



Waldemar S. Nelson and Company, Incorporated
Engineers

Onshore Oil & Gas Facilities, Terminals, and Saltwater Disposal Facilities

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WALDEMAR S. NELSON *and* COMPANY, INC.

WALDEMAR S. NELSON AND COMPANY, INC. is a full-service engineering, architectural and project management firm with offices in New Orleans and Houston serving the oil and gas industry on a broad range of projects worldwide since 1945.

Our staff of over 250 engineers, architects, scientists, construction managers and support personnel blend their many years of experience and expertise with today's technology to deliver state-of-the-art projects fulfilling our clients' scope, schedule and budget needs.

Our ability to provide complete engineering services enables us to work with our clients from the earliest conceptual stage of a project through start-up. We are able to maintain a life-of-the-facility relationship with our clients through continuous support including operator training, regulatory affairs assistance, process upgrades, control software development and many other services.

NELSON has been known for its impressive offshore facility designs. But since 1960, NELSON also has provided safe, environmentally friendly, and economic designs for onshore oil and gas production facilities; saltwater disposal facilities; tank batteries; compressor stations; and pipeline, marine and rail terminals.

NELSON's onshore client base includes ExxonMobil, Shell Western Exploration & Production, Inc., Kinder Morgan, Enbridge, BHP Billiton, SW Energy, Seneca, and Genesis. Some of our recent major projects are listed below:

1960s-present

International-Matex Tank Terminals: Dozens of projects associated with the storage, transfer, and loading / unloading via truck, rail, barge, ship of multiple petroleum and other fluid products (crude, six oil, asphalt, methanol, vegetable oil).

2014-present

Shell Western Exploration and Production, Inc.: Multiple Central Processing Facilities, including King Stallion, 10K Generic and 15K Generic Central Processing Stations. Each facility consisted of gathering lines, separators, heater treaters, tank batteries, LACT Skids, pipeline pumps, standby generators, and central power and control buildings.

2014-present

Shell Western Exploration and Production, Inc.: Multiple Saltwater Disposal Stations. Each facility consisted of a process train of tanks, charge pumps, pipeline pumps (Discharge pressure rated for 3700 psig), pipe manifold, and pipeline design to the edge of property.

2013 -2015

Gulf Gateway Terminal (pictured): Rail to barge crude transfer terminal. Crude arrives via unit train and can be stored in an on-site tank or pumped to barge.



Chemical/Process

Typical Projects

- Availability/Reliability improvements
- Relief & safety systems reviews/Upgrades
- Dispersion studies due to incident scenarios
- Process modifications & upgrades
- Debottlenecking
- Push-the-limit workshops/seminars
- Refinery topping/Processing units
- Tank farms & related facilities
- Pumps & pipeline pump stations
- Gas pipelines/Compressors/Metering
- Gas plants
- Water treatment facilities
- Waste stream recovery

Typical Studies

- Recycling
- Plant safety systems HAZOP/HAZID
- Preliminary hazards analysis
- Relief & safety systems
- Water treatment
- Availability/Reliability
- Compression/Pumping
- Gas treating
- Process heating
- Emissions (air, water, sewage, etc.)
- Tank venting/emissions
- Flare & radiation
- Equipment sizing
- Line sizing
- Firewater system network flows
- Cooling system network flows
- Gas/liquids pipeline network

Mechanical/Piping

- Greenfield/Brownfield oil & gas facilities
- Compressor stations
- Pressure vessels
- Atmospheric tanks
- Pumps and pumping stations
- Turbo-machinery
- Heat exchangers
- Filters and filtration systems
- Insulation
- Instrument/Plant air systems
- Water treatment facilities
- Pipelines/Compressors/Metering
- Fire suppression systems
- Solids & bulk handling
- Cogeneration
- Heating, ventilation and air
- Conditioning

- Piping/Piping specialty items
- Line sizing and velocity limitations
- Sour system piping
- Cryogenic system piping
- Hydraulic power systems
- Conveyor systems
- Heat exchanger sizing
- Pumping and metering
- Gas compression/Staging
- Heating and cooling
- Waste heat recovery
- Pipe stress analysis/Code compliance
- Piping flexibility
- Acoustical/Noise abatement
- Flow induced pulsation
- Remediation
- Flare, exhaust and vent
- Blowdown
- Line and equipment sizing
- Firewater system network flows
- HVAC system analysis
- Energy audits
- Energy conservation studies
- Building/Plant energy management

Civil/Structural

Site Engineering

- Site layout/Development
- Roads
- Drainage
- Wastewater
- Impoundment
- Utilities
- Security/Safety
- Levee crossings
- Grading
- Parking facilities

Foundations

- Pumps
- Compressors
- Generators
- Cooling towers
- Reactor vessels
- Pressure vessels
- Tanks
- Towers
- Buildings

Structures

- Topsides decks
- Pipe racks
- Pipe support systems
- Flare towers
- Equipment skids
- Generator buildings
- Pump buildings
- Compressor buildings
- Manufacturing buildings
- Maintenance buildings
- Office buildings
- Heliports/Helidecks

- Material handling
- Material storage facilities
- Fixed bridges
- Moveable bridges
- Conveyor galleries

Docks/Wharves

- Ship & barge docks
- Bulkheads
- Jackets
- Loading platforms
- Access roadways & ramps
- Mooring & breasting dolphins
- Barge fleet facilities
- Container galleries
- Accident investigations

Waterways and Flood Control

- Locks & dams
- Levees & floodwalls
- Flood gates
- Flood walls/Levees
- Drainage pump stations
- Bulkheads
- Canals

Electrical

System Analysis

- Load flow studies
- Relay coordination
- System evaluations
- Utility negotiations
- Power cost studies
- Arc flash studies
- Motor starting analyses
- Design reviews
- Reliability studies

Generation

- Gas turbine generators
- Steam turbine generators
- Gas engine generators
- Diesel engine generators
- Cogeneration
- Waste heat recovery

System Design

- Transmission lines
- Distribution lines
- High voltage systems
- Medium voltage systems
- Low voltage systems
- Substations/Switchyards
- Switchgear
- Motor control
- Uninterruptible power
- Emergency power

Controls

- D.C. motor controls
- Programmable controllers
- Variable speed drives
- SCADA Systems
- Generator controls
- Motor controls
- Central control systems
- Mimic/Monitor panels

Site Engineering

- Site layout/Development
- Roads
- Drainage
- Wastewater
- Impoundment
- Utilities
- Security/Safety
- Levee crossings
- Grading
- Parking facilities

Control Systems

FEED

- Feasibility studies
- Safety analysis
- HAZOP/HAZID
- HSE support
- SIL determination
- Failure calculations
- P&ID development
- Cost/benefit analyses
- Design basis documents
- System evaluation
- Procedures
- Project specifications
- HMI standards
- Navigation tools

Detailed Design

- Control room layout
- CRT HMI layouts
- Non-CRT HMI layouts
- Control architecture
- Safety system architecture
- Logic/Control systems
- Configuration
- Programming
- Regulatory configuration
- Regulatory programming
- Panel design
- Marshalling racks
- Instrument specifications
- Instrument datasheets
- Database development
- Procurement activities

Information Technology

- Maintenance systems integration
- Business systems integration
- Process modeling
- Network design
- Production data via web sites

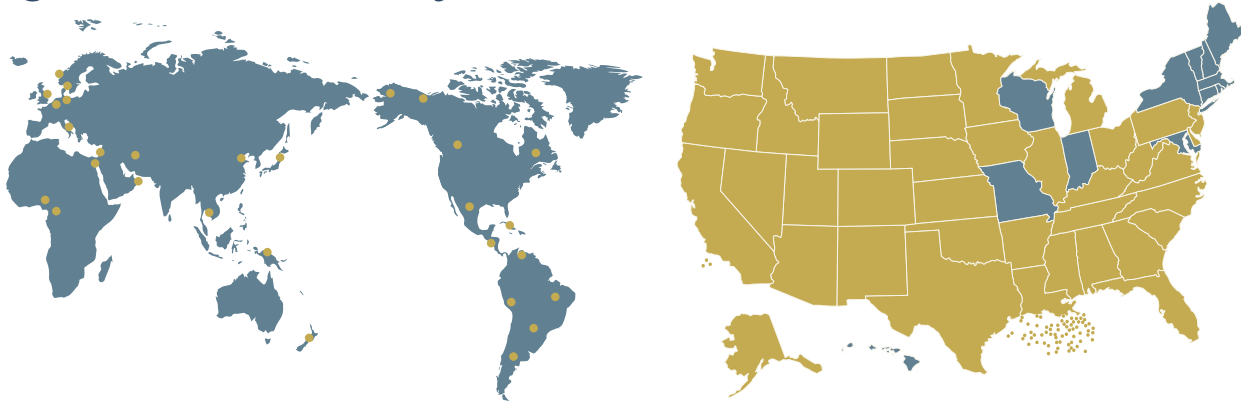
PM/Controls

- Automation project management
- Pre-commissioning management
- Integration management
- "Hot cutover" activities

Training

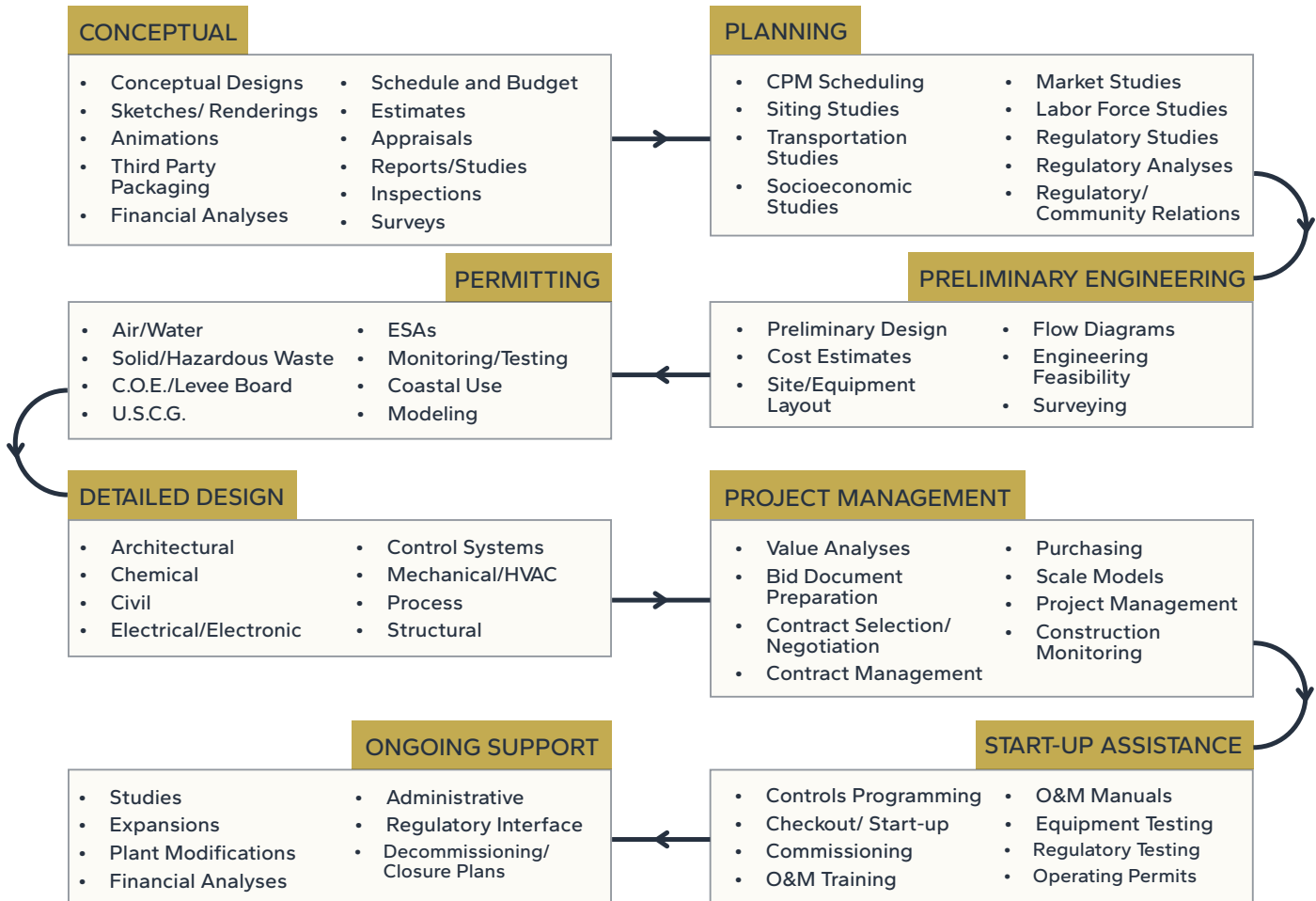
- Operator HMI training
- Developing and implementing
- Training manuals

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



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