

Professional Consulting Engineers

Structural - Mechanical - Civil - Electrical - Mechanical Integrity

Statement Of Qualifications



TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	CORPORATE INTRODUCTION	1
2.0	SERVICES	2
2.1	CIVIL ENGINEERING.....	2
2.2	STRUCTURAL ENGINEERING.....	3
2.3	MECHANICAL ENGINEERING	3
2.4	ELECTRICAL ENGINEERING	3
2.5	MECHANICAL INTEGRITY.....	3
3.0	REPRESENTATIVE PROJECTS.....	5
4.0	PROJECT LOCATION EXPERIENCE.....	6
4.1	CONUS (Plus Hawaii and Alaska).....	6
4.2	OCONUS	6
5.0	PROFESSIONAL AND TECHNICAL STAFF	7

1.0 INTRODUCTION

This document presents a general overview of the qualifications and experience of Trident Engineering and Inspection (TEI). TEI is a multidiscipline engineering firm that offers a full complement of engineering design and inspection services. We would welcome the opportunity to discuss your project plans.

Included is an abbreviated listing of the project types and specific capabilities provided by TEI. We also maintain a working relationship with several additional consultants to provide a broader scope of services and allow our clients to enjoy the benefits of one primary project consultant.

1.1 CORPORATE INTRODUCTION

Trident Engineering and Inspection (TEI), a designated small business, has experienced design engineers with expertise designing and evaluating storage tanks, piping, pipelines, pressure vessels, and all other components of fuel systems. Our core personnel have a combined experience of over 50 years in all aspects of evaluation, design, and repairs of aboveground storage tanks, piping, and fuel system repairs within the POL arena, including Army, Air Force, and Navy locations. Our teams have completed designs and inspections at over 100 DoD locations worldwide and are familiar with all government criteria, federal, and state regulations. The projects executed at these locations include POL planning, evaluation, design, and inspections.

As fuel system experts, we are not only familiar with all types of DoD storage tanks, hydrant systems, and fueling systems, but have inspected thousands of commercial tanks and piping systems. We are committed to a safety-first mindset and quality control at all levels.

Trident Engineering and Inspection

21 Saco Street
Westbrook, ME 04092

Phone: (207) 865-TANK (8265)

Email: info@tridentei.com

2.0 SERVICES

Trident Engineering and Inspection's team of expert civil, structural, mechanical, and electrical engineers proudly provide services to a broad range of industries in both government and commercial sectors worldwide.

We have teaming partnerships with companies that also specialize in fuel system design and perform the following services on our projects.

- Environmental Engineering
- Cathodic Protection
- Fire Protection
- Controls and Instrumentation

2.1 CIVIL ENGINEERING

Our civil engineering department offers a broad range of services for the petroleum industry and are experienced in design work related to fuels system facilities. We provide engineering services for new facilities and repairs to existing facilities.

Specific civil engineering services provided by TEI include the following:

- Site Planning and Design
- Grading, Drainage, and Utility Planning
- Foundation Design
- Secondary Containment Design

2.2 STRUCTURAL ENGINEERING

TEI provides a comprehensive list of structural engineering services. Our skilled team of engineers have experience in structural steel, masonry, concrete, wood, shallow and deep foundations, and petroleum storage tank design.

Specific structural engineering services provided by TEI include the following:

- Existing facility inspections and assessments
- Petroleum storage tank design
- Design of repairs to petroleum storage tanks
- Building, equipment, communication tower, and storage tank foundations
- Building superstructures (steel, concrete, masonry, wood)
- Rotating equipment foundations
- Structural evaluations and retrofit design
- Seismic and wind analysis
- Service and access platforms
- Pipe racks, pipe supports, and material handling
- Canopy design
- Special inspections

2.3 MECHANICAL ENGINEERING

Our mechanical engineering department specializes in services for the petroleum industry. TEI is experienced in pipeline design and inspection, pipe stress analysis, pump sizing, as well as repairs to fuels systems.

Specific mechanical engineering services provided by TEI include the following:

- ASME B31.1, B31.3, and B31.4 piping design
- Industrial piping design for general services
- Stress and thermal analysis
- Material selection
- Sizing and layout of supports and anchors
- Existing facility and equipment inspections and assessments
- Equipment sizing and selection (pumps, heat exchangers, compressors, etc)
- Owner's Engineering review and support

2.4 ELECTRICAL ENGINEERING

Our electrical engineering department offers a broad range of services across several industries. Our electrical engineering experts provide services for new facilities and repairs to existing facilities.

Specific electrical engineering services provided by TEI include the following:

- Lighting and power distribution systems
- Lightning protection
- Communications and control systems
- Design of PLC-based control systems

2.5 MECHANICAL INTEGRITY

TEI Mechanical Integrity (MI) experts perform services for a diverse range of industries. Our engineers and inspectors work together to provide quality inspections on pressure vessels, storage tanks, piping and pipelines, and process equipment. We are dedicated to providing expert services and personnel to ensure that your systems are designed, installed, and maintained to prevent system failure.

TEI uses the latest technology and techniques during inspection to provide the most accurate information. This information is critical in preventing unexpected system failures. Our teams perform analysis and evaluations of your equipment to ensure proper regulatory compliance and safety is maintained.

Specific mechanical integrity services provided by TEI include the following:

- API 510, 570, and 653 inspections
- STI SP-001 storage tank inspections
- Fitness for Service Evaluations
- Remaining Life Assessments

- Forensic Analysis
- Metallurgical Analysis
- Risk Based Analysis
- Hydrotest Exemption Studies
- Quality Assurance Services

3.0 REPRESENTATIVE PROJECTS

The TEI team has a wealth of experience in the petroleum and industrial sectors, with many projects completed for commercial and government clients. A short list of some of our most recently completed projects is below.

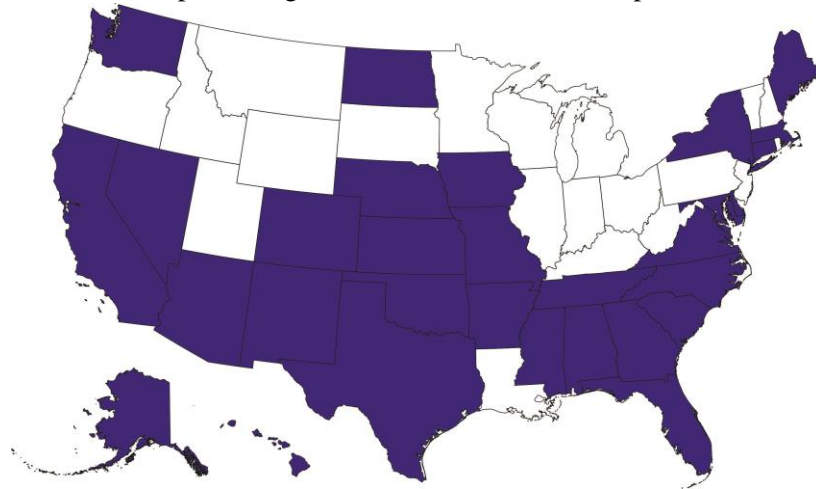
- **Design to Repair Tank Floors for Tanks A-13 & A-15; JBM Andersen AFB, Guam:** Design of a double bottom for two 140' diameter, 48' tall, 125,000 Bbl aboveground storage tanks. The design involved slotting the tank shells, providing a new floor with flexible membrane liner under tank release prevention barrier, concrete filled interstitial space and leak detection piping. Repairs also included designing new nozzles, insert plates, anchor chair modifications, and other miscellaneous tank repairs.
- **Clean, Inspect, Repair Surge Tanks 1, 2, 3, and 4; NAVSUP FLC Pearl Harbor, HI:** Designer of record for design of repairs for four 60' diameter, 21'tall, 10,000 Bbl cut and cover storage tanks. The design will include installation of a double bottom in three of the tanks, interior recoat, weld repairs, and other miscellaneous repairs.
- **AST Integrity Tank Testing; Red River Army Depot, TX:** TEI was the prime contractor for the inspection of 20 tanks. Tanks ranged from 1,000 gallons to 30,000 gallons.
- **Clean & Inspect POL Storage Tanks; NALF San Clemente Island, CA:** Inspection of three 2,700 Bbl aboveground storage tanks on San Clemente Island. Coordinate with the prime contractor as well as managing subcontractors. An additional level of coordination and planning was required due to the remote location of San Clemente Island and limited modes of transportation for personnel and equipment.
- **Repair Tanks 9010, 9011, 9012, 9015, 5214 and 5218; Dyess AFB, Texas:** This project required repairs on two hydrant tanks and four Bulk Storage Tanks to bring them into compliance with current UFC, Definitive Design and API 653 criteria. The design package contained a complete set of design drawings, specifications, and a basis of design. Our team also provided construction services.
- **API 653 Internal/External Inspections; Joint Base Lewis McChord, Washington:** TEI was the prime contractor for the inspection of three fuel storage tanks at this facility as part of a Clean-Inspect contract. The inspections were performed in accordance with API 653, STI SP001, UFC 3-460-01, UFC 3-460-03, and requirements identified in the statement of work.

4.0 PROJECT LOCATION EXPERIENCE

TEI has experience at many DoD locations worldwide. Our experience includes facilities for the Air Force, Navy, Army, Coast Guard, and Marines.

4.1 CONUS (Plus Hawaii and Alaska)

Below is a map showing the locations of our DoD experience in the 50 states.



4.2 OCONUS

TEI has significant experience in DoD facilities worldwide. Below is a list of select countries and locations.

Europe

- United Kingdom
- Spain
- Turkey

Caribbean

- Guantanamo Bay

Pacific

- Kwajalein Atoll
- Wake Island
- Guam
- Japan

5.0 PROFESSIONAL AND TECHNICAL STAFF

TEI provides personnel and management services at many levels for your project needs. Our experienced staff of licensed professional engineers and inspectors includes:

- Civil Engineers
- Mechanical Engineers
- Structural Engineers
- Electrical Engineers
- API 510 Inspectors
- API 570 Inspectors
- API 653 Inspectors
- STI SP-001 Inspectors
- Certified Welding Inspectors (CWI)
- NDT Levels II and III Inspectors

In addition to many professional and technical registrations held by our staff, many additional hours of training have been completed in various areas including OSHA 40 hour and EM 385-1-1 trainings for potentially hazardous work sites. TEI mandates that all field personnel are current on First Aid, CPR and AED certifications.

Our staff are well versed in the use of computerized technology for design and analysis and use several conventional packages along with in-house programs.