



Chemicals



Engineering relationships.

Nexus Engineering Group is a full-service, independent engineering firm focused on supporting clients' specific project goals, from concept to startup. With fifteen years of proven engineering and design successes and a growing team with more than 225 professionals that you will enjoy working with, Nexus is more than your typical engineering firm. Clients come to us for our expertise, creativity, passion, and relentless focus on their goals.

**Business Case Development
& Front-End Loading**

Engineering & Detail Design

Project Services & Controls

**Construction, Commissioning,
Outage & Turnaround Support**



Energy

Our energy services offerings for power delivery (T&D) and distributed generation includes substation engineering, power systems analysis, and plant system design and maintenance solutions. Focused on medium and high-voltage applications up to 345kV, our industry-seasoned staff brings a wealth of project and system experience to develop safe, comprehensive solutions.



Renewables

Our experience includes working directly for clients in the renewable, biofuel, and green energy industry to provide process and project management expertise, helping integrate power from renewable sources into their existing operations, and consulting to vet sustainability investments, provide the economic analysis needed to project return on investment, and implement smart solutions. Nexus's process expertise makes us a trusted partner in designing more efficient facilities and processes that reduce carbon emissions and operational costs.



Oil Refining

Nexus brings a rare combination of technical skill and practical knowledge gained from years working with refining clients to help improve productivity and safety while meeting environmental standards. Our understanding of the refining business and its operational complexity helps us deliver quality, pragmatic designs that work.



Petroleum Midstream

Nexus professionals have the resources, skill and expertise to manage midstream projects and provide operational support for the processing, separation, storage, and distribution of natural gas, liquid petroleum gas, liquid natural gas, crude oil, and crude oil components.



Chemicals

Nexus offers full-service project design that drives efficiency, productivity, and improved quality and plant safety for specialty and commodity chemical companies. We have a deep understanding of continuous processing, solids handling, combustion, and distillation, with a proven track record in product and feedstock logistical planning and optimization.



Manufacturing

Our broad manufacturing expertise includes installation of new process lines, rearranging equipment to maximize logistical efficiencies, and designing equipment modifications that improve productivity, product quality, and safety while minimizing manufacturing costs and production line downtime.

Chemicals Services and Capabilities



PROCESS & PIPING ENGINEERING

Process Design

Data Gathering & Baseline System Modeling
Process Flow Diagram Development
Heat & Material Balances
Hydraulic System Design
Liquid & Solid Chemical Processes
Design Basis Development
Statement of Requirements
PID Development & Control
Operating Cost Analysis
Equipment Specifications
PSM Documentation
Operating Procedures
Tank Farms & Distribution
Commissioning & Start-Up Support
Technical Service Support
Relief & Flare System Design

Piping Design

Laser Scanning
3D Design
Installation Animation
Navisworks Integration
Modular & Pre-Assembly Design
Isometric & Spool Drawings
Construction Support



ELECTRICAL, INSTRUMENTATION & CONTROLS (I&C)

Electrical Engineering

Load Modeling
One Line Development
Arc Flash Analysis
Substation Design
Class I/Division I Design
Power Distribution
Protective Relay Coordination
Energy Audits
Energy Management Systems
Equipment Layout
Equipment Specification
Facility Design
Fire & Security Systems
Lighting & Lighting Controls
Lightning Protection
Start-up Planning & Support

Instrumentation & Controls

System Design & Device Specifications
Distributed Control Systems (DCS)
Safety Instrumented Systems (SIS)
Human Machine Interface
Hybrid Control Systems
Programmable Logic Controls (PLC)
Supervisory Control & Data Acquisition Systems (SCADA)
Field Checkout & Commissioning



MECHANICAL, CIVIL & STRUCTURAL ENGINEERING

Mechanical Engineering

Mechanical Integrity Assessment Support
Vessel Shop Drawings
Nozzle Design Drawings
Skid Packages
Equipment Setting Plans
Turbo Machinery
Rotating Equipment
Stationary Equipment
Chillers & Refrigeration
Boilers
Dust Collection
Energy Recovery Equipment
Bulk Material Handling
Hydraulic Controls

Civil Engineering

Grading/Earthwork
Sewer & Run-Off Hydraulic Modeling
Sewer System Assessment & Design
Road & Railroad Design
Site Planning
Underground Utilities

Structural Engineering

Shoring Plans
Structural Repairs
Pre-Assembly Design
Geotech Reviews



PROJECT & CONSTRUCTION MANAGEMENT

Project Controls

Initial Project Support
Integrated Document Management Systems
Formal Project Reporting
Risk Assessment/Register
Risk Management System
Review of Lessons Learned

Estimating

Initial Estimate: (AACE) Class V/IV
Class II & III Estimates
Basis of Estimate/Metric Review
ASPEN Cost Estimator & Historical Metrics

Scheduling

Level 2 Schedule
Level 3 Schedule – Resource Loaded
Earned Value Process in Place
Primavera – P6 & Microsoft Project
Advanced Work Packaging

Project & Construction Management/CM/CA

Procurement Services & Support
Evaluate Lifecycle Costs
Constructability Analysis
Lift Planning
Logistics & Heavy Haul
Field & Shop QA
Commissioning Support

You'll Want Us in Your Business.

You expect design, project management and controls expertise from an engineering design firm. What you may not expect is how our understanding of your business inspires creative approaches you hadn't considered. We call it Busineering, and it's how we ensure every engagement begins with our team learning your business objectives, not just your engineering needs.

We start by studying your operations, investment and desired outcome, which helps us evaluate the engineering problem from all angles. Then Nexus gets to work on how to best maximize your return. Business-first thinking inspires more creative design, and more effective communications throughout the project.

From project kickoff to closeout, we work hard to become the trusted partner you'll want to come back to for the next project or investment program. Our high-energy staff is made up of talented process, instrumentation and controls, structural, electrical, mechanical, and piping professionals with decades of hands-on conceptual and detailed system design, construction, commissioning and turnaround support, and project management experience. What we all have in common—a shared commitment to building engineering relationships that last for careers.



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