

CHEMICAL, PETROCHEMICAL & REFINING

TAI is a full-service engineering firm that has been serving the **Chemical Process, Petrochemical, and Refining Industries** with Engineering, Management and Technical Services offerings since its establishment in 1989. Many of TAI's core competencies were developed specifically to service the unique demands of this market. Our extensive technical expertise has enabled our clients to design, build, operate and maintain world class facilities over the last 33 years.

TAI is headquartered in Baltimore, MD, and has offices in Dallas, TX, Phoenix, AZ and Wilmington, DE.



ENGINEERING

- Mechanical Process
- Chemical Process
- Structural & Civil
- Electrical-Power
- Automation & Controls
- Instrumentation
- Buildings & Facilities (MEP)



MANAGEMENT

- Project Management
- Construction Management
- Procurement Services
- Design-Build & Turnkey Solutions
- Staff Augmentation



TECHNICAL SERVICES

- Inspection & Test Services
- I&C Field Services
- Site Safety
- 3D Laser Scanning
- Mechanical, Electrical, Steel Construction

SERVICES

- * Preliminary & Detailed Engineering
- * Scope Development
- * Construction Cost Estimation
- * Master Planning
- * Project Economic Analysis
- * Equipment Sizing & Selection
- * Start-Up
- * Commissioning
- * Facility Documentation
- * Peer Review
- * Turnkey Project Management
- * Calibration Program Development
- * Electronic Calibration Lab Services

CERTIFICATIONS

ISO / IEC 17025:2017 (International)
ANSI / NCSL Z540-1-1994 (National)
Certification #: AC-2055

CONTACT

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Oil Refinery - HF Alkylation RAD SIS Controls System Upgrade



This client was in need of upgrades to their HF Alky Unit in order to comply with API recommended practices for the safe operation of Hydraulic Acid Alkylation Units. TAI provided services for their SIS controls system upgrade portion of the HF Alkylation Rapid Acid Dump (RAD) system.

TAI's scope included engineering the SIS system that replaced the existing Siemens 505 PLC system. TAI engineered the addition of key instrumentation and installed a new state-of-the-art control system. The new upgraded control system utilized all existing I/O devices, and controls of all existing dump operations.

CLIENT: **CONFIDENTIAL**
MARKET: Chemical | Petrochemical | Refining
LOCATION: Dallas, TX
SERVICES:

- Project Management
- Design Engineering
- Programming
- Controls Integration
- Commissioning

COMPLETED: 2018
VALUE CLASS: <\$1MM

Chemical Processing Facility - Electrical Power Study



TAI performed a Power Systems Fault Analysis, Coordination Study and Arc Flash Analysis for a chemical manufacturer in Baltimore, MD. The Power Study and Fault Analysis was completed in strict compliance with ANSI & IEEE standards. TAI provided field work to verify and document that all existing electrical components were included in the engineering analysis and coordination study.

TAI used the Comprehensive Fault Analysis module from the SKM Systems Analysis PowerTools for Windows (PTW) systems analysis software. The Load Flow Analysis of the system provided the client with recommendations for system improvement which included transformer tap setting changes and load redistribution. An Arc Flash analysis of the system was done also utilizing SKM and the Arc Flash Evaluation Module.

CLIENT: **CONFIDENTIAL**
MARKET: Chemical | Petrochemical | Refining
LOCATION: Baltimore & Beltsville, MD
SERVICES:

- Power Systems Fault Analysis
- Coordination Study
- Arc Flash Analysis

COMPLETED: 2014
VALUE CLASS: <\$1MM

Lubricant Esters Process Improvement



TAI provided preliminary engineering services to support the development of this Lubricant Esters Plant through detailed design and procurement.

TAI's specific responsibilities included modifying the existing solids mixing/press Feed Tank to allow stripping in the vessel instead of in the Reactor #2; and adding a new re-circulation heat exchanger, a new overhead condenser, and a new vacuum system.

CLIENT: **CONFIDENTIAL**
MARKET: Chemical | Petrochemical | Refining
LOCATION: New Castle, DE
SERVICES:

- Engineering & Design
- Procurement
- Construction Documents
- Project Management
- Quality Assurance

COMPLETED: 2015 **VALUE CLASS:** \$2MM

Construction Management Support for Chlor-Alkali Plants



TAI provided services for the installation of a turnkey chlor-alkali process, including construction management, final piping design, and installation - using both on-location and out of state contractors. TAI also provided troubleshooting to expedite execution of the project and provided onsite safety management, mechanical construction services, and commissioning and startup services for the clients' 18 interconnected skids.

CLIENT: **CONFIDENTIAL**
MARKET: Chemical | Petrochemical | Refining
LOCATION: Iowa Processing Center, Eddyville, IA
SERVICES:

- Engineering & Design
- Construction Management
- Site Safety
- Start-Up and Commissioning
- Mechanical Construction

COMPLETED: 2015 **VALUE CLASS:** \$150MM