



JAMES CRUMM

Specialist Consultant

Areas of Expertise

- Risk Management
- Management Consulting
- Industry Best Practices
- Corporate Governance
- Risk Assessments and Audits
- Prudence Analysis / Audits
- Compliance Review / Audits
- International Contracting and Management
- Executive Management
- Institution and training
- Change Management
- Engineering and Construction Management
- Project / Program Management
- Project Delivery and Constructing
- Procurement Management
- Contract Administration
- Project Control Systems
- Operations Management
- Claim Analysis / Negotiation
- Claim Prevention
- Strategic Planning
- Quality Assurance and Control

Background

Mr. Crumm is a Pegasus Global Holdings, Inc. Specialist Consultant and has extensive experience in the management and control of engineering and construction projects. Mr. Crumm has worked on a wide range of projects internationally, responsible for all phases of project execution, procurement and construction of process plants projects. Drawing upon his 40+ years of experience, Mr. Crumm is involved in all aspects of Pegasus Risk Management, Management Consulting, and Strategic advice engagements.

Mr. Crumm's management consulting experience including proposal preparation, contract negotiation and administration, design, project controls, procurement, and detailed engineering. His project management and controls experience is extensive and ranges from direction of multidiscipline engineering to procurement and construction (EPC) teams, and preparation and negotiation of major EPC contracts.

In the risk management arena, Mr. Crumm acts as a senior member on engagements, leading and performing a variety of project-specific and corporate risk assessments and audits. He has also been responsible for identification of risk and the monitoring of projects in execution to insure risks are mitigated and cost to complete estimates are correct for all projects, worldwide. His expertise includes extensive claims prevention and strategic planning as well as claims settlement involving legal action, mediation and arbitration.

Mr. Crumm's engagement experience also includes pre-design work, bidding, estimating, surveying, technical evaluations, start-up and operations, procurement activity, resource loading and activity evaluation, project closeout, forensic engineering, and commissioning, testing and maintenance, and inspection of work on construction sites.

He has worked on numerous domestic and international engagements (*see attached Representative Engagement Experience*).

Mr. Crumm has 40+ years experience in North and South America, Europe and China in the chemical, petrochemical, petroleum refining, power generation and engineering and construction industries: 25 years with Foster Wheeler Corporation and 15 years with Dow Chemical Company. Mr. Crumm was involved in all phases of corporate management, including managing engineering design and construction projects,

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manufacturing facility operations, R&D, environmental compliance, sales and business development, labor relations and technical recruiting.

Mr. Crumm's 25 years with Foster Wheeler Corporation culminated in his position as President and CEO of Foster Wheeler's North American and Asian power boiler equipment business units responsible for supplying solid fuel power boilers and HRSG's to Foster Wheeler's customers worldwide. Additional management responsibilities for the Global Power Group included the North American power plant maintenance and construction group, global procurement of all material and services and the operation of pressure part manufacturing facilities in China, Poland, Spain and Finland.

Prior to that position Mr. Crumm was Executive VP and Chief Operating Officer of the Global Power Group responsible for all design, engineering, procurement, manufacturing and construction of power boiler projects worldwide. At one time this COO position was also responsible for Foster Wheeler Environmental's nuclear waste processing facility at Oak Ridge, Tennessee, Foster Wheeler's North American Fired Heater Group in the US and Canada and its Engineering & Construction office in Houston, Texas responsible for designing and constructing delayed coker plants for the petroleum refining industry.

During the execution of the positions above, Mr. Crumm had responsibility to implement systems compliant with the new US Federal Sarbanes-Oxley Act and insuring that those systems were complied with.

In 2002 Mr. Crumm was appointed Foster Wheeler's new Corporate VP of Project Risk Management, reporting to the President and CEO and the Audit Committee of the Board of Directors of the Corporation, responsible for identifying project risks at the proposal phase, the contracting phase and during the project's execution and mitigating those risks to eliminate money losing projects.

Between 1999 and 2002, Mr. Crumm was President and Managing Director of Foster Wheeler's Engineering & Construction business operations in Venezuela.

Prior to the above senior management positions Mr. Crumm was involved in proposing, contracting, engineering and constructing projects in the following areas:

- Numerous garbage burning power plants,
- Over \$500 million in EPA Clean Water Act funded projects to convert sewage sludge into fuel or fertilizer,
- Dutch government funded project to build a prototype facility to convert farm waste into high grade fertilizer,
- DOE funded power alcohol plants,
- EPA/EPRI subsidized Clean Coal project to demonstrate an advanced high pressure gasification and combustion power cycle,
- Revamp of a plastics monomer manufacturing facility in Louisiana,
- The first Build-Own-Operate facility in Venezuela supplying hydrogen gas to the Venezuelan National Oil Company (PDVSA),
- A \$500 million delayed coker project in Venezuela to upgrade Venezuelan heavy crude oil,
- PMC contract to support Total Oil/Statoil/PDVSA in building a \$4.6 billion heavy crude oil upgrader refinery in Venezuela.

While with Dow Chemical, Mr. Crumm held management positions in the operation of benzene, toluene, ethylbenzene, styrene, chlorine and caustic soda manufacturing facilities. He also served as a Project Manager in both the Styrene Business Unit (North America and Europe) and the Chloralkali Business Unit (North America).

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Education and Courses

Education

- Bachelor of Engineering Science, Chemical Engineering Major, Trinity University, San Antonio, Texas.
- Dow Chemical and Xerox courses in management theory and practice

Technical Papers and Presentations

Mr. Crumm has authored and presented technical papers on risk management and engineering on power plants:

- Guest lecturer at the University of Texas, School of Chemical Engineering, “Project Execution and Risk Management”, February 2008
- Panelist in discussion of Project Risk Management at the 2003 Electric Power Conference.
- Guest lecturer at 1985 Fall Lecture Series on Waste Management, North New Jersey Section of the American Institute of Chemical Engineers.
- Guest lecturer on management and disposal of municipal waste at Rutgers University Department of Environmental Science, November 1984.

Memberships

- Member, American Institute of Chemical Engineers.

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<p align="center">JAMES CRUMM <i>Representative Engagement Experience</i></p>		
Industry	Type	Project Name
Power	Nuclear	Nuclear Waste Separation Facility ,Oak Ridge, United States (Tennessee)
Power	Advanced Power Demo Plant	DOE/EPRI/ Southern Company, Wilsonville, Alabama
Power	Cogeneration/ Combined Cycle/Fossil Fuel	ESB, Ireland
Power	Cogeneration/ Combined Cycle/Fossil Fuel	ISAB Energy S.r.L, Italy (Sicily)
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Jiangxi, China
Power	Cogeneration/ Combined Cycle/Fossil Fuel	ESB/Fuji Electric, Japan
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Bechtel, Springerville, Arizona
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Sinopec, China
Power	Cogeneration/ Combined Cycle/Fossil Fuel	AEP/Tanners Creek, Indiana
Power/Environmental	Cogeneration/ Combined Cycle/Fossil Fuel	Cinergy/Gibson Power Plant, Indiana
Power	Cogeneration/ Combined Cycle/Fossil Fuel	PP&L, Lower Mt. Bethel, Pennsylvania
Power	Cogeneration/ Combined Cycle/Fossil Fuel	JCP&L, Linden & N. Bergen New Jersey

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<p style="text-align: center;">JAMES CRUMM <i>Representative Engagement Experience</i></p>		
Industry	Type	Project Name
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Bechtel, Various, California
Power	Cogeneration/ Combined Cycle/Fossil Fuel	PF&L, Four Plants, Florida
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Japan
Power/Feasibility Studies and Definitive Estimates	Cogeneration/ Combined Cycle/Fossil Fuel	California, New Jersey, New York
Power/Maintenance Services	Cogeneration/ Combined Cycle/Fossil Fuel	AEP, AES, FP&L, ConEd, Cinergy, Jackson
Power	Cogeneration/ Combined Cycle/Fossil Fuel	ConEd, 14 th Street, NYC, New York
Power/Environmental	Cogeneration/ Combined Cycle/Fossil Fuel	AEP/Mountaineer, W. Virginia
Power	Cogeneration/ Combined Cycle/Fossil Fuel	AES Deepwater, Texas
Power	Cogeneration/ Combined Cycle/Fossil Fuel	Con Ed 14 th St, United States (NY)
Industrial / Process	Refinery Delayed Coker	SINCOR, Venezuela
Industrial / Process	Refinery PMC	SINCOR, Venezuela
Industrial/ Process	Hydrogen Plant	BOC/FW, Venezuela
Environmental / Process	Fertilizer Plant	Fertilizer Plant, Netherlands
Industrial/Process	Plastics Monomer	Cytec, Louisiana

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Industry	Type	Project Name
Industrial/Process	Chlorine Cell Expansion/Revamp	Dow Chemical, Texas
Industrial/Process	Chlorine Purification Expansion/Revamp	Dow Chemical, Texas
Industrial/Process	Ethylbenzene Cracking Plant	Dow Chemical, Texas
Industrial/Process	Styrene Plant Revamp	Dow Chemical, Netherlands
Industrial/Process	Crude Oil Gathering System	Paris Compán, Venezuela
Industrial/Process	Power Ethanol Plants	DOE/California, Washington, New Jersey
Environmental/Process	Sewage Sludge Drying Plant	EPA/City of Los Angeles, California
Environmental/Process	Sewage Sludge Drying Plant	EPA/County of Los Angeles, California
Environmental/Process	Sewage Sludge Drying Plant	EPA/Trenton, New Jersey
Environmental/Process	Sewage Sludge Drying Plant	EPA/Ocean County, New Jersey