

## Introduction

Aura Engineering, LLC was established in 1996 with the goal of providing quality, cost-effective professional engineering and design services to the petrochemical, chemical, and storage terminal industries. Through the years, we have aided our clients in increasing throughput, decreasing emissions, and improving reliability. Aura has grown exponentially in our 25 years, not just in size, but also in our competencies, capabilities, and knowledge. Together with our service partners, we can tackle almost any need that comes up for a customer in the petrochemical, chemical, and storage terminal industries. For this reason, Aura strives to be your first contact for addressing any new projects, retrofits, or problems occurring in your facility.

Check out our [website](#) for more about Aura.

## Menu of Services

The following list is not exhaustive, please contact us for any needs you encounter:

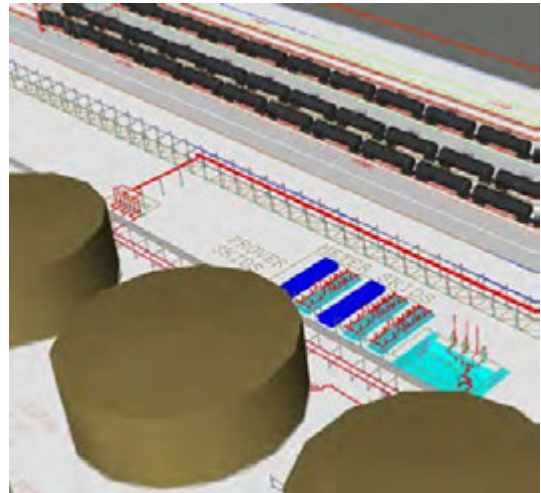
- 1) Preventative Maintenance and Technical Services
  - a) Preventative maintenance, testing and inspection - quarterly, biannual or annual basis depending on the facility's needs.
  - b) Troubleshooting
  - c) Repair or replace equipment/instrumentation - our technicians can repair or replace nearly every electrical component in your terminal, including (but not limited to):
    - i) Solenoid valves inline or on automated pneumatic valves
    - ii) Limit switches
    - iii) Level gauges, transmitters, and switches
    - iv) Thermocouples, RTDs, switches, and temperature transmitters
    - v) Pressure transmitters, gauges, and switches
    - vi) Vapor combustor or flare pilots and associated components
    - vii) Motor starters and variable frequency drives for pumps and blowers
    - viii) Pilot ignition systems (combustion systems)
  - d) Complete sample system repair or replacement for hydrocarbon, BTU, or oxygen analyzers
  - e) Environmental compliance testing of temperature sensors for combustion units. Testing and certification of thermocouples, RTDs, and temperature switches to ensure your system is operating at the temperature required by your air permit.



- f) Oxygen Analyzer maintenance, service, and repair. We have extensive experience with:
  - i) Servomex
  - ii) SICK
  - iii) Teledyne
- g) HART Smart Transmitter set-up, calibration and re-scaling, including:
  - i) flow meters
  - ii) pressure transmitters
  - iii) temperature transmitters
  - iv) liquid level transmitters
- h) Variable frequency drive (VFD) set up for pumps and blowers
- 2) New Instrumentation, Electrical, and Communication Installations
- 3) Vapor Control System Routine Maintenance, Service, and Repair
  - a) Preventative maintenance, testing and inspection - our technicians have extensive experience with marine, truck, rail, and tank breathing vapor control systems
  - b) Annual Marine System Testing and Inspection for USCG Compliance
- 4) Permitting Assistance
  - a) State and National Air Permitting
  - b) Storm Water Pollution Prevention Plans (SWPPP)
  - c) City and County Permits
- 5) Environmental Compliance Testing to Ensure Compliance with Air Permits
  - a) Temperature sensors for combustion units
  - b) Certification of thermocouples, RTDS, and temperature switches
- 6) United States Coast Guard (USCG) Certifying Entity
- 7) USCG Regulation Consultation and Guidance
  - a) Compliance analysis
  - b) Compliance management
  - c) Annual testing
  - d) 5-year operational reviews
- 8) Operator Training Classes, Including:
  - a) System operation
  - b) Basic maintenance
  - c) Troubleshooting
- 9) System Reliability Studies and Optimization Evaluations
- 10) Programming for All Terminal Operations, Specializations Include:
  - a) Allen Bradley
  - b) Modicon
  - c) GE



- d) Wonderware
- 11) AccuLoad Configuration, Recipe Development and Input
- 12) AutoCAD Design and Drafting
  - a) 2D design (plans, sections, and isometrics)
  - b) 3D design and equipment modeling
  - c) As built drawings and as built P&ID walkdowns
- 13) Facility Engineering, up to Complete Engineering Packages, Including: Process, Mechanical, Electrical, and Civil Design for:
  - a) Truck and rail loading and unloading
    - i) Meter skids
    - ii) Terminal automation system consultation
    - iii) Weight scales
    - iv) Grounding and overfill
  - b) Storage tank design consultation
    - i) Floating roof / fixed roof
    - ii) Instrumentation
      - (1) Pressure/Vacuum Relief Valves
      - (2) Level sensors
      - (3) Cathodic protection
      - (4) Containment design
    - iii) Storm water collection and treatment
      - (1) Oil/water separators
      - (2) Carbon filtration
- 14) Site Plans
  - a) Greenfield site development
  - b) Drainage
  - c) Grading plans
  - d) Survey
  - e) Layout of equipment and facilities
- 15) Combustion System Design
  - a) Assist with location of equipment
  - b) Assist with selection of equipment and integration with permit requirements
    - i) Flares
    - ii) Vapor combustors
    - iii) Thermal oxidizers
    - iv) Catalytic, Regenerative, Recuperative
  - c) Assist with evaluation of equipment bids and vendor analysis
  - d) Prepare and submit bid packages
  - e) Startup, maintenance assistance



## 16) Recovery Systems

- a) Evaluate options and assist in the selection of the best technology for your application.
  - i) Scrubbers
  - ii) Carbon adsorption
    - (1) Off-site regeneration
    - (2) Self-regeneration
- b) Prepare bid packages where needed
- c) Assist with assuring compliance with permit requirements
- d) Design and build vacuum-based carbon adsorption
- e) Startup, maintenance assistance

## 17) Instrument and Electrical

- a) PLC panel design and fabrication
- b) Wiring diagrams for Toptech and AccuLoad flow computers
- c) Single line diagram engineering
- d) Point to point wiring diagrams
- e) Grounding system design
- f) Area classification drawings per API RP 500 Standards
- g) Coordination with terminal automation and terminal management system vendors to meet terminal needs.
- h) Security camera infrastructure consultation
- i) Facility data center and IT design.

## 18) Mechanical and Civil Installations

19) Equipment Procurement – We have extensive relationships with major vendors and can pass along discounts that we have with each vendor to our clients. Procurement includes, but is not limited to:

- a) Pumps
- b) Valves
- c) Instrumentation (pressure, flow, temperature)
- d) VFD's
- e) MCC's
- f) PLC systems

