



JNE

Consulting



CHEMICAL PROCESS INDUSTRIES

ENGINEERING SUCCESS GLOBALLY SINCE 1980

JNE provides full-service, multi-disciplinary engineering for the North American Chemical Process Industries.

ABOUT JNE

Responding to the challenges in the chemical industry, JNE provides solutions to meet our clients' demands for continuous process improvement by delivering **greenfield, retrofit, and battery limits** projects with innovative engineering solutions.

Our process group expertise ranges from **small scale specialty chemical batch operations** to **integrated multi-train continuous operations**. From reactor systems to solvent recovery to packaging systems — JNE has the experience to design solutions that exceed our clients' project objectives.

JNE meets the increasing demands of the chemical industry by engineering solutions in a 3D environment. From 3D laser scanning to 3D modelling and design, JNE ensures the design is optimized for quality and constructability to meet our clients' goals quickly and safely. We are continually attracting **engineers, technologists**, and qualified staff from a broad range of industries and varied experiences to bring **expertise in all fields of engineering**. Our in-house **Subject Matter Experts** draw on their fields of specialization and years of industry experience to support our engineering teams.

PROJECT SERVICES

JNE's teams can solve your most demanding engineering challenges. In addition to full-service engineering, encompassing the major disciplines, we also offer program management and procurement services. JNE is always focused on **constructability, reliability, and maintainability**. This ensures the most cost-effective solution while minimizing plant downtime. We provide a level of detail in our detailed

engineering that gives clear direction to the contractor for price predictability and quality control. JNE provides project and construction management services using **proven technologies, systems, and work processes** to provide you with **optimal results**. We deliver your complex and challenging construction projects safely, on time, and within budget.

JNE's experienced project teams can solve your most demanding engineering challenges.



CIVIL/STRUCTURAL
ENGINEERING



ELECTRICAL
ENGINEERING



MECHANICAL
ENGINEERING



PIPING/HVAC
ENGINEERING



PSR + INDUSTRIAL
SAFETY SERVICES

PROJECT PLANNING + EXECUTION

JNE's proven expertise in **project development** and **capital planning** will ensure that your project starts off on a solid foundation. We understand that when it comes to project work, surprises are never good. Our capital planning services guarantee that your project scope is clearly defined and your project funding needs are accurately predicted.

We offer **pre-feasibility studies** to select the best available technology for your project. We conduct a feasibility study for the selected technology to develop a detailed project execution plan, including **Capital**

Expenditure (CAPEX) and **Operating Expense (OPEX)**, project schedule, and financial **Return on Investment (ROI)** with sensitivity analysis. **Front-end engineering design (FEED)** and **project planning** provides clients with a strategic plan clearly outlining all of the specific requirements of the project at the early stages to help identify risk areas, opportunities for value engineering, and provide a cost estimate for budgeting and capital approval purposes.

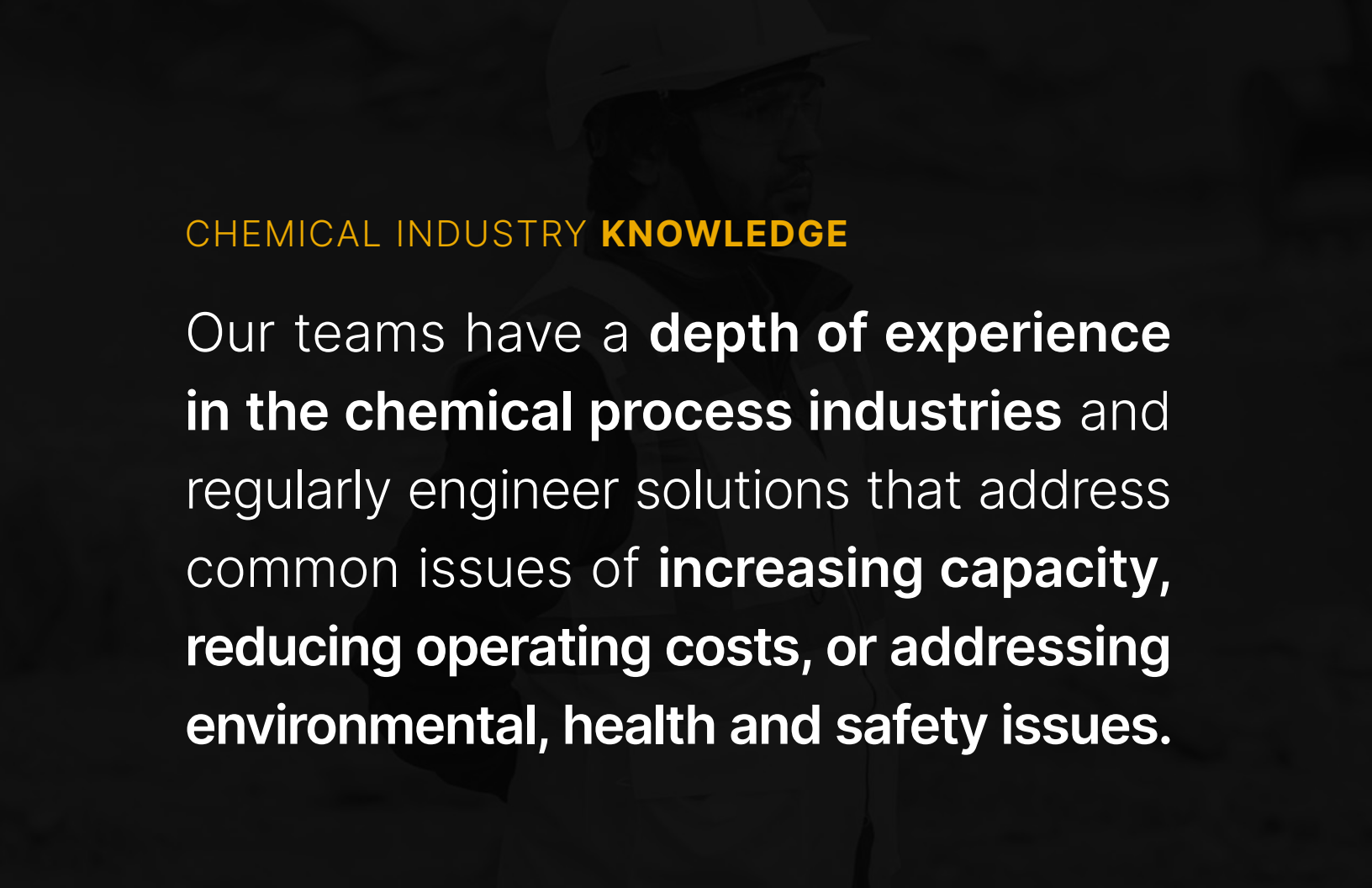
AUTOMATION + PANEL SUPPLY

Our full-service automation integration capabilities allow JNE to construct and **factory acceptance test (FAT)** your systems in-house to minimize on-site installation and commissioning time. Our panels are ISO 9001 registered, ULC certified, and we offer various other industry standard certifications such as Canadian Standards Association (CSA) and Electrical Standards Association (ESA) upon request.

WASTEWATER SERVICES

JNE designs custom **wastewater, air, and solid waste treatment facilities** for our clients. Our process engineers have many years of experience and have designed wastewater treatment plants in excess of 100,000 gallons per minute and air emissions control systems in excess of 1,000,000 standard cubic feet per minute. We can also provide process evaluations of existing systems, often resulting in cost-saving retrofits.





CHEMICAL INDUSTRY **KNOWLEDGE**

Our teams have a **depth of experience in the chemical process industries** and regularly engineer solutions that address common issues of **increasing capacity, reducing operating costs, or addressing environmental, health and safety issues.**

PROCESS **ENGINEERING**

From process development and feasibility studies to detailed process design, JNE's process group can assist clients with all project phases.

The process group at JNE is comprised of chemical engineers with extensive industry experience ranging from process and equipment design to the operation and management of chemical processing facilities. This allows JNE to kick-off a project with very little learning curve, whether the project involves Process Safety Management or other regulations; or focuses on production scheduling and capacity utilization. Our engineers provide process engineering services to chemical and oil & gas clients throughout North America.

PROCESS SAFETY **MANAGEMENT**

Many industrial processes are governed by the OSHA standard 1910.119: Process Safety Management of Highly Hazardous Chemicals standard. JNE Consulting has firsthand experience with the aspects of process safety management including: documenting process safety information, facilitating process hazard analyses, preparing operating procedures, performing pre-startup safety reviews (PSSR) or pre-start health and safety reviews (PSR/PHSR), recommending administrative controls, management of change, and leading and participating in incident investigations.

PROCESS HAZARD ANALYSIS **CAPABILITIES**

- What-If / Checklist

- Hazard and Operability Analysis (**HAZOP**)

- Failure Modes and Effects Analysis (**FMEA**)

- Fault Tree Analysis (**FTA**)

- Event Tree Analysis (**ETA**)

- Layers of Protection Analysis (**LOPA**)



INDUSTRY PROJECTS

JNE is experienced in safely maintaining ongoing production operations during retrofits, turnarounds, or upgrade projects. From greenfield installations to brownfield retrofits, JNE's experience enables us to design complete solutions for optimized logistics, efficient use of utilities, and all aspects of production.

DESIGN PROCESS

The JNE design process brings experienced teams and value engineering together early in the project lifecycle to ensure that safety and constructability are at the core of our designs. This enables us to execute projects in the safest, most cost-effective and efficient manner possible.

Cooling Capacity Upgrade
Ontario

Third Effect Evaporation
Ontario

Rock Dryer Installation
Ontario

Dryer Systems Upgrade
Ontario

Alum Plant Refurbishment
Virginia

Ammonia System Retrofit
Ontario

New Fumigants
Cylinder Filling Facility
Ontario

New Sulphuric
Acid Tank Installation
Ontario

Feasibility Study
for New Ethanol Plant
California

Natural Gas
Mother & Daughter Station
Ontario

Gas-Fired 5MW Electrical
Co-Generation System
Ontario

Plant Upgrades
and Package Line Relocation
Ontario

Acid Regeneration Plant
Ontario

Breaching Duct Replacement
Ontario

Wastewater Treatment
Plant Evaluation
Ohio

Kiln Burner
Management System
Ohio

Greenhouse Energy
Generation
Ontario

Rotary Kiln Fuel
Replacement System
Ontario

Ammonia Scrubber
Packing Replacement
Michigan

New Carbon Black Line
Preliminary Engineering
Ontario



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