Michael Hessler
052-613-1040 michael@hessler.co.il

Chemical Process Engineer

Chemical process experience includes: air pollution control, alkyl benzene, ammonia, brewery, charcoal, coal gasification, epitaxial silicon, fuel cells, hazardous waste incineration, olefins, petrochemicals, phosphorus trichloride, sulfuric acid regeneration, sulfurized isobutylene, waste water treatment, and others.

Detailed design experience in both chemical and mechanical engineering include: ASME vessels, bag houses, boilers, burners, columns, controls, cyclones, fans, filters, heat exchangers, incinerators, piping specifications, pressure vessels, pumps, reactors, relief devices, scrubbers, and other equipment items.

Supervision of the technical work efforts of designers, instrumentation specialists, maintenance personnel, mechanical & process engineers, production unit operators, programmers, union workers and contractors.

Software development, database administration and report generation with various operating systems, coding languages, database engines and software packages in support of engineering and manufacturing.

Technical support responsibilities have involved: bid evaluations, facility audits for Missouri's Air Program, material of construction selection, operating procedures, process & mechanical design calculations, project definitions, safety and hazard analysis, stack testing, and various reporting.

Relevant Work Experience

May 2004 to Nov 2004 ESA Engineering Services Inc, Cleveland, OH
Support of an ongoing solid oxide fuel cell development project at **SOFCo**'s Alliance Research Center.

- Provided engineering review and documentation of component design.
- Prepared purchase requisitions and coordination of component fabrication.
- Performed heat transfer analyses to size/specify insulation systems.
- Calculated component and piping pressure drop.
- Designed high temperature components including piping, manifolds, seals & insulation.

Oct 2002 to April 2004 Consulting Projects, Nashville, TN

- Successfully generated Production Economic Model for Sulfuric Acid Regeneration for **Shell Chemical Risk Management Company**.
- Drafted MACT CPT for hazardous waste incinerators including chemical weapons demilitarization facility and directly supervised efforts of three engineers in writing MACT CPT for **Franklin Engineering Group**.

Jul 1997 to Mar 1999 CDI ENGINEERING GROUP, St. Albans, WV & Baton Rouge, LA
Lead Process/Project Engineer, PSM Upgrade Project for UNION CARBIDE CORP (UCC), Taft, LA

- Developed detailed Facility Scope Packages (dFSP) for Process Safety Management (PSM) Equipment Upgrade Project involving Petrochemicals. Trained and led PSM team in use of UCC Pressure Relief Device (PRD) software.
- Directly supervised 8 engineers and 4 designers during the peak of the project.
- Implemented PHA in association with PSM efforts on UCC Olefins unit.
- Sized valves, lines and control systems.

Jul 1996 to Jun 1997 MISSOURI DEPARTMENT OF NATURAL RESOURCES, Jefferson City, MO
Environmental Engineer, Air Pollution Control Program (APCP), Technical Support Section, Emissions Inventory Unit

- Worked on special enforcement investigations and permit reviews including: biocides, charcoal kilns, lead mining and processing operations. Established BACT for Missouri's charcoal kilns.
- Received CARB training as engineer responsible for incinerators.
- Conducted engineering evaluations on emission information submitted by Missouri Industries.

Oct 1995 to Mar 1996 MTI, CDI ENGINEERING GROUP, St. Albans, WV
PRD/Process Engineer, PSM Documentation Project for UNION CARBIDE CORP, Charleston, WV

- Certified by UCC in use of UCC PRD software to assure compliance with OSHA 1910 PSM.
- Conducted audits, which included reviews of process and instrument drawings, pressure relief devices, material of construction, and all documentation required to comply with regulations for ammonia systems.
- Implemented PHA in association with PSM efforts for Ammonia system.

Feb 1983 to Apr 1993 Consulting Projects, Missouri

- Implemented PHA in association with daily production issue of ink manufacturing; coordinated activities of ink production to meet just-in-time inventory and shipping requirements while maintaining quality, safety, and supervising 12 union ink makers at **Marsh Ink Company**.
- Implemented PHA in association with **Ethyl Petroleum Additives**' Sulfurized isobutylene reactor, scrubber, flare and waste separation equipment on Sulfurized isobutylene unit. Technical services for sulfurized isobutylene reactors, scrubbers, flares, and waste separation equipment.
- Prepared process documents for Monsanto's epitaxial silicon projects including project definition, process flow diagrams, equipment arrangements, engineering flow diagrams, and performance data sheets for quality assurance lab, reactor cooling water system, and scrubber system. Supported plant wastewater treatment unit and cooling tower chemical treatment upgrades for **Monsanto Electronic Materials.**
- Revised equipment sizing, and engineering drawings for an **Anheuser Busch** Brewery expansion.
- Sized hydrogen fluoride regeneration column and ancillary equipment for a linear alkyl benzene process. Developed relief containment systems and process effluent scrubbers for phosphorus trichloride reactors and for a chlorine vaporizer. Developed waste minimizing scrubber control system. Implemented PHA in association with relief containment systems, phosphorous trichloride reactor, chlorine vaporizer, process scrubber for **Monsanto Detergent & Phosphates**.
- Designed mechanical specifications, bid evaluations, and engineering flow diagrams for sulfuric acid plants for **Monsanto Enviro-Chem**.
- Generated process flow diagrams with AutoCAD for Hazardous Waste Incineration System for **Chemical Waste Management**.
- Conducted combustion efficiency analysis & internal inspections of Military boilers in Germany & Spain for the **Department of Defense** through Engineering Design & Management.

Jan 1982 to Dec 1982 ALLIS CHALMER, West Allis, WI
Operations Engineer, KILNGAS R & D, East Alton, IL

- Wrote standard operating procedures and commissioning instructions for primary and secondary gas cooling, tar removal, and process liquor clean-up systems of rotary kiln coal gasification facility.
- Completed formal hands on training in DCS, PLC, and various control components.

Jan 1980 to Nov 1981 BABCOCK & WILCOX, Barberton, OH
Process/Design/Development Engineer, Fossil Power Generation Div., Advanced Energy Systems

- Designed coal gas system and associated steam generation components including ASME code vessels.
- Initiated modifications to company design manuals for special process conditions of gasification.
- Worked with technology group on Node-to-Node Heat transfer modeling of slag cycle erosion on studded refraction walls to optimize stud arrangement.
- Initiated and led programming efforts to correct document and expand engineering group's software.
- Developed company's first direct software-generated CAD conceptual design drawing package from the combination of routine design, modeling & simulation programs resulting in the reduction of drafting time.
- Directly supervised the efforts of 3 engineers coding in FORTRAN.

Education

Bachelor of Science in Chemical Engineering, University of Missouri Columbia
Post-Baccalaureate in Computer Science, University of Missouri Rolla Graduate Engineering Center
AA-Honors, Computer Science, St. Louis Community College, St. Louis, MO

Additional Formal Training in chemical plant fire fighting, first aid & CPR, DCS & PLC programming, process instrument troubleshooting, relief systems engineering (OSHA 1910.119), PHA, CARB, Pressure Relief Device (PRD) software, SQL Server 2000, as well as various management and quality assurance philosophies including interactive management, ISO 9000, just-in-time manufacturing, and team building.

Missouri Engineer in Training #24969, 1979

Recommendations and Other Experience

Work quality recommendations, additional work experience and business systems knowledge are viewable at **http://www.linkedin.com/in/michaelhessler**.