TRIMERIC CORPORATION

Qualifications for CO_2 Capture, Sequestration and Processing

engineering

consulting

research

project management

www.trimeric.com

CO_2 Capture, Sequestration, and Processing Technology at Work for You

CONNECTING YOUR BUSINESS TO THE TECHNOLOGY RESOURCES YOU NEED

FEASIBILITY AND ECONOMIC ANALYSIS

Feasibility studies for surface facility design including: compressor systems, dehydrators (glycol and glycerol), refrigeration, CO_2 liquefaction and dense-phase pumping

Designs for CO_2 in natural gas, flue gas and other streams, as well as H_2S removal

Capex, opex, and total treating economic evaluations

Equipment sizing and cost estimating from vendors, literature and software

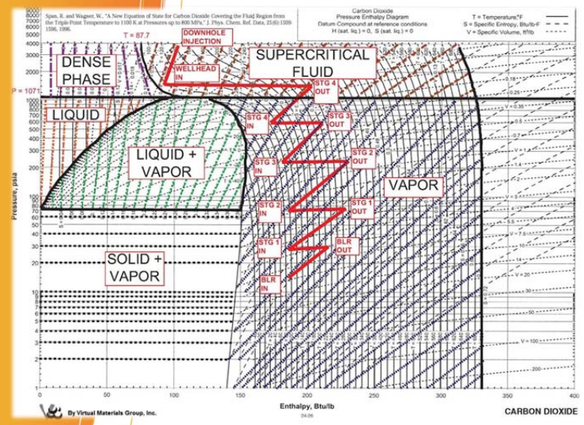
Technology evaluation and final process selection

PROJECT EXPERIENCE

- Technical and economic evaluation of options for capturing CO_2 from an ethanol production plant
- Economic analysis of novel potassium carbonate / piperazine / MEA solvent formulations and advanced solvent regeneration configurations for CO_2 capture from flue gas
- Cost assessment for experimental ionic-liquids approaches for CO_2 removal

innovative solutions for

CO_2 industry needs



PROCESS SIMULATION AND CALCULATIONS

Use of state of the art software to accurately predict the phase boundary and hydrate curves as well as water holding capacity for CO_2 streams at moderate and supercritical conditions

Modeling of injection well, production well, and flowlines for CO_2 streams

Pipeline flow analysis (e.g., two-phase supercritical flow and retrograde condensation of water)

Surface equipment performance and optimization

Flammability analysis for multi-component streams

Process safety valve and header design

PROJECT EXPERIENCE

- Process simulation for 0.25 MW CO_2 capture pilot plant for electric utility provider
- Modeling of scrubber to remove acetaldehyde and other organic compounds from CO_2 stream
- Pipeline simulation for 400 mile CO_2 delivery system to evaluate changes to the pipeline and associated operations and to maximize pipeline capacity and determine locations for pump stations

P.O. Box 826 • 100 S. Main St. • Buda, TX 78610

DESIGN AND ENGINEERING

Conceptual design of novel, pilot plant, and large-scale CO_2 capture, processing and sequestration units

Process design packages with material and energy balances, P&IDs and control logic

Preparation of equipment specifications with material of construction determination, review of vendor bids, and equipment selection

Hazards and operability studies (HAZOP) and process hazard analyses (PHA)

Project management and material procurement support

Research program planning

PROJECT EXPERIENCE

- Design of new plant to dehydrate, condense, and pump 150 MMscfd of CO_2
- Design of four grass-roots supercritical CO_2 dehydration facilities to process a combined 850 MMscfd
- Evaluation of several conventional and compact heat exchanger designs and preparation of equipment specifications for 18 MMscfd CO_2 condenser
- Laboratory testing of dehydration solutions and ion-exchange resin to remove chloride salts from glycerol

technology consulting provides a

total end-to-end solution

PROCESS SUPPORT AND TROUBLESHOOTING

Plant startup assistance working with technology providers and staff operators to integrate new technology with existing units

Operating procedures, training manuals, and on-site operator training on the importance of CO_2 stream properties, safe work practices, and plant operation and controls

Equipment troubleshooting on units that are underperforming to original design

Debottlenecking studies to identify means of improving the capacity and performance of existing CO_2 facilities

PROJECT EXPERIENCE

- Troubleshooting services for a beverage-grade CO_2 plant that was having trouble meeting their H_2S specification economically
- Capacity study to increase throughput of 150 MMscfd supercritical CO_2 dehydration facility by replacing existing trays with structured packing and other minor modifications to existing plant
- Training seminars for CO_2 injection facilities

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ENGINEERING
CONSULTING
RESEARCH
PROJECT MANAGEMENT

Trimeric Corporation was founded in 2003 by two professional engineers with a strong desire to focus on providing technical serves to industry.

Trimeric Corporation serves private industry and government by providing process engineering, chemical engineering, research and development and other specialized technology services.

Our resources include our employees and our network of trusted associates from the industries we serve. We help our clients solve some of the most challenging chemical-process-related problems. We rely on personal relationships, trust, and open communications to ensure success and satisfaction for all parties.

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