

A photograph of an industrial facility, possibly a refinery or chemical plant, featuring large cylindrical tanks, complex piping systems, and metal walkways. The scene is dimly lit with a blue color cast. The text 'STRONGHOLD' is overlaid in large white letters, with 'Companies' in a smaller, italicized font below it, flanked by horizontal lines.

# STRONGHOLD

— *Companies* —

[www.thestrongholdcompanies.com](http://www.thestrongholdcompanies.com)



**We are a purpose built group of specialty companies providing turnkey turnaround and tank services for the refining and petrochemical industries.**

Stronghold provides our partners the safest, most efficient quality solutions in the industry. We achieve this by developing and cross-training highly skilled craftsmen, investing in state-of-the-art equipment, and utilizing effective methods which provide significant cost and productivity synergies.




Mission Statement

**Consistently provide  
the best Safety,  
Quality, and Superb  
Services through a  
Culture of keeping  
People first in  
Education and  
Reward**

**strong-hold**

*/strɒŋˌhəʊld/*

A place where a particular cause or  
belief is strongly defended or upheld



## Our People are the Difference

Stronghold employs full-time supervision and key craft year round, which delivers consistent industry leading performance in safety and quality.

A large-scale industrial construction project featuring a massive cylindrical tank. Several workers in high-visibility safety gear are positioned on a metal platform with safety railings, working on the tank's exterior. The scene is set against a clear blue sky. The image is partially overlaid with a dark blue gradient and a red vertical bar on the right side.

## We Invest in Our People

by setting a new standard in training, state-of-the-art equipment, and innovative methods, which makes Stronghold the premiere solution. In return this reduces overall project cost, shortens schedules, and creates higher asset reliability.

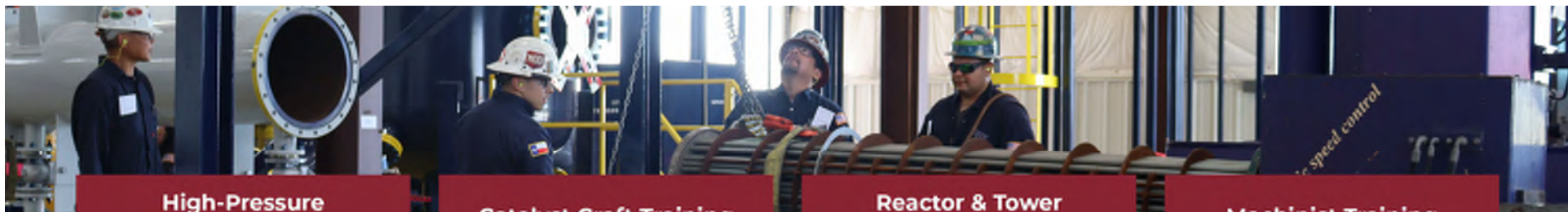


## Stronghold University

The Stronghold University is an advanced craft training center that provides a balanced learning approach combining theoretical, technical, and hands-on modules in order to train our employees with real-life scenarios.

Est. 2020





### High-Pressure Mechanical Training

- ASME PCC-1 controlled bolting
- Torquing and tensloning
- Induction bolt heating
- Ultrasonic bolt monitoring
- Blinding
- Exchanger maintenance
- NCCER rigging
- LOTO and permitting awareness

### Catalyst Craft Training

- API 2217A Inert entry
- Catalyst principles
- Confined space rescue
- Console module supervisor
- HD camera systems with remote video sharing
- Catalyst loading and unloading operations
- Grubbs manifold test

### Reactor & Tower Tray Training

- Multi-vessel and multi-bed
- Tray removal and installation
- Tray repair and maintenance
- Tray tunneling
- Packing training

### Machinist Training

- Precision field machining
- Flange facing
- Milling
- Line boring
- Drilling and tapping
- Cold cutting
- Double block line Isolating

### Inspection Training

- NDE VT – Visual Testing
- NDE UT – Ultrasonic Testing
- NDE PT – Liquid Penetrant Testing
- NDE MT – Magnetic Particle Testing
- NDE RT (X-Ray) – Radiographic Testing
- NDE MFL – Magnetic Flux Leakage
- API 510, 570, 571, and 653

### Tank Training

- Tank erection
- Floating roof erection
- Floating roof air raise
- Floating roof seal installation
- Tank inspection
- Wind girder scaffold awareness
- Wind girder scaffold competent person
- Shell plate installation
- Cone roof structure training
- Cone roof installation
- Column jacking

### Instrumentation & Electrical Training

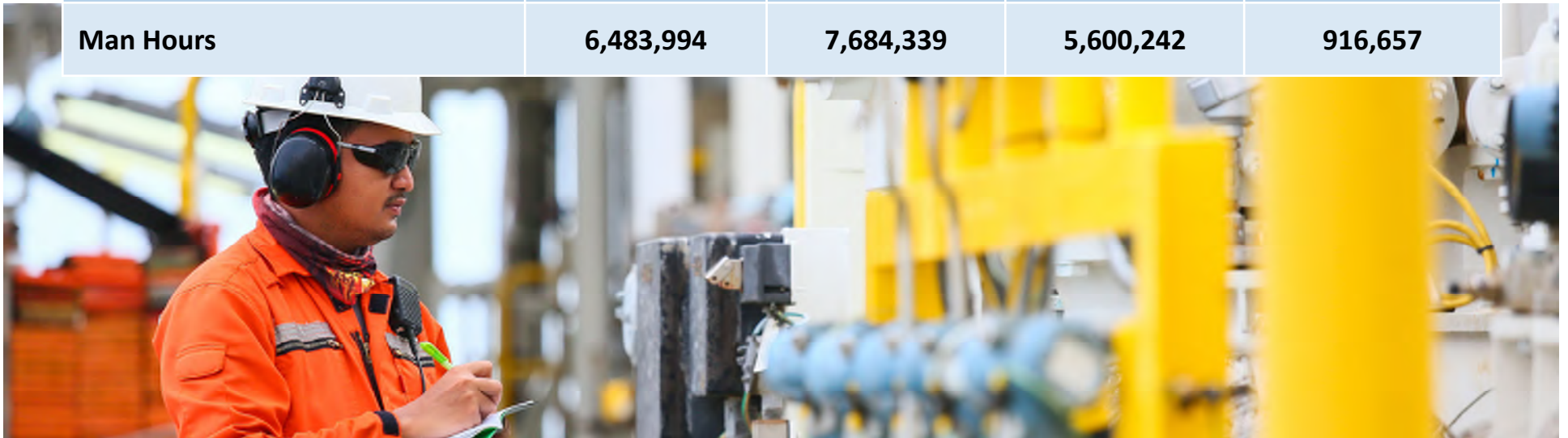
- Conduit bending
- Tubing fitting
- 3M and Raychem hot and cold shrink stress
- Cone (training and certification)
- 100V-5K VAC wire/ cable MEG testing
- Motor testing
- Motor controls diagnostics and troubleshooting
- Breaker and trip relay testing
- 5KV-35KV Hi-Pot testing
- NFPA 70E training
- Bench calibration and testing

### Stronghold Leadership Training

- Senior management
- Project management
- Advanced field project leadership (Superintendent)
- First-line leadership (Supervisor/ Foreman)
- Project support

# Safety Key Performance Indicators

KPI	2018	2019	2020	2021 YTD
TRIR	.12	.23	.07	0.0
LTIR	.03	.13	.04	0.0
Lost Time Injuries	1	5	1	0
Recordable Injuries	4	9	2	0
EMR	.68	.67	.65	.65
Man Hours	6,483,994	7,684,339	5,600,242	916,657





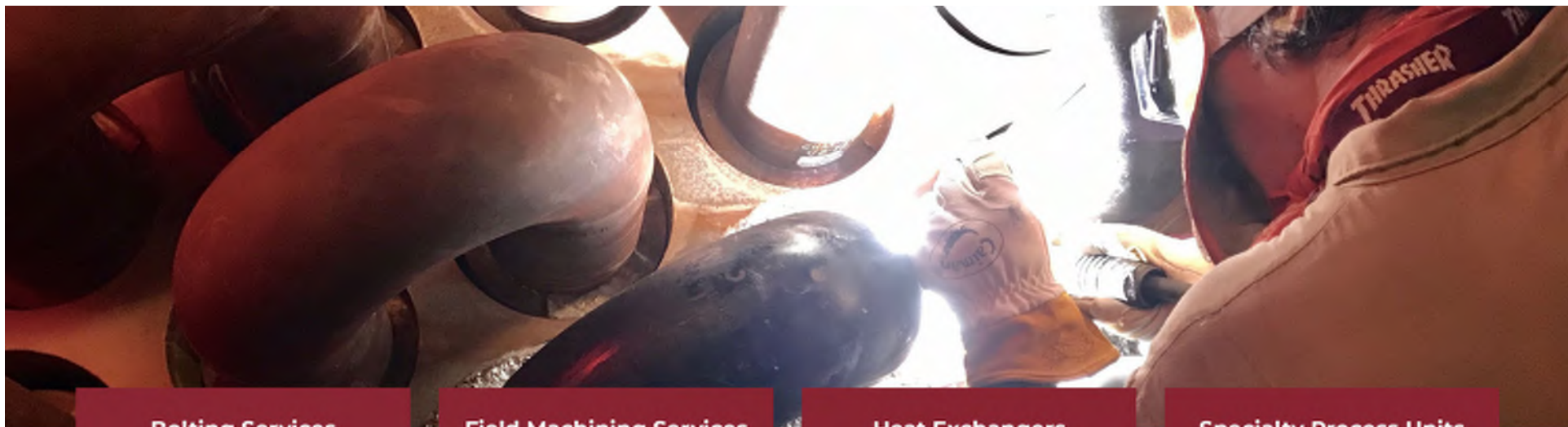


## Elite Turnaround Specialists, Ltd.

Elite Turnaround Specialists, Ltd. (ETS) provides complete turnaround and fabrication services with the highest skilled crafts and a custom-designed equipment fleet ready to handle the needs of each individual client.

Est. 2012





### Bolting Services

- Break-outs or make-ups
- Torquing
- Tensioning
- Bolt measurement
- Nut splitting
- Heat Induction
- Hot bolting

### Field Machining Services

- Flange facing up to 20' dia.
- Drilling and tapping
- Line boring
- Shaft turning
- Isolation plugs
- Up to 180" clamshell (pipe cutting and beveling)
- Milling (motor/ pump bases)

### Heat Exchangers

- Bundle extractions
- Re-tubing
- Condensers
- Fin Fans
- Tube ferrules and sleeves
- Reboilers
- Specialty exchangers (Breach Lock, etc.)

### Specialty Process Units

- Hydrotreaters
- Hydrocrackers
- FCC
- Alky/ SRU
- Crude/ Coker

### Specialty Alloy Welding & Furnace Boilers

- FCAW (Flux Core)
- GMAW (Mig)
- GTAW (Tig)
- SAW (Sub-Arc)
- SMAW (Stick)

### ASME Certifications

- "R" Stamp
- "U" Stamp
- "S" Stamp
- "pp" Stamp

### Specialty Services

- Rigging engineering (P.E. on staff)
- Critical lift planning
- Temporary structures (Jig stands, temporary supports, etc.)
- Monorail and track design
- Lifting attachment design and analysis
- Constructability and lift studies
- Vessel openings (door sheets)



## ETS Fabrication Shop

The Elite Turnaround Specialists Fabrication facility offers full-time CWI, QA/QC, and trained staff with the latest technology available in pipe fabrication.

Est. 2012





### ETS Carbon/ Chrome Shop

- Shop area: 25,000 square feet
- 16 Acres of laydown area
- 3 - 10 Ton overhead cranes
- 18 - 1 Ton davit arm stations
- 2 - Automated welding stations
- 10 - Manual weld stations w/ IRCO positioners
- 6 - Pipe fitting stations w/ IRCO positioners
- 12 - Pipeworx 400 welding machines
- WATTS 4 axis computer controlled pipe cutter
- Vessel fabrication
- AXXAIR orbital pipe cutting and beveling machines
- Process piping fabrication

### ASME Certifications

- "R" Stamp
- "U" Stamp
- "S" Stamp
- "PP" Stamp

### Stainless Steel/ Alloy Shop

- Shop area: 8,000 square feet
- 2 Acres of laydown area
- 6 - 1 Ton davit arm stations
- 2 - Pipeworx 400 welding machines
- 4 - Power positioners



## Stronghold Tower Group, Ltd.

Stronghold Tower Group, Ltd. (STG) is a specialized company with highly trained craft that perform construction and turnaround services for optimized tower performance.

Est. 2017





### Tower Services

- Blind to blind capabilities
- Open and inspect
- Clean and repair
- Tower revamps
- Bolt torquing and stud tensioning
- Tray removal and installation
- Coded internal vessel welding
- Nozzle replacement
- Can section/ head replacement
- Rigging engineering

### Structured/ Random Packing

- Sheet metal, gauze, and knitted packing
- Metal and plastic pall rings
- Metal super pall rings
- Plastic random packing
- Carbon and metal raschig rings
- Ceramics products
- Catalyst packing
- Grid packing

### Vessel Internals

- Mixing trays
- Bubble cap trays
- Sieve trays
- Valve trays
- Dual flow
- Distributor trays
- Liquid distributors
- Support grids
- Mist eliminators (vane and mesh)

### ASME Certifications

- "R" Stamp
- "U" Stamp
- "S" Stamp
- "PP" Stamp



## Elite Piping & Civil, Ltd.

Elite Piping & Civil, Ltd. (EPC) is the construction and maintenance arm of ETS that provides civil, piping, and structural services through an experienced project leadership team for an integrated turnaround and capital project solution.

Est. 2009





### Civil Construction

- Heavy earth-moving
- Site clearing and grading
- Drilled piers/ pile cap foundations
- Tank foundations (Ring Walls/ El Segundo)
- Equipment foundations
- Structural support foundations
- Concrete wall
- Roads
- Containment dikes
- Excavation/ backfill
- Site stabilization
- Concrete paving
- Site drainage
- Epoxy/ cementitious grout
- Retention ponds

### Pipe Fabrication & Installation

- Carbon steel pipe fabrication/ installation
- Stainless steel pipe fabrication/ installation
- Underground piping
- Specialty alloys
- Field routing
- HDPE pipe installation
- Hot tap welding
- Bolting
- Hydrotesting

### Structural & Equipment Erection

- Unit support structures
- Light and medium steel fabrication/ installation
- Pipe racks
- Stairs, ladders, and platforms
- Rail/ truck loading racks
- Electrical support systems
- Fabrication
- Equipment setting

### Construction Management

- Estimating
- Planning, scheduling, and progress tracking
- Constructability and engineering reviews
- Sub-contract administration and coordination
- Material management and controls
- Accounting and cost control
- Project quality assurance and controls
- Safety management





## Cat-Spec, Ltd.

Cat-Spec, Ltd. (CSL) is the leader in turnkey catalyst services with decades of management and field experience providing unsurpassed knowledge and performance.

Est. 2002





## Complete Blind to Blind Services

### Bolting, Blinding, & Mechanical

- Hydraulic torquing and tensioning
- Hydraulic nut-splitting
- Heat Induction
- Inlet/ outlet head removal
- Unit Isolation blinding
- Internal tray repairs, demolition, and install
- Radial flow reactor internal repair

### Catalyst Unloading

- Gravity/ wet dump
- Fixed bed vacuum unloading
- Catalyst and support material screening
- Inert (IDLH) and non-inert entry
- Tube sheet air-lance catalyst removal
- Tube sheet fish-tape
- Caradox/ explosives catalyst fracturing

### Catalyst Loading

- Fixed bed inert (IDLH) and atmospheric loading
- Fixed bed sock/ dense loading
- Primary reformer tube dense loading
- Specialty tubular loading
- Reformer tube and tube sheet DP testing
- HD video monitoring and inspection

### Specialty Units/ Vessels

- Multi-bed HCU, DHT, GOHT, ISOM, etc.
- CCR/ Radial flow reactors
- Primary reformers
- Cat pack towers/ GDU's
- RESID CFH
- Tubular reactors
- SRU Claus Scot Tail gas
- Styrene Polyethylene
- Secondary reformers, HTS, LTS, Methanator
- Ammonia synthesis

### Specialty Equipment

- Digital life support and monitoring systems
- Portable and fixed gas detection systems
- Confined space rescue systems
- Decontamination trailers
- Vacuum systems
- Dust control units
- Multi-separation catalyst screeners
- Blind to blind mechanical support trailers
- Welding trailers for internal repairs and revamp
- Reformer and tubular Delta-P systems
- Tube sheet loading carts
- Industrial elevator rentals
- Catalyst conveyors

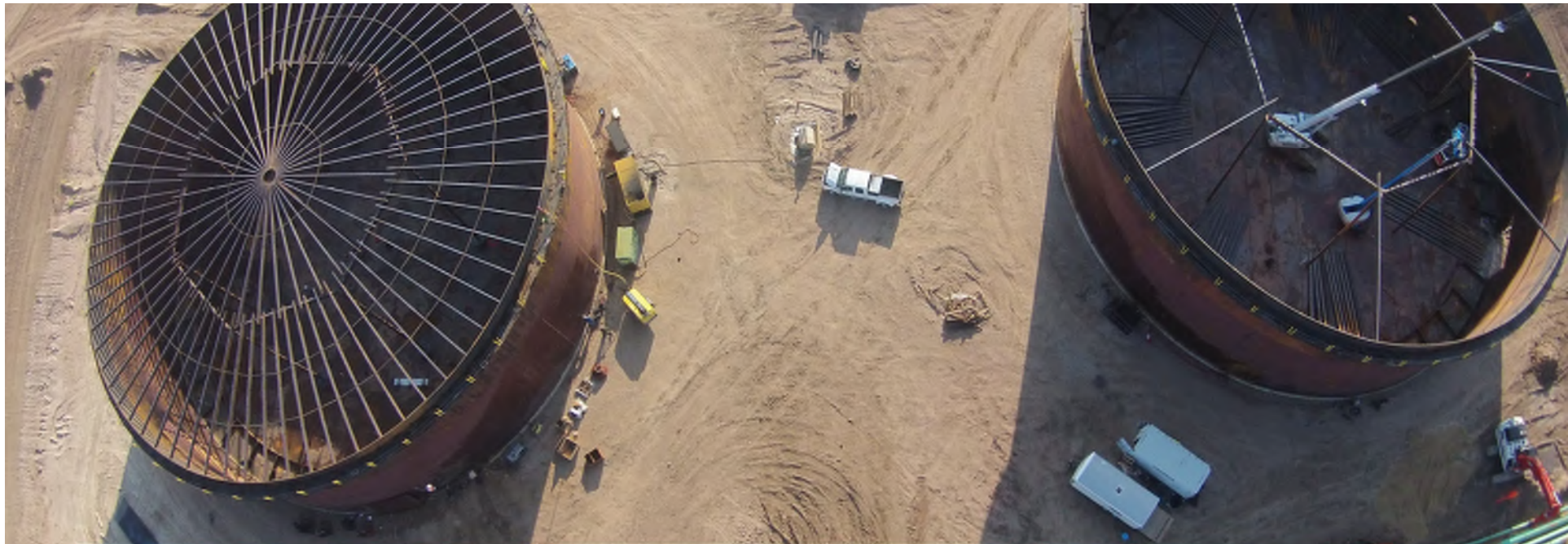


## Specialty Tank Services, Ltd.

Specialty Tank Services, Ltd. (STS) specializes in the maintenance, repair, design, fabrication, and field erection of above-ground storage tanks. STS utilizes complete API 650/620/653 standards along with in-house engineering and design services.

Est. 2007





### Engineering & Design

- Complete engineering packages for API 650/ 620 new construction and API 653 repairs
- Code interpretation
- In-house Professional Engineers
- Fitness for Service evaluations
- Hydro-exemption letters
- Normal and emergency venting evaluations
- Tank re-rate evaluations
- Foundation settlement evaluations
- Cone roof structure failure analysis

### Construction & Maintenance Services

- Complete API 653 repairs
- Complete API 650 and API 620 new tank construction
- Tank foundations
- Cathodic protection and leak detection
- Floating roof tank conversions
- Primary and secondary seal inspections, installations, and repairs (specifically dedicated crews)
- Geodesic dome roof installations and repairs
- In-service seal replacement and repairs
- Storage tank lift and level for foundation modification
- Aluminum Internal Floating Roof (IFR) installation and repair

### Specialty Equipment

- Automatic girth welders
- Buggo vertical welders
- LT7 floor tractors
- Top angle welders
- Vertamatic welders
- Skid steer hydraulic floating roof jacks
- Electric and pneumatic air raising equipment
- Temporary girder tank scaffolding



## Elite Fabrication, Ltd.

Elite Fabrication, Ltd. (EFL) specializes in tank components, structural steel, and module fabrication. EFL is available to our clients and all Stronghold companies for emergency, turnaround, and project support.

Est. 2009





### Quality Control & NDE

- Radiographic Testing (RT)
- Liquid Penetrant Testing (PT)
- Ultrasonic Testing (UT)
- Magnetic particle dry or wet fluorescent
- Positive Material Identification (PMI)
- Hardness testing
- Hydrostatic/ pneumatic testing

### Equipment & Capabilities

- Plate roll - 10' x 1"
- CNC plate burn table - plasma cut oxy/propylene, single/ double bevel - 1 1/2" x 10'
- Angle roll - 4" x 3" x .375"
- Press brake - 400 ton x 20' x 5/16"
- Pipe roll - 4"
- Welding - FCAW (Flux Core), GMAW (Mig), GTAW (Tig), SAW (Sub-Arc), SMAW (Stick)

### Facility

- Shop area: 60,000 feet
- 8 Acres of laydown area
- 3 - 10 Ton bridge cranes
- 2 - 15 Ton bridge cranes



## Stronghold Inspection, Ltd.

Stronghold Inspection, Ltd. (SHI) is the premier inspection company that provides turnaround services, on-stream inspection, specialty NDE, vendor surveillance, rope access, and inert inspection.

Est. 2009





### Turnaround Inspection

- Supply pre-T/A evaluation and assist in turnaround planning/ scheduling
- Track inspection status and completion percentage throughout the turnaround
- Knowledgeable in damage mechanisms of various petrochemical processes
- Final reporting and documentation
- Cloud based Turnaround Management Program



### On-Stream Inspection

- Provide API 510, 570, 571, 653, and 936 inspection services to existing and new Mechanical Integrity (MI) and Process Safety Management (PSM) programs
- Provide NDT (UTT, MT, PT, RT, PMI, BH, Rope Access) and specialty services (UTSW, PA, AUT) as required for on-stream programs
- Provide NDT, AutoCAD, and drafters for new and ongoing Corrosion Monitoring Location (CML) programs
- Provide personnel knowledgeable in analysis and working in various corrosion monitoring software programs

### Non-Destructive Testing

- Ultrasonic Thickness Testing (UTT)
- Radiographic Testing (RT)
- Open Vision (OV)
- Rope access inspections
- Phased Array (PA)
- Automated scanning
- B-Scan manual and automated
- Hardness testing
- Video crawler
- Alloy analyzing
- Alternating Current Field Measurement (ACFM)
- Magnetic Flux Leakage (MFL)
- Silver Wing Tank Floor Scanner
- MFE Tank Floor Scanner
- Liquid Penetrant Testing (PT)
- Magnetic Particle Testing (MT)
- Borescope

### Vendor Surveillance & New Construction

- Specifications, codes, and compliance standards such as ASME, NBIC, API, ANSI, and AWS
- Identify quality and scheduling issues
- Offer production solutions
- Customized post-job data package compatible with client-specific Mechanical Integrity (MI) program



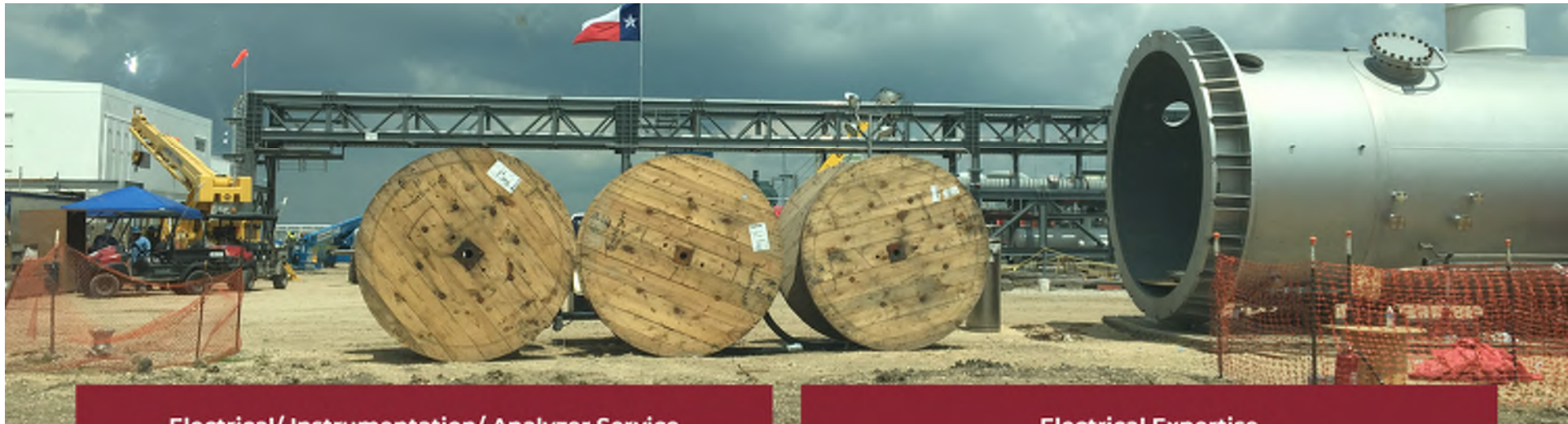


## Turnkey I&E, Ltd.

Turnkey I&E, Ltd. (TKIE) is an industrial instrumentation and electrical company which provides maintenance, turnaround support, and capital project services.

Est. 2009





### Electrical/ Instrumentation/ Analyzer Service

- Turnarounds
- Planning/ scheduling/ estimating
- Project management and controls
- I&E QA/QC and inspections
- Instrument and electrical maintenance
- CEMS maintenance
- Gas chromatography
- Construction/ commissioning
- Analyzer maintenance support
- Instrument and electrical safety expertise

### Electrical Expertise

- High and low voltage wiring installation and testing
- Power and lighting panels
- Cable tray and conduit installation
- MCCs and switchgears
- Electrical equipment installation
- Heat tracing installation
- Grounding

### Instrumentation Expertise

- Instrumentation installation
- Instrumentation calibration
- Loop check and start-up
- Control panel and DCS/ PLC installation and testing
- Tube installation and testing
- Analyzer installation and testing

### Communication & Controls

- Fiber installation, termination, and testing
- Remote telecommunications
- SCADA and automation
- Disaster recovery



# STRONGHOLD

— *Companies* —

For the safest and most efficient solutions for  
all your project needs

**The Best People | Superior Equipment | Effective Processes**

Aligned to deliver the right results, every time

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