

Qualifications: Bernard Ennis, P.E.

Energy & Chemical Consulting – Planning – Economic Analysis – Implementation

Oil & Gas – Oil Refining – Petrochemical Processing – Chlor-Alkali – Power Generation

Summary

Licensed professional engineer Bernard Ennis has consulted to industry since 1993. He has long association and experience with marketing and commercialization of new chemical process technologies, management, and engineering design and construction. Mr. Ennis earned his Bachelor of Science and Master of Science degrees in chemical engineering at Villanova University in Pennsylvania, U.S.A.

Mr. Ennis served for over 25 years in positions of increasing responsibility at U.S.A. corporations with global reach including The M. W. Kellogg Company (now KBR, Inc.) and ABB Lummus Global, Inc. (now CB&I, Inc.) At the latter, Mr. Ennis attained the positions of Vice President - Operations and subsequently Vice President - Advanced Engineering.

At Kellogg, Mr. Ennis was Technology Development Manager. Prior, as Project Manager at Kellogg, he had responsibility for ethylene furnaces and complete plants. He managed all basic engineering functions including proprietary high-temperature furnace and chemical reactor designs. Additionally, he completed the installation of a customer-focused performance management system for an engineering and construction company with global operations.

His unique combination of corporate and independent experience has given Mr. Ennis particular strength in foreign and domestic joint ventures and business cooperation contracts; technology development and licensing; project management, new product planning and introduction; budget development and control; business and information systems; organization development; performance management and ISO 9000; safety management and OSHA 29 CFR 1910.119; environmental management and EPA 40 CFR PART 68; expert litigation and insurance consulting. Working knowledge of plant economics, risk and finance.

Mr. Ennis' process engineering and technical background is in ethylene, fertilizers, methanol, petroleum refining, petrochemical processing, industrial gases, and electric power generation. Mr. Ennis also works closely with strategic partners, and has authored over twenty five patents with others pending.

Process Engineering Capability

Mr. Ennis experience encompasses technical and management functions for designs of high temperature petrochemical processing including syngas technologies (steam reforming, autothermal reforming, partial oxidation) and pyrolysis technologies. Syngas technologies apply to methanol and nitrogen fertilizer manufacturing, among others, while pyrolysis technologies apply to ethylene and propylene, mainly. These technologies involve highly-sophisticated custom-designed proprietary equipment and system configurations. He developed his deep industry knowledge and expertise in both corporate and independent endeavors.

Basic Engineering Capability (Front End Engineering Design)

Mr. Ennis has managed hundreds of engineers and led design-solution teams analyzing numerous high temperature furnace, chemical reactor, heat exchange, steam generation, gas compression and instrumentation/control performance issues; spanning the full plant design and operating life-cycle for the above-mentioned types of equipment. He has done this in both corporate and consulting settings where he organized whole-plant evaluations and directed specialist engineers to solve operating problems and equipment failures; on behalf of plant owners, engineering contractors, litigating attorneys, and insurance companies.

Single Point Responsibility for Problem Solving

Mr. Ennis works alone for clients when the scope is within his specific expertise. This is sufficient in many instances. He engages others as may be needed for complex problem solving that is sometimes required, e.g. industrial strength process and equipment simulation, detailed civil/mechanical design, stress analysis, laboratory services, etc.; and welding and code interpretation especially when equipment-life evaluations are involved. Mr. Ennis manages and represents all work performed by him and under his direction. This representation is often crucial to cost determination and cost allocation among involved parties.

Selected Assignments

1. Fertilizer plant cause and origin analysis of damage resulting from electrical and instrumentation/control interaction with cogeneration power plant;
2. Partial oxidation reactor and gas cooler failure analysis;
3. Gas turbine power plant fire cause and origin analysis;
4. Refrigeration plant explosion cause and origin analysis;
5. Chemical plant comprehensive analysis for technology, process design, equipment condition and operating conditions with respect to state-of-the-art and safety;
6. Chemical plant simulation and analysis of plant operating data regarding under-performance;
7. Life-cycle stress analysis of high temperature furnace piping system;
8. Technical and economic evaluation of restarting a mothballed ammonia-urea fertilizer complex;
9. Technical and economic evaluation of relocating an ammonia plant;
10. Develop kinetic model for natural gas decomposition;
11. Process simulation, cost estimate and economic analysis for novel hydrogen process equipment system;
12. Process simulation, cost estimate and economic analysis for novel ammonia process equipment system;
13. Process simulation, cost estimate and economic analysis for novel power plant equipment system;
14. "In House" marketing consultant for a company offering high temperature ceramic coatings;
15. "In House" marketing consultant for company offering novel high temperature electric heaters.

Diverse Energy and Chemicals Industry Expertise
Business Sense – Wise Advice
One -On-One or One-on-Many – "In-House" Consultant
Recommend Project Selection and Facilitate Effective Implementation
Short Schedule – Enduring Success

Bernard Ennis, P.E.

INTELLIGENCE TO INNOVATE WHILE UNIFYING KNOWLEDGE WITH ACTION

Texas Professional Engineer License (active)

American Institute of Chemical Engineers
Association of Consulting Chemists and Chemical Engineers – Director
Sigma-Xi, the Scientific Research Society of America

Pro Bono: Completed 8 years in 2014 (maximum allowed)
Attorney Ethics Committee – Supreme Court of the State of New Jersey

Hobby: SAG-AFTRA Union Member (Screen Actors Guild – American Federation of Television and Radio Artists)