

SynGas Conference

Discussion Title

### **Steam Methane Reformer Tube Lifecycle Improvement via Inspection and Operations Best Practices**

This Discussion will include historical and latest inspection/operations techniques and best practices for monitoring and optimizing tube lifecycles. With correctly gathered online temperature data compiled with NDT inspection techniques and process optimization most available tube life can be used while minimizing the risk of a tube failure. Effective deployment of these systems reduces the capital cost of tube replacements and extends available runtime before replacement.

Discussion will include:

- Inspection methods to utilize and background on each technology
  - High temperature Infrared Thermography
  - Traditional handheld pyrometers
  - Goldcup contact pyrometers
  - Lotus/Mantis NDT
- Inherent uncertainties in the available inspection methods
  - How to combine different methods to improve data accuracy
- How online inspection techniques drive actionable steps for process optimization
- What industry has learned combining these methods to optimizing tube lifecycles while remaining reliable
  - Capacity vs tube life
  - Case study of tube life optimization

Presented by Grant Jacobson, Division Manager Becht Fired Heater Services



## GRANT A. JACOBSON

*Fired Heater Services Division Manager*

Mr. Jacobson has experience in design, operation, optimization of process equipment and operations management of cross-functional teams. At Valero Energy, he led multiple operational practices improvement focusing on equipment preparation and troubleshooting as well as building toolsets and polices to facilitate continued operational excellence. With ExxonMobil while supporting refinery units as a process engineer, he helped develop and lead strategic, quick payback projects to help reinforce refinery profitability during poor market conditions. He has extensive process engineering experience coupled with hands on, in the field, operational know how to drive elegant and practical solutions. Mr. Jacobson has supported or operated every major refinery process unit across his years of industry experience.

### Becht, Liberty Corner NJ

- Responsible for leading the Becht Fired Heater Services division with over 150 years of industry experience to provide value added monitoring and solutions to clients.
- Member of the API Subcommittee on Heat Transfer Equipment

### Valero Energy, Memphis Refinery

- Operations Excellence Superintendent leading key site improvements with cross discipline teams. System administrator of the site electronic permitting systems, IntelaTrac system, and electronic shift logs.
- Operations Manager leading a team of 2 Unit Superintendents, 4 Shift Supervisors and 28 Operators for an operating complex. Responsible to ensure safe, environmentally compliant and reliable operations
- Unit Superintendent rotation focused on improving the reliability and operating practices for a Fluidized Catalytic Cracker and HF alky among other process units. Key team leader for executing the online loading of +2500 steel “cannonballs” on an orifice chamber to manage FCC flue gas system erosion until the next planned outage.
- Process engineering support and toolset development to improve profitability. Led the restart of a mothballed HF Alky Selective Hydrogenation Unit and built FCC catalyst modeling toolsets to determine on a weekly basis the most profitable mix of catalyst types and loading rates with given feedstocks.

### ExxonMobil, Chalmette Refinery

- Process engineering and capital project support for 2 Crude Units, Merox Jet Treater, Wastewater Treatment, Tank Farm, Delayed Coker, Gas Oil Hydrotreater, FCC Gasoline Hydrotreater, Naphtha Hydrotreater, Continuous Catalytic Reformer.
- Lead development and execution of strategic quick hit projects with <4 month payback periods to improve strategic profitability of the refinery

Mr. Jacobson received his Bachelors of Science in Chemical Engineering from the University of Nebraska.