



IMAGE CUSTOM ENGINEERING SOLUTIONS

SUMMARY OF QUALIFICATIONS

COMPANY HISTORY

IMAGE Custom Engineering Solutions (IMAGE) is a Texas based Limited Liability Company established in 2003.

IMAGE CES offers Project Management, Engineering, Design and Supply Chain Management services encompassing balance of plant installations and equipment modular/skid design encompassing pressure vessel engineering. Internally owned and operated since 2004, IMAGE remains competitive and flexible supplying our related industry with client support that meets each project need. With a history of integrating with client teams for cost effective applications to total project design control, IMAGE maintains a high level of success for our clients.

IMAGE provides services applying the latest available technology including, when warranted, 3D CAD intelligent design utilizing an in house developed custom software solution (EDGE Solid Solutions) that deliver Bills of Material ready for purchasing, improved communications across disciplines, effective document control, improved reliability, and better productivity resulting in project quality, cost, and delivery goals.

Equipment Engineering and Design

IMAGE offers a broad range of Engineering Services specializing in Equipment Engineering & Design for packaged equipment fabricators and processing facility construction companies. Typical equipment packages include:

- Compressor Stations
- Amine Plants
- Stabilizer Assemblies
- Fuel Gas Conditioners
- Choke Assemblies
- Sump Tanks
- Separators
- Compression Packages
- Glycol/Gas Contactors
- Glycol Reboilers
- Line Heaters
- Sand Traps
- Coalescers
- Air Receiver Tanks
- Meter Skids
- Flash Tanks
- Heat Exchanger Assemblies
- Gas Chromatograph Assemblies
- Chemical Injection Assemblies
- Dewpoint Control Plants
- Cryogenic Gas Plants
- JT Skids
- Pressure Reduction & Metering Stations
- Biocrude Processing Plants
- Pump Stations
- Truck and Rail Loading Terminals
- Filter Separators
- Production Units
- Heater Treaters
- Slug Catchers
- Pig Launchers & Receivers
- Free Water Knockouts
- LNG Storage Tanks
- Gas Dehydration
- Hydrocyclones
- ESD / SDV Assemblies
- Equipment Structural Skids
- Access Ladders & Platforms

IMAGE offers the following services in our Equipment Engineering Packages.

- P&ID Development
- Engineered BOM Development
- Equipment, Line, Valve, Instrument, Drawing Lists
- CADWorx Spec Development
- Pressure Vessel Design Calculations (ASME Section VII, Div. 1 & 2)
- Skid Design Calculations
- 3D Vessel, Structural, and General Arrangement Dwgs
- Piping & Steel BOM
- Material Take-offs
- Isometric Drawings
- Project Engineering
- Project Management
- Material Procurement Support
- Construction Surveillance
- Civil/Structural Engineering & Design
- Electrical/Instrumentation Engineering & Design

Compression Engineering and Design

Those who know about compressor package design know that a lot of experience goes into a good design and that a lack of experience can be a disaster. With well over 100 years in accumulated compression packaging experience, the IMAGE team will help you avoid the common pitfalls and provide a repeatable path to success. From front end P&ID development, to the tedious details required for an economical yet robust foundation, IMAGE has the ability to perform.

- Intelligent P&ID's with live Data Base
- General Arrangement Drawings
- Scrubber & Bottle Drawing and ASME code Calculations
- Enhanced Weight and CG calculation Method
- 3D model (with Smart Design Review via EDGE 360)
- Structural Steel Skid Base and Misc. Steel
- ISOGEN generated Isometric Drawings
- Detailed Bill of Materials delivered in Excel

IMAGE can handle all of the details required to deliver success. Confirming major equipment performance, managing Pulsation & Torsional Study, working with panel vendor, performing ASME code calculations, structural analysis, lift analysis, PSV sizing, recycle control, startup bypass sizing, settle out calculations, coupling selection, sizing cooler sheaves. These are just a few of the things that are often overlooked or under evaluated. Not all of the above is necessary in every design, but knowing when to ask the question is paramount. IMAGE will help you identify all the hazards as appropriate for your particular design and then provide the support to properly evaluate solutions and mitigate risk.

Facility Design

IMAGE Custom Engineering Solutions expanded its Engineering Services offering to turnkey facility design. From a simple Pressure Reduction and Metering Station to an entire Gas Processing Plant, IMAGE can provide Mechanical, Civil, and Electrical & Instrument Design. IMAGE applies the latest technology including 3D CAD design for faster, more accurate deliverables. All project related documents are issued through EDGE 360 which boasts Intelligent P&ID's, Intelligent 3D Models, and scaled drawings that can be viewed and printed 24/7 from anywhere our Customers have an Internet connection. IMAGE will provide Bulk MTO's for all required materials and provide Add/Delete MTO's to your procurement staff when a change is required. IMAGE employs wide use of in house developed custom software solutions to expedite the Design Phase deliverables. Our understanding of the fabrication processes, materials, costs, quality, and industry codes help us design a facility that is as efficient, affordable, and safe to build and operate as possible.

Mechanical Engineering and Design

- Registered Professional Engineer's on staff for required stamps and tasks.
- Pressure Vessel Design (ASME Section VIII, Division 1 and 2).
- Vessel Fabrication Drawings
- Interactive Intelligent P&ID Development.
- Equipment, Valve, Instrument & Line Lists.
- Engineered Bill of Materials Development
- 3D CAD Design Review- virtual walk through for HSE/OPS
- ASME Pressure Vessel calculations including local stress calculations.
- General Mechanical Engineering
- Pipe Stress Analysis
- Finite Element Analysis
- Plant Layout and Section Details
- Equipment General Arrangement Drawings
- Piping Isometric Drawings
- Engineering Data Acquisition
- Project Engineering / Project Management
- Databook Compilation
- Material Procurement
- Construction Surveillance
- Witness and document factory acceptance test

Civil / Structural Engineering and Design

- Foundation Calculations
- Civil Engineering calculations
- Foundation Location Plans
- Skid and Equipment Concrete Plans & Elevations
- AISC Structural calculations (Onshore and Offshore)
- Structural Skid Design & Detail Drawings
- Rebar Schedules
- Plot plan
- Foundation drawings
- Anchor bolt design and location drawings
- Professional engineer stamped as required
- Full Bill of Material

Instrument / Electrical Engineering and Design

- Professional Engineer stamp
- Engineered Bill of Materials Development
- One-line diagrams
- Loop Diagrams
- Switch Gear / Motor Control Center (MCC) plan, elevation, design, schematics and specification development
- Electrical / Control Panel design, Details and diagrams
- Electrical equipment location plans
- Cable tray drawings; plan, loading and details
- Cable Schedules: power, motor control and lighting
- Equipment Grounding Details
- Skid instrument installation details Electrical power load list
- Block and Wiring Diagrams / Details
- Instrument Specification Development
- Hazardous area classification plans and details
- I/O Area Plan
- Interconnection wiring diagrams: power/normal and uninterrupted power supply
- Grounding and lightning protection study per NFPA 70, plans and details
- Lighting plans and details
- Electrical tray and bulk items
- Electrical interface/wiring details drawings
- Heat Tracing plans and details
- Control system communication cable layout
- Fire & Gas Plan and Details
- Remote equipment / interface drawings

Field Services

IMAGE Field Services provides a fast, safe and accurate alternative to antiquated “Tape and Level” As-Built development. Instead, accurate 3D models of Piping systems are developed using CADWorx fieldPipe for Leica fieldPro, leveraging the speed of “Point and Shoot” Measurement with the power and precision of Laser EDM technology aboard the Leica Geosystems’ Total Station. This software allows IMAGE to model any piping system with pinpoint accuracy. IMAGE can develop 3D plant models on-site and in real-time. This dimensional and material information can then be used to generate accurate Fabrication and Assembly Isometric drawings, Bills of Materials, Weld Maps, Cut Lists, and more. All this can be generated in the field on demand and approved and verified in real-time on-site.

- As-Built Dimensioning
- Accurate “Tie-in” Locations
- Overhead or Difficult to Access Piping
- Dimensional Survey for Stress Analysis
- Piping Dimensional Validation.

KEY PERSONNEL

- Don Nuckels, P.E. - President
- Ryan Bromm - Vice President
- Chris O'Brien - Engineering Manager
- Stewart Kaiser - Design Manager
- Greg Miller - Field Services

REGISTRATIONS / CERTIFICATION

- ISNetworld
- Houston Area Safety Council
- Contractors Safety Council
- Industrial Safety Training Council
- Texas Board of Professional Engineers - Registered Engineering Firm
- Louisiana Professional Engineering and Land Surveying Board - Registered Engineering Firm
- Kansas State Board of Technical Professions - Registered Engineering Firm (in progress)

LIST OF PROJECTS

SMALL PROJECTS -Recent Projects

- Modular Amine Plants
 - 7.5 GPM
 - 30 GPM
 - 60 GPM
 - 100 GPM
 - 400 GPM
- Top Sides for Marine Capture Vessel
 - HP Separator Modules
 - LP Separator Modules
 - Degasser Modules
 - Pipe Rack Modules
 - Methanol Pump Modules
 - HP Inlet Choke Modules
- Nitrogen Generation Packages
- Sand Separator Packages
- Well Test Separator Packages
- Pig Launcher and Receivers
- Modular Pipe racks for on-shore service
- Off Shore Dehydration package
- Sulfa Treat Vessels
- Heater Treaters
- 2 Phase and 3 Phase Separators
- Filter Separators
- Line Heaters
- Glycol Regeneration Packages
 - 125M
 - 250M
 - 375M
 - 500M
 - 750M
 - 1.0MM
 - 1.5MM
 - 2.0MM
 - 2.5MM
 - 3.0MM

COMPRESSION-Recent Projects

- Drivers
 - Caterpillar
 - G3304B NA
 - G3306B NA
 - G3306B TA
 - G3508B LE
 - G3512B LE
 - G3516B LE
 - Cummins
 - KTA19GC
 - Waukesha
 - L7044 GSI
 - Electric Drive
 - 1500 HP
 - 200 HP
- Compressors
 - Ariel
 - JGT/4
 - JGA/4
 - JGJ/4
 - JGQ/2
 - JGP/2
 - JGC/4
 - JGD/4
 - GE
 - H302
 - NGSGI
 - CIP PXT-2

FACILITY DESIGN-Recent Projects

- Pine Prairie
 - Grass Roots 125MMSCFD Cryogenic Gas Plant
 - Inlet Separation/Filtration
 - 400 GPM Amine Unit
 - Dehydration
 - Fractionation
 - Compression



- Abbeyville - North Beach
 - Phase II Facility Expansion
 - Inlet Separation/Filtration
 - Propane Refrigeration
 - Dehydration
 - Stabilizer
 - Compression



- Targa
 - Grass Roots 200MMSCFD Cryogenic Gas Plant
 - Inlet Separation/Filtration
 - 450 GPM Amine Unit
 - Dehydration
 - Fractionation
 - Refrigeration
 - Compression
 - RTO with cold vent and LP Flare
 - Storage



- Termoyopal
 - 40MMSCFD Cryogenic Facility in Yopal, Colombia
 - Cryogenic Skids
 - Dehydration
 - Condensate Stabilization
 - Compression
 - LPG Storage and Truck Loading
 - Modularized Pipe Racks



- Tres Hemanos
 - 60MMSCFD Compressor Station with CO2 Treatment
 - 7 Compressors
 - 2 JT Skids
 - Dewpoint Plant
 - Modularized Pipe Racks



- Tenawa Haven Gas Plant Facility
 - Grass Roots 1BSCFD Cryogenic Gas Plant
 - Cryogenic Skids
 - Dehydration
 - Fractionation
 - Waste Heat Recovery Units
 - Compression



FIELD SERVICES-Recent Projects

- CenterPoint – Compressor Station as-built (250 Sites)
- Koch Pipeline – various site as-builts (pump stations, etc.- 150 sites)