utilizing multivariate statistical analysis to analyze plant historical process/control data.
- Assisted the design engineer to recommend equipment modifications that resolved the problem.

Developed a highly customized pharmaceutical batch information analysis & diagnostic system utilizing SAP Netweaver xMII™ manufacturing info. portal technology for batch reporting, batch-to-batch data analysis, and alarm management.
- Enabled root cause analysis and assisted the operations staff to comply with GMP requirements.

Technical Training:
Developed web-based training modules in the areas of primary instrumentation, regulatory process control, process response testing, controller tuning, and HMI fundamentals.

- Conducted several webinars for the ISA on HMI engineering fundamentals.
- Developed and conducted in U. S. and Europe facilities HMI system design, operation.

EMPLOYMENT SUMMARY

INDUSTRIAL PROCESS OPTIMIZATION, North Lauderdale, FL
Owner, 2003-Current
Developed and presented webinars on HMI technology fundamentals for ISA. Provided performance monitoring software training, installation and application consulting services for ExperTune Inc. Worked with the following ExperTune Inc. customers: BP Products North America Inc., Marathon Petroleum Company, PCS Nitrogen Trinidad, SABIC Innovative Plastics, and Texas Petrochemicals LLC. Also worked directly with a well-known global world class fertilizer producer (proprietary).

ELI LILLY AND COMPANY, Indianapolis, IN
Associate Engineering Consultant, 2003 - 2008
Performed control systems engineering and manufacturing info. systems development to implement a batch process data historian and web-based process and control system data analysis system. Led high performance Engineering Teams to perform major control system upgrades and process control improvement projects for GMP facilities, including performing the required Computer Systems Validation (CSV). Developed and implemented process optimization projects for a Fermentation batch bioprocess. Developed, implemented and started up the company's 1st model predictive control (MPC) application for a batch bioprocess. Implemented controller tuning and tools and trained process control specialists to use these tools. Implemented a control loop performance monitoring and reporting system. Assisted in the startup of a "grass-roots" batch pharmaceutical manufacturing plant in Carolinas, Puerto Rico.

AIR PRODUCTS AND CHEMICALS, INC., Allentown, PA
Engineering Associate - Computer Control Systems, 1980 - 2002
Managed various control projects; evaluated new control technology (including MPC) and performed hands-on impl. for many plants worldwide; managed technology deployment in the areas of human machine interface and dynamic simulation for process control; trained technical personnel in regulatory process control and controller tuning; developed a corporate process control library and managed the corporate process control web site content; and managed the co.'s first MPC project.

STAUFFER CHEMICAL COMPANY, Richmond, CA
Senior Control Systems Engineer, Senior Process Engineer, 1974 - 1980
Performed the process and control systems engineering for a new grass roots sodium hydroxide plant and a fully automated bulk herbicide formulation facility; and started up these plants.

STORY CHEMICAL CORPORATION, Muskegon, MI
Process/Project Engr., Construction Supvr., 1973 - 1974
Performed process and project engineering for a new emerging technology macrocyclic musk plant that produced flavor and fragrance enhancers for the perfume, cosmetic, and beverage industries; supervised the construction personnel who built the plant; and started up the plant.

UNION CARBIDE CORPORATION, Institute, WV
Production Engineer & Operations Supervisor, 1970 - 1973
Supervised a tolylene diamine (TDA) production plant and a hazardous dinitrotoluene (DNT) pipeline

and off-site storage facility; including directly supervising operations and maintenance personnel.

EDUCATION

B. S. Ch. E. Bucknell University, Lewisburg, PA

ACCOLADES & PROFESSIONAL MEMBERSHIPS

Designated as a Global DeltaV™ Power User by Emerson Process Management.

ISA Senior member

LinkedIn Profile: https://www.linkedin.com/in/davidbleach/
Industrial Process Optimization Website: http://www.ind-pro-opt.com/