



Waldemar S. Nelson and Company, Incorporated
Engineers

Refinery and Chemical Plant Facilities

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WALDEMAR S. NELSON and COMPANY, INC.

WALDEMAR S. NELSON AND COMPANY, INC. founded in 1945, is an organization of engineers and architects furnishing professional services in a broad field of practice. Our services include the following general areas:

- Consultation
- Economic reports
- Evaluations and appraisals
- Planning and scheduling
- Conceptual/Feasibility studies
- Preliminary and detailed design
- Project management
- Construction monitoring
- Start-up assistance

Principals of the firm include engineers and architects holding registrations in 44 states with extensive experience in all phases of both professions including civil/structural, chemical/process, mechanical, electrical and instrumentation/control systems engineering, and architecture. NELSON's present staff of more than 250 professional engineers, scientists, architects, designers, drafters, and support personnel has had extensive experience in the design and construction of refinery and chemical plant facilities.

With our multi-discipline staff, NELSON provides total in-house professional engineering services on projects ranging in size from brief surveys and reports through major facility design and construction. We can provide site selection, permitting, cost analysis, generation of design and bid/construction cost estimates, CPM scheduling, and material specification and procurement. During and following the design phase of the project, our staff can provide total support functions such as bid review, shop and vendor drawing review and approval, resident construction inspection, construction management, QA/QC, start-up assistance, troubleshooting, and operational training and instruction.

Refinery and Chemical Plant Experience

1. Experience in facilities design, from concept through final details, for the following:
 - Refineries, chemical and petrochemical plants
 - Onshore and offshore oil and gas production
 - Pipeline facilities
 - Material-handling facilities
 - Docks and marine terminals
 - Industrial and municipal waste treatment facilities
 - Plant utility systems such as steam, cooling water, compressed gases, & firewater
 - Electrical generation facilities
 - Pollution control and abatement systems
 - Machine design associated with movable locks and bridges
 - Drainage pump stations
 - Industrial and process HVAC and plumbing systems
 - Energy management systems
 - Industrial water and wastewater treating systems
 - Power generation and cogeneration facilities
2. Experience in energy conservation projects including energy audits, systems analysis, and implementation of conservation measures.
3. Computer facilities include CAESAR II (piping, flexibility analysis) and various HVAC design and analysis programs, pipe network analysis programs, and in-house developed line sizing (including two phase flow) and complex conveyor design programs.
4. Working knowledge of all commonly used codes and standards including API, ANSI, ASME, ASTM, TEMA, NACE, NFPA, OSHA, Hydraulic Institute and others.

Previous Clients

In working with our clients to define criteria, design cost effective facilities, and control construction, we have been able to assure timely within-budget delivery of complex projects. NELSON's personnel have successfully performed extensive engineering services for refineries and chemical plants for the following companies:

- Shell Oil Company
- Chevron Chemical Corporation
- Freeport Chemical Company
- Union Carbide Corporation
- E. I. duPont de Nemours & Company
- Gulf Oil Corporation
- Olin Corporation
- Stauffer Chemical Company
- Dow Chemical Company
- Hooker Chemicals Company
- Argus Chemical Company
- Mobil Oil Corporation
- International Matex Tank Terminal
- Murphy Oil USA, Inc.
- Exxon Chemicals America
- Freeport Minerals Company
- Freeport Sulphur Company
- Cytec Industries (American Cyanamid Co.)
- AMAX Nickel Refining Company
- BP Oil Inc.
- Witco Chemical Corporation
- Air Products and Chemical, Inc.
- Allied Chemical Corporation
- Kaiser Aluminum and Chemical Corp.
- Geismar Industries Technical Group
- Gulf Gateway Terminal
- And many others during the past five decades

NELSON is organized in a matrix format for project execution. Project managers are assigned to projects and draw from the required disciplines to form the project teams. For large projects, we form a project task force and locate them in a project office in our building under the direction and control of the project manager. Also, when required, we provide office space in our facility for clients' project manager and staff.

Design Capability

NELSON's engineering departments are comprised of engineers, designers and drafters who encompass a wide variety of experience in refinery, chemical and petrochemical plant work, offshore and onshore oil and gas production, tank terminals, transfer terminals, pipelines, and marine facilities. Our capabilities include the following:

Process Design

Experience in complete design of processes including:

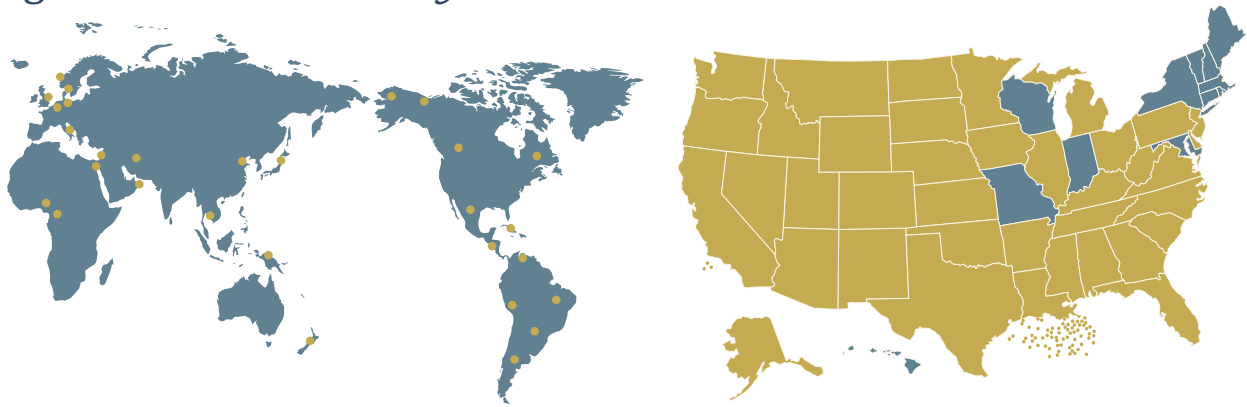
- Selection of feed stocks
- Material balances
- Selection of equipment
- Setting up pilot plants
- Analyzing results of pilot plants
- Development of process flowsheets
- Design of vessels and internals
- Developing full scale operations
- Developing life-of-facilities process simulations

Mechanical Design

The above design capability includes experience with the following:

- Feasibility site selection studies
- Preliminary cost estimates
- Development of final flow diagrams
- Development of P&ID's
- Detailed design of equipment
- Design of tanks and pressure vessels
- Preparation of construction specs
- Field instruction and start-up assistance
- Conceptual facilities layouts
- Preliminary cost estimates
- Detailed cost estimates
- Specification of equipment
- Development of equipment layouts
- Piping and conveyor installations
- Preparation of purchase orders
- Review of vendor/contractor submittals

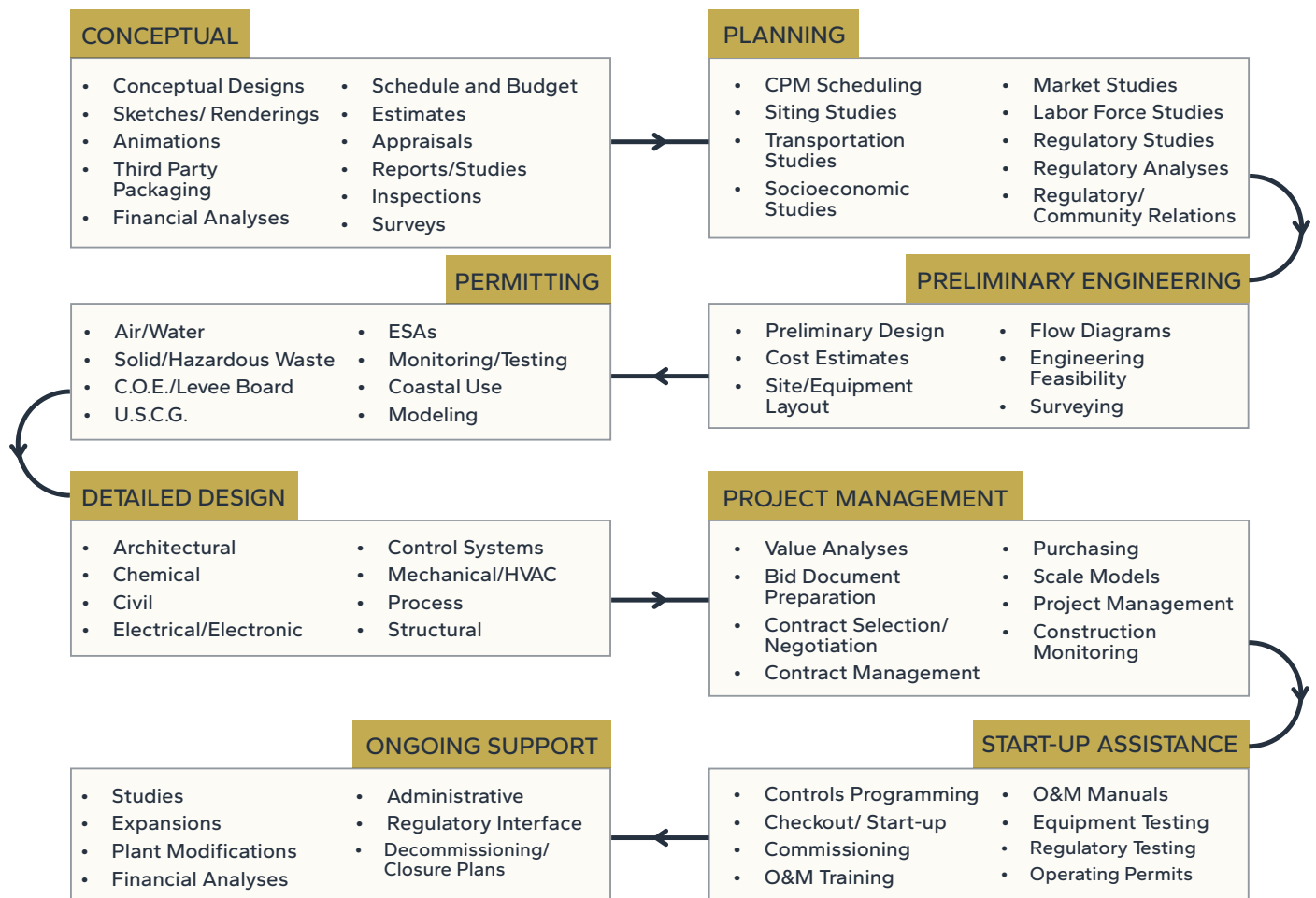
Serving our Clients Nationally and Worldwide since 1945



NELSON has provided professional services in more than 40 states and 60 countries.

All services are provided by locally registered engineers.

Our Process



2025 ENR Rankings

- #357 of Top 500 Design Firms**
- #134 of Top 225 International Design Firms**
- #49 of Top 50 in Oil and Gas**
- #16 of Top 25 in Refineries and Petrochemical Plants**
- #5 of Top 5 in Offshore and Underwater Facilities**
- #5 of Top 10 in Mining**



Visit our website at wsnelson.com or by scanning the QR code above.