Statement of Qualifications

Power / Energy

Introduction

Services & Capabilities

Summary of Projects

Quality Management Program
STATEMENT OF QUALIFICATIONS

INTRODUCTION

Venture Engineering & Construction (Venture) is a closely held, multi-disciplined engineering and construction management company. Pittsburgh based, Venture provides services to clients throughout North America and abroad ranging from front-end engineering to detailed design and construction management.

Our core staff of engineering professionals is experienced in a variety of process industries including energy, refining, chemicals, petrochemicals, alloys, consumer products, and general manufacturing industries.

We have registered professional engineers heading each discipline, and a design staff reflecting a balance of disciplines and a range of experience. Staffing is currently at 40 employees, all disciplines, of which six are Chemical Engineers.

Our core markets focuses are process industries, and energy. We are leaders in alternative energy solutions such as landfill gas plants, biodiesel plants, cogeneration facilities, and waste-to-energy plants.

Venture works routinely with advanced design tools such as:

- Autodesk products
  - Inventor 3D
  - AutoCAD PID
  - AutoCAD Electrical
  - “Vanilla” AutoCAD
- ChemCAD
- STAAD
- Thermoflex
- Caesar II Pipe Stress
- Others

POWER

Specific to the Power/Energy Industry, we have worked for large utility power companies, equipment suppliers, independent power producers, waste-to-energy and renewable energy (specifically biogas to electricity and/or high BTU gas). Our clients include Midwest Generation, Wheelabrator Technologies Inc, American Electric Power, Babcock Power, DTE, DCO Energy, GSF Energy and others.

Our experience includes combined cycle, cogeneration, combined heat and power, coal-fueled, oil-fueled, refuse-fueled (MSW) and gas-fueled thermal plants. Our renewables experience includes landfill and biodigester gas to electricity and high BTU gas plants.
STATEMENT OF QUALIFICATIONS

SERVICES & CAPABILITIES

Venture Engineering offers a wide array of engineering and environmental services in support of power / energy projects, such as utility power plants municipal solid waste (MSW) to energy projects, distributed generating renewable energy and conventional cogen / combined heat and power projects.

FACILITY SITING AND PERMITTING

- Comprehensive Planning and Permitting Services
- Site Investigations

SCOPE & ESTIMATE SERVICES

- Front End Engineering
- Cost Estimation
- Process Evaluation / Technology Selection
- Thermodynamic Modeling
- Pipe Stress Analysis
- Pro Forma Development

DESIGN AND CONSTRUCTION

- Cost Control
- Project Management
- Installation Engineering (Full Service)
- Engineering Specifications / Standards
- Procurement / Expedition
- Process Simulation Services
- Advanced Design Tools!
- 3D Design Capabilities
- Full EPCM Contractor
Project Scope

Venture has been engaged by EME Homer City Power Generation (Midwest Power), as part of a multi-year blanket engineering agreement, to provide routine, on-going plant engineering services including commissioning and start-up engineering assistance.

Venture’s services include the following:

- Scope & Estimate Studies for capital planning (CRE’s)
- Detailed Engineering & Design
- Procurement Assistance
- Construction Support Services
- Commissioning Management

The following projects are currently on-going at various stages of development including:

- Stormwater recycling and reuse (FGD)
- Emergency Back-up Generator Replacement
- Waste management – scope & estimate
- SCR Winterization
- Soot Blower – Replacement/Upgrade evaluation
- CO2 control technologies – technology evaluation
- Miscellaneous pipe stress analysis and design
SUMMARY OF PROJECTS

Wheelabrator Technologies, Inc.— Estimate and Structural Engineering Study

Project Scope

Venture performed an estimate and structural engineering study (at WTI’s Peekskill, NY facility) in March 2009 to complete an installation of three bypass ducts above three existing, but out-of-service, electrostatic precipitators.

The precipitators were designed and installed by Wheelabrator APC in the early 1980’s to provide air pollution control for the three furnaces at the Peekskill facility. They were taken out-of-service in the late 1990’s when newer Spray Dryer technology was designed and installed by Wheelabrator APC. At that time, the precipitators were taken out of service and their internals were removed. However, the precipitator boxes have continued to be used since that time acting as ductwork to move gas from the furnaces to the new Spray Dryers.

In 2006, a third party performed structural analysis and design to add three new by-pass ducts and support structures above the precipitators to move gas from the furnaces to the Spray Dryers in lieu of the old precipitator boxes and to allow for their cleanout and demolition.

Services Provided

Because the third party no longer exists, Venture’s estimate was to provide certification of the third party’s design and to provide technical assistance with fabrication and erection of the three bypass ducts and their support structures, three 91’-0 long single span box trusses that run 90 to 100 feet in the air above existing facilities, and with demolition of the three precipitator boxes.
STATEMENT OF QUALIFICATIONS

SUMMARY OF PROJECTS

Wheelabrator Technologies, Inc.— Structural Engineering Feasibility Study and Estimate

Project Scope

An additional conceptual structural engineering feasibility study and estimate in March and April at Peekskill, NY to determine the structural and economic feasibility of building a new Storage and Maintenance Building atop an existing Maintenance Building where the Electrostatic Precipitator boxes and their support steel currently sit. The existing precipitator boxes would be removed and their existing support steel used as the basis for support of the new structure, with new steel added to complete the building framing.

Services Provided

Structural analysis and design was performed using STAAD-Pro structural analysis and design software. Analysis was based on dead, live, wind, and snow loading conditions.
Project Scope

WTI contracted Venture to conduct a structural engineering study on the feasibility of adding 20 foot vertical sections to two similar (but opposite-hand) conditioning towers and associated inlet ductwork and support structures.

Services Provided

Venture performed framing analysis using STAAD-Pro structural analysis and design software. This was analyzed by Venture’s structural engineers based on additional dead load, wind load, and snow load on existing support structure and their existing spread footing foundations.
SUMMARY OF PROJECTS

**EME Homer City Power Generation—Scope & Estimate Study: Storm Water Recycling and Reuse**

**Project Scope**

Venture provided various scope and estimate services for a storm water recycling and reuse project at the EME Homer City Power Generation plant in Homer City, PA. The project includes the collection and reuse of storm water for the future installation of a flue gas desulfurization system.

Coal-fired power plants require large volumes of water for efficient operation, primarily for cooling purposes. Power plant freshwater consumption refers to the quantity of water withdrawn from a water body that is not returned to the source but is lost to evaporation, while water withdrawal refers to the total quantity of water removed from a water source.

In power plants equipped with recirculating cooling water systems and wet flue gas desulfurization (FGD) systems, 90 percent of the evaporative water loss occurs in the cooling towers and 10 percent in the wet FGD system. Although water use in wet FGD systems represents a smaller percentage of evaporative water loss compared to cooling tower loss, strategies to reduce the wet FGD consumption are important because of the large number of wet FGD systems to be installed, at new and existing plants, in coming years due to recent regulations promulgated by the Environmental Protection Agency. As a result of these regulations, aimed at controlling precursors of ozone, fine participates, and mercury, an estimated 82 gigawatts (GW) of FGD capacity will be installed in the United States by the year 2020.

As such, as a proactive and environmentally conscience move, EME Homer City has elected to study various strategies towards reducing water consumption.

Venture’s scope of work included:

- Hydraulic modeling of storm water flows across the entire site
- Analysis of Alternatives and recommendations for collection and transfer of storm water
- Sizing of transfer pumps and holding impoundment(s)
- Sizing of sewer lines and lift stations
- Conceptual Engineering Report
STATEMENT OF QUALIFICATIONS

SUMMARY OF PROJECTS

McCarran International Airport Authority—Combined Heat & Power Plant: New Energy Plant Project

Project Scope

Venture Engineering staff were recently involved in a study with the McCarran International Airport, Las Vegas, Nevada. The study included a review of the airport’s current and planned electrical, heating and cooling strategy. Services included conceptual development of a new combined heat and power (CHP) plant to provide the base load electrical, heating and cooling demand for the planned expansion. Various scenarios were evaluated, concluding with the recommendation of building a 35MW, gas fired turbine, with heat recovery and adsorption chilling (CHP).

McCarran Airport is currently involved in a near $6 billion airport expansion program, and this study will serve to identify the current and future electrical and mechanical utilities strategy. The expansion may include an on-site 50MW combined heat and power plant to service the existing Terminals (T1 and T2), as well as a new T-3 terminal.

Current projects include: $4 billion capital additions project that includes the renovation of the older A and B concourses and development of the new northwest wing D concourse; $1.8 billion expansion project adding ticketing counters, departure gates and parking; $165 million Consolidated Rental Car Facility project.

According to McCarran Airport’s Web site, for each new hotel room built in Southern Nevada, an increase of 320 passengers annually results. “This formula has held true for the last two decades.”

Within the next four to five years 30,000 hotel rooms are expected to be built, increasing the number of Southern Nevada visitors traveling through McCarran Airport by an additional 10 million by 2011. Reports state 46.2 million traveled through McCarran Airport in 2006, the busiest year to-date.

McCarran Airport one of the top ten busiest airports in the world, generates income derived from aviation activity estimated at $25 billion dollars a year.
SUMMARY OF PROJECTS

Western Kentucky Energy—Coleman Station Fuel Gas Desulfurization Electrical Power Distribution

Services Provided

Venture staff provided the following services:

- Short circuit and relay coordination study (ETAP Power Station) of new 12.47 kV, 4.16kV and 480V equipment for the fuel gas desulfurization power system.

- Motor starting study to determine the feasibility of starting 2000HP fans, 1400HP ball mill, 1850HP recycle pumps, and 1000HP oxidation blower 4160V motors on the plant power system.

- Designed high resistance ground system for the 5 kV power system.

- Investigated the design of high resistance ground system on the 15 kV power system.

- Designed the ground detection system for the 12.47 kV power system using wye broken delta configuration with a 59N over-voltage relay.

- Field assistance and start-up of the new power system.
Project Scope

Venture has been engaged by Babcock Power Inc., as part of a multi-year blanket engineering agreement, to provide various engineering services primarily for their boiler and firing group, Riley Power.

Venture’s services under this contract include the following:

- Scope & Estimate Studies for project development
- Detailed Engineering & Design
- Construction Support Services
- Commissioning Management
SUMMARY OF PROJECTS

Wheelabrator Technologies, Inc.—Scope & Estimate Study: 250 TPD Waste-to-Energy Plant

Project Scope

Venture provided various scope and estimate services for the planned 250 TPD MSW to electricity plant for the WTI, Hilo, Hawaii proposed plant.

The proposed Hilo plant will convert 250 TPD of MSW into 6 MW (gross) power. The plant is a mass burn facility, based on Von Roll technology. Venture’s project manager, Mr. Steve Kranz, led the overall scope and estimate study.

Venture’s scope included process design, including PFD and P&ID development (using new AutoCAD ‘Smart’ P&ID), as well as finalization of the balance of plant scoping drawings and capital cost estimate.

Due to the nature of the lack of trades in Hawaii, as well as basic materials of construction, this plant was proposed as a modular designed and built facility. Where the modules would be fabricated in the continental US and shipped to Hawaii for assembly/erection.
Project Scope

Venture Engineering has entered into a multi-year Master Professional Service agreement with Wheelabrator Technologies Inc., (WTI) a wholly owned subsidiary of Waste Management. As part of this agreement, Venture will be providing various engineering, procurement and construction management services at various WTI waste-to-energy facilities in the US. Services include scope and estimate studies, process modeling services, installation engineering services, procurement and construction management services.

WTI is the U.S. market leader in the waste-to-energy sector.
SUMMARY OF PROJECTS

Wheelabrator Technologies, Inc.—Power Plant Modeling: 1500 TPD Waste-to-Energy Plant

Project Scope

Venture provided steam cycle analysis using the Thermoflex modeling software for a new 1500 TPD MSW to energy plant to be located in Maryland.

The scope included modeling an existing facility (for baseline verification) and then applying the model to the planned 1500 TPD plant. Modeling included optimizing steam production at two pressure levels with and without reheat, towards optimizing overall efficiency.
SUMMARY OF PROJECTS

Project Scope

Venture Engineering has entered into a multi-year Master Professional Service agreement with DCO Energy. As part of this agreement, Venture will be providing various engineering, procurement and construction management services at various DCO Energy facilities in the US.

Services include scope and estimate studies, process modeling services, installation engineering services, procurement, commissioning and construction management services.
Project Scope

Venture Engineering provided commissioning services for this new Combined Heat and Power (CHP) plant for DCO Energy at the Bergen County Utility Authority’s Little Ferry sewage treatment plant in East Rutherford New Jersey. The facility consisted of:

- Duplexed gas compressor skid with glycol cooling for moisture removal
- Siloxane removal columns
- Twin 1.4MW Jenbacher Engine/Generator sets fueled by digester gas or natural gas and generating 4160 V power
- Heat recovery boilers, to provide supplemental heat to the facility’s hot water heating system
- Load paralleling equipment to optimize power generation while preventing export of power
- Atmospheric and digester gas monitoring

Venture staff worked collaboratively with DCO personnel, the contractor, and various suppliers, to coordinate on-site testing, commissioning, and training activities, culminating in a 48 hour Functional Performance Test and report. Other tasks included preparation of a detailed operations description, and punch listing.
SUMMARY OF PROJECTS

Taggart—Fine Coal Module: Coal Preparation Plant, Detailed Design

**Project Scope**

Venture Engineering provided structural detail design for the Coal Preparation Plant designed and constructed by Taggart Global for MEPCO near Morgantown, West Virginia. The coal-prep plant physically prepares the coal for use in the electrical generation station.

**Services Provided**

Venture provided structural detailed design for the Fine Coal Module working in-line with other modules to allow MEPCO to bring their new coal-fired generation on-line. Venture provided proper structural support of Taggart Equipment in an extremely congested area where proper support leading to efficient design was only marginally available.

Other services included the preparation and checking of engineering drawings for the module to be issued to the structural steel fabricator.
Project Scope

Venture Engineering provided structural detailed design services for a new Coal Preparation Plant MEPCO near Morgantown, West Virginia, in conjunction with Taggart Global. Taggart is providing an EPC coal preparation plant to MEPCO. The coal-prep plant physically prepares the coal for use in the electrical generation station.

Services Provided

Venture’s scope included structural detailed engineering and design for the Heavy Media Refuse Module working in-line with other modules designed by Taggart to allow MEPCO to bring their new coal-fired generation on-line. The project was successfully completed on time and budget.
STATEMENT OF QUALIFICATIONS

SUMMARY OF PROJECTS

Croda, Inc.—Fueling Boilers with Landfill Gas

Project Scope

Venture Engineering and Construction (Venture) was contracted by Croda, Inc., to conduct a front-end engineering study to investigate the feasibility of utilizing landfill gas (LFG) in place of conventional natural gas for firing the plant boilers (Superior boilers located next to the maintenance shop) at the Croda Mill Hall, PA Facility. The landfill gas would be made available from the nearby Clinton County Solid Waste Authority, Wayne Township Landfill.

Two scenarios were evaluated in this feasibility study. The first scenario included blending the landfill gas with natural gas and using this blended gas stream for firing in both Superior Boilers. Scenario 2 included fueling only one boiler with LFG and the second boiler would remain fueled using 100% natural gas as a backup and operating during high boiler demand time periods.

Services Provided

- Process Flow Diagram-Gas Pretreatment
- Basic Calculations
- Pipeline Pressure Drop Calculations
- Sulfa treat System Sizing
- Gas Delivery Modeling using ChemCAD
- Equipment List
- Fuel Cost Savings Analysis
- Develop Order of Magnitude Cost Estimate
- Run Payback Analysis for Various Operating Scenarios
- Evaluate Landfill Gas Composition
- Evaluate various dual fuel burners
- Evaluate various boiler firing sequences
STATEMENT OF QUALIFICATIONS

SUMMARY OF PROJECTS

Wheelabrator Technologies, Inc.—Emissions Control Project: Waste-to-Energy Plant

PROJECT SCOPE

This facility burns municipal waste in two 750 ton per day refuse boilers and generates 40 MW of electrical power.

To improve air quality, the existing electrostatic precipitators were replaced. The project included the installation of two fabric filters and ash handling conveyors. The ID Fans were also modified to accommodate higher static pressure required for the new equipment and ductwork. New stack opacity equipment was also installed. The new equipment was installed in parallel with the old equipment. Changeover was accomplished during two 8-day outages.

The project was completed on time and under budget with no unscheduled interruption of the plant operation.

Services Provided

Venture staff provided project development services included scoping and estimating, through installation engineering. Scope included equipment specifications and installation engineering (electrical, control systems, mechanical, piping, structural, and civil), construction bids packages and bid analysis.

Changes were required to the plant DCS control system.

Prior to and during the planned outages, we provided on site engineering support and assisted with the start-up of the new equipment.
SUMMARY OF PROJECTS

Montauk Energy—Landfill Gas High BTU Processing Plant Expansion

Project Scope

Venture Engineering staff provided full EPCM services for a high BTU plant expansion at the Montauk Energy, Rumpke Landfill location. The project increased the production capacity by 6.0 million SCFD of high BTU (pipeline quality) gas. The total production capacity at the Rumpke facility is 15.0 million SCFD (inlet), with capabilities to deliver as much as 8.0 million SCFD of high BTU gas into the Duke Energy pipeline.

The project scope included new knock-out pot, inlet compressors, gas conditioning skids to remove siloxanes, NMOCs, moisture and H2S, pressure swing adsorption using QuestAir Technologies proprietary PSA process, tail gas compressors, new thermal oxidizer, new utility ground flare, condensate collection and mitigation, control room, MCC and switchgear, and mercaptan addition system.

Services Provided

Venture provided the following services:

- Front end engineering design, including capital cost estimate
- Installation engineering and design, including skid fabrication drawings
- Procurement services for all equipment and trade contracts
- Construction Management of all construction activities
- PLC programming
- Commissioning and start-up
SUMMARY OF PROJECTS

Montauk Energy—Landfill Gas High BTU Processing Plant

Project Scope

Venture Engineering provided full EPC services for a compressor upgrade project at the Montauk Energy, Rumpke Landfill location. The project will increase the production capacity by 1.5 million SCFD of high BTU (pipeline quality) gas.

Services Provided

Venture provided the following services:

- Front end engineering design, including capital cost estimate
- Installation engineering and design, including skid fabrication drawings
- Skid Fabrication (via subcontract)
- Full equipment supply, including new blower skid, heat exchanger, MCC
- Hired all trade contractors and over site of construction activities
- PLC programming
- Commissioning and start-up
Project Scope

Venture Engineering provided front end engineering services for a 6MM SCFD landfill gas to energy plant. Various options were considered including landfill gas to high BTU gas plant, landfill gas to electricity plant using either turbine gensets or IC engines. The project is located at the Monmouth County regional landfill in Monmouth, NJ. Montauk currently operates a 5 MW landfill gas to electricity plant at this location. The new plant will utilize the gas from new landfill cells and produce high BTU gas which will be sold to the gas utility over a long-term gas supply contract.

Services Provided

Venture provided the following services:

- Technical evaluation and recommendation
- Front end engineering and design, including process design and development
- Specifications including standards and codes governing work, quality control, materials and execution workmanship, tolerances, criteria for temporary works, and required submittals
- Capital Cost Estimate
SUMMARY OF PROJECTS

Montauk Energy—Engineering Services: Evergreen Contract

Project Scope

Venture Engineering continues to support Montauk Energy Capital and its various subsidiaries including GSF Energy as part of a multi-year engineering services ‘evergreen’ agreement.

Services Provided

Venture provides the following services:

- Landfill gas curve analysis
- Landfill gas collection system design
- Routine O&M engineering at Rumpke, Monmouth, Valley, Monroeville, and McCarty Road plants
- Closure studies
- Scope & Estimate studies for planned future expansions
- Various Project Development activities, including pro forma analysis
**Project Scope**

Venture Engineering is providing engineering and design services for a new 350 SCFM bio-digester gas to high BTU gas plant for the Vancouver Municipal Water Authority, in conjunction with QuestAir Technologies. This plant includes a 100% skid fabricated design concept.

Engineering is anticipated to be finalized in early 2009 and construction and commissioning is scheduled to be finalized in Q4 2009.

**Services Provided**

Venture provided the following services:

- Front end engineering design, including capital cost estimate
- Installation engineering and design, including skid fabrication drawings
- Skid Fabrication (via subcontract)
- Equipment sizing, design and procurement
- PLC programming
- Commissioning and start-up (future services)
SUMMARY OF PROJECTS

QuestAir Technologies, Inc.—Digester Gas High BTU Processing Plant

Project Scope

Venture Engineering provided engineering and design services for a 2000 SCFM biogas digester gas to high BTU gas plant for QuestAir Technologies. This plant includes a 100% skid fabricated design concept, and will process municipal wastewater treatment plant anaerobic digester gas and convert to High BTU gas for injection into NG pipeline.

Services Provided

Venture provided the following services:

- Front end engineering design, including capital cost estimate
- Installation engineering and design, including skid fabrication drawings
- Skid Fabrication (via subcontract)
- Equipment sizing, design and procurement
- PLC programming
- Commissioning and start-up (future services)
STATEMENT OF QUALIFICATIONS

QUALITY MANAGEMENT PROGRAM

Venture Engineering is committed to a quality system that meets the highest standards.

The quality policy for Venture Engineering states, "The goal of Venture Engineering is to satisfy our clients’ needs in all respects and constantly strive to improve our standard of service."

The business of Venture Engineering is to provide quality, cost effective, on schedule, project development and management, engineering, procurement and construction management to the process, industrial, energy and related sectors in the US and internationally.

At Venture Engineering, quality management has three components:

**Assurance** - Planned and systematic actions necessary to provide adequate confidence that services will be supplied in accordance with specified requirements

**Control** - Measuring, evaluating and checking to verify conformance to requirements with the objective of ensuring only those services that conform to requirements are delivered

**Continuous improvement** - Management process involving everyone in the organization to better the performance and delivery of service to our clients

The engineering quality management program provides confidence that the project engineering activities will result in a safe, reliable and economic operating facility in conformance with the client's requirements.

While a number of management activities are employed to attain this confidence, the appointment of a core group of key experienced personnel to the project design team is primary. These personnel are selected on the basis of documented credentials and demonstrated capability to develop and direct a highly technical, proficient staff in performing to established design and drafting standards.
QUALITY MANAGEMENT PROGRAM

In the execution plan for engineering, the responsibilities related to the quality program include the following:

- Selecting the engineering standards and procedures to be applied to the project
- Establishing the design criteria to be used in the development of the engineering design
- Preparing plans for design reviews for critical and/or unusual designs for equipment and facilities
- Appointing specific personnel including specialists to review, check and approve engineering documents including drawings, specifications, calculations and studies
- Performing pre-planned internal audits of the procedures related to the development of engineering design activities
- Reviewing the designs and engineering of subcontractors
- Reviewing engineering operations and procedures to reduce waste in materials, time and money
STATEMENT OF QUALIFICATIONS

QUALITY MANAGEMENT PROGRAM

The supporting engineering activities to be used to assist and offer objective evidence of quality in this program include:

- Maintaining an organization, which is documented in an organization chart, showing specific personnel and their interrelationship
- Maintaining job descriptions, defining specific responsibilities and authorities of engineering personnel
- Establishing responsibilities for technical information exchanges, both internal and external
- Establishing control of design documents, including the activities for their review, approval, release, distribution, and revision
- Providing for the safe and easy location, retention, and retrieval of design documents
- Periodic review of the status and adequacy of the quality system
- Training, and upgrading of engineering personnel to perform to meet project requirements
- Identifying appropriate design needs or inputs
- Preparing necessary design documents
- Specifying quality levels, acceptable criteria, and standards, and quality records requirements
- Conducting audits of design activities, their reporting, and follow-up
- Taking appropriate corrective action necessary throughout the engineering design
- Controlling design changes
- Adjudicating and conducting feasibility studies of proposed alternative designs
Project control activities, including cost, schedule, man-hour, material and document control, are also part of quality management. Where applicable to specific contract requirements and Venture Engineering’ management requirements, this system is controlled through the application of documented standards, procedures and manuals. This provides for a consistent and efficient control function sized to contract needs.

To verify that these agreed standards, procedures and instructions are being adhered to; the project control function is audited, both internally by function staff and externally by corporate staff, on a regular basis.

Copies of the following documents demonstrating Venture Engineering’s commitment to quality management are available, for use on the project:

**Corporate quality assurance manual** - Establishes the policy and objectives, responsibilities and authorities related to quality of work performed by Venture Engineering and the concept of doing the job right the first time, every time.

**Departmental quality procedures** - Identifies Venture Engineering’s policy, objectives, organization, responsibilities and procedures with respect to the implementation and maintenance throughout a project of an effective and efficient quality management system.

These model documents are made specific to each project to reflect contract scope requirements following contract award. They are made available to all project personnel and form the basis for internal audit of project activities.