Thompson Global Partners, LLC

Engineering Solutions for the Future

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The Company "TGP"

Thompson Global Partners is a project driven organization providing Project Management, Engineering, Procurement, Construction Management/Advisory, Commissioning and Start-up services to the Industrial Markets, including the Refining, Petrochemical, Specialty Chemicals, Polymers, Pharmaceuticals, Infrastructure, and Fertilizer Industries as well as to the Municipal and Government Sectors.

Started in Tampa, Florida, Thompson Global Partners, LLC (TGP) is comprised exclusively of personnel representing ex-colleagues of various large Engineering firms including Badger Engineers, Raytheon Engineering and Constructors, Jacobs Engineering and Mustang Tampa. Most have worked together for many years, make the Tampa Bay area their home, have a wealth of technical knowledge and share the history of working on a wide variety of projects here in the United States and abroad.

The mission of Thompson Global Partners is to provide innovative and value added engineering to achieve the goals and objectives of our clients. We accomplish our mission by using an experienced and dedicated team of Managers, Engineers and Designers to partner with our clients in determining optimal solutions for the unique requirements and challenges of each project.

"People Engineering Solutions": TGP's project approach is to satisfy our clients' needs in a cost effective manner while developing a strong client relationship that encourages communication and personal attention for each project. The **People** on the Thompson Global Partners team are our most valuable asset; we join our experience, knowledge and dedication with that of our clients to achieve success and to provide outstanding customer service.

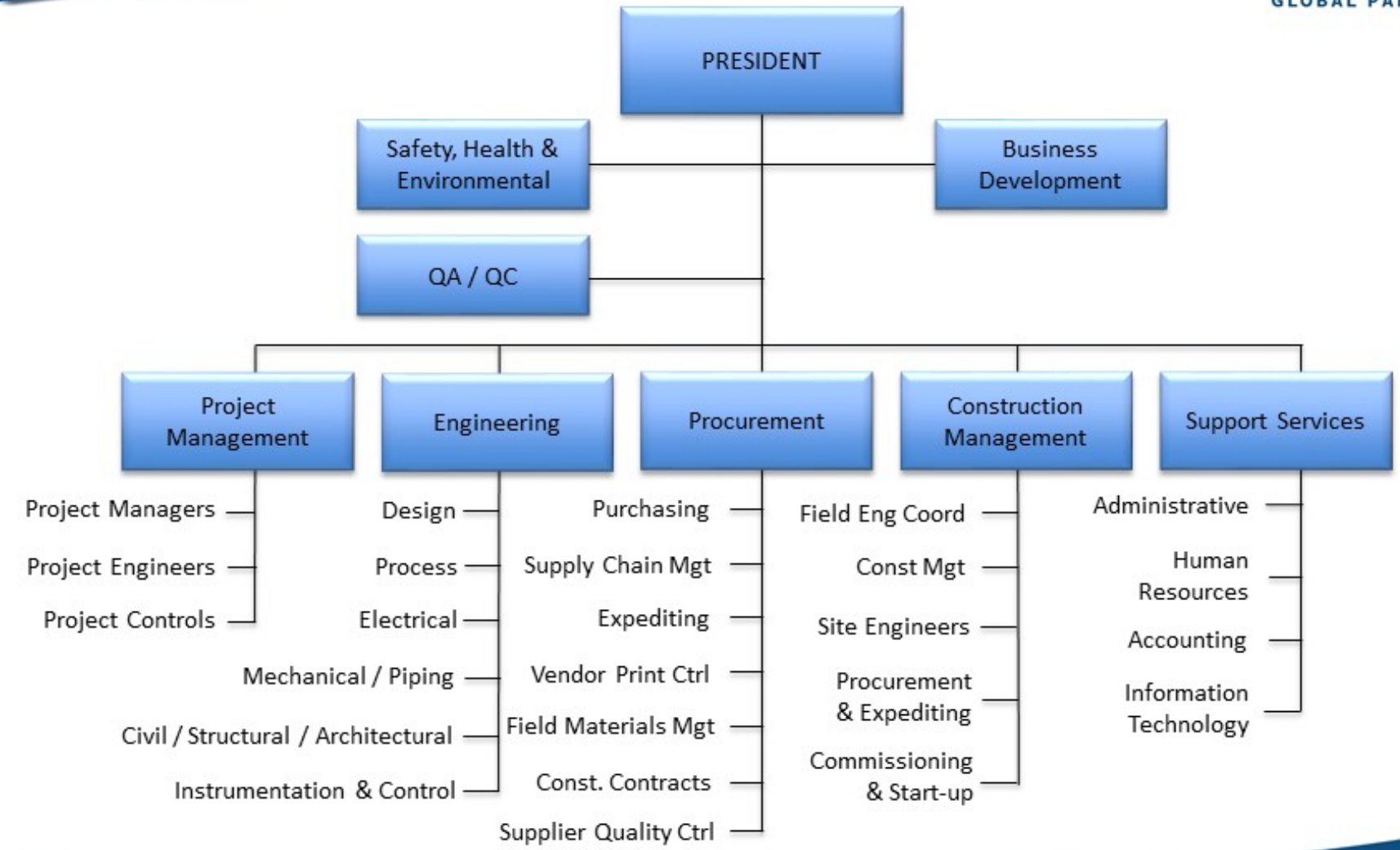
TGP Personnel

TGP is a medium sized company with many of its employees working on projects in various locations around the globe and the remainder working on U.S. Domestic projects. In the event TGP obtains significant additional work assignments, TGP has access to numerous additional employees upon which we can draw. All of these individuals reside in the Tampa Bay area and can be made available for project staffing at a moment's notice.

TGP's primary focus is on satisfying the needs of our clients. All TGP employees recognize that project success is measured against this objective. As a result, we seek to work as an extension of our Clients by creating a strong Project Team which strives to recognize and understand the

unique needs and challenges of each project. This understanding, coupled with TGP's experience and flexibility, will consistently result in the delivery of optimal solutions to our Clients. TGP's staff offers the experience and capabilities normally found only in a large company while offering our clients the flexibility and personal attention to make projects flow smoothly.

TGP's Organizational Chart



TGP Engineering Services

Thompson Global Partners is a full service EPCm engineering firm, performing the complete range of primary engineering services:

- Engineering (E)
- Procurement (P)
- Construction Management (Cm)

Thompson Global Partners focuses primarily on the engineering and design of refining, petrochemical, industrial, chemical, power, pharmaceutical and hydrocarbon facilities. Our company provides a wide range of performance and package preparation services including:

- Project Conception
- Operational Feasibility Studies
- Financial Feasibility Studies
- Pre-FEED Packages
- Process Design Packages (PDP)
- Environmental Impact Assessments (EIA)
- Basic Engineering Packages
- Detailed Engineering Packages
- Construction/Sub-Contractor Packages
- Plant Commissioning
- Plant Startup

These services are available as a comprehensive package or provided as individual components of a larger project in partnership with other vendors and project team members.

All Thompson Global Partners services are governed by a Total Quality Management System which provides the assurance that all contract activities conform to the project design criteria, specifications, applicable industry codes and standards, and that the final product is safe, functional, reliable and cost effective.

TGP services include:

Project Management - The goal of Thompson Global Partners project management is to develop the vision and tools necessary to organize and manage a project based on the client's objectives, project strategy, philosophy, management policy and contract requirements. These services may include:

- Dedicated Project Management & Consultancy Team
- Project Management Planning
- Detailed Definition of Project and Contractual Requirements
- Technology Evaluation
- Project Execution Schedules
- Capital / Manpower Budgeting
- Cost Control Systems and Reporting
- Project Risk Analyses
- Constructability Reviews
- Safety and Security Assurance

- Safety, Health & Environmental Assurance and Implementation.
- Quality Assurance and Quality Control Management

Program Management Contractor (PMC) Services – Thompson Global Partner's experience includes the knowledge and capability to provide and institute "Program Management" for those projects of the size and complexity requiring such execution. This approach makes use of other specialists, subcontractors and partnerships to perform portions of the work while allowing TGP to oversee and maintain overall project Quality. TGP's experience includes the Program Management of a $US 2 Billion expansion project in the Kingdom of Saudi Arabia as well as managing two major engineering firms on a Confidential project to be located in the Middle East. Typical Program Management services can include some or all of the following:

- Program Management Support
- Project Management
- Project Engineering
- Technology/Licensor Management
- Planning
- Cost Control
- Capital Cost Estimating
- Basic Engineering / Design
- Front End Engineering / Design
- Detailed Engineering / Design
- Procurement
- Materials Management
- Commissioning
- Construction Management
- Constructability Reviews
- EPC Package Prep / Management
- EPC Contractor Management
- Operation of the Completed Project

Studies & Project Development – Thompson Global Partners has a team of experts representing various process industries available to conduct Process Studies for Oil, Gas, Petrochemical, Fertilizer and Environmental Projects, including Wastewater Treatment Studies for both industrial and municipal clients, to conduct the following:

- Conduct Preliminary Field Survey and Prepare Feasibility Study Reports
- Conduct Field Surveys of Existing Plant(s):
  - Review/Study Existing Drawings, Documents and Data
  - Verify Actual Operating Conditions (Control Room Consoles)
  - Prepare Utility Balances for Entire Complex
- Preliminary Project Studies / Client and Project Scoping Requirements
- Preparation of Process and Utilities Flow Diagrams and P&ID's
- Environmental Impact Assessment Reports
- Permit Application Packages
- Wastewater and Effluent Treatment Studies
- Risk Assessment Reports

- Value Engineering
- Process Design Packages
- Capital Cost Estimates - ±40% or better based on client requirements

Detailed Engineering – Thompson Global Partners uses a coordinated approach to detailed project engineering which ensures communications across engineering disciplines at each phase of the design process. Specialized engineering personnel trained in the latest industry standards and technologies are used for each project.

- Front-End Engineering Design (FEED) with Detailed Specifications and Drawings
- Process Flow Design
- Feasibility Studies
- Hazard Analyses including HAZOP and SIL Evaluation.
- Basic Engineering Packages with Cost Estimation of ±20%.
- Detailed Engineering Packages consisting of:
  - All Design Drawings, Specifications and Documentation
  - PFD's, P&ID's
  - Calculations
  - Stress Analysis
  - ETAP
  - IFC Packages
  - Safety, Quality and Inspection/Testing Procedures
  - Cost Estimate (±10%).
- Environmental Engineering Services
- Operational Procedures

Procurement & Contract Management– Thompson Global Partners has a wealth of experience in procurement and contract preparation around the globe. Intricacies of vendor licensing, technology export and overseas shipping and delivery issues have been mastered by the TGP team.

- Manufacturer, Vendor and Supplier Pre-Qualification
- Contractors and Specialty Services Providers Pre-Qualification
- Solicitation of Bidders (Vendors and Contractors)
- Secrecy Agreements
- Request for Quotation (RFQ) Preparation
- Requisition Preparation (including Long Lead Items)
- Invitation to Bids (ITB for Studies, EPCm, Construction & Specialty Services)
- Licensing and Equipment Acquisition (Proprietary and LLI's).
- Technical and Commercial Bid Analysis and Recommendations
- Expediting, Shipping and Logistics
- Warehousing and Inventory Management
- Regulatory Assurance

Construction Management/Advisory – The team at Thompson Global Partners has supervised construction at plants in both the United States and numerous locations overseas. Their expertise is applied to each project in these areas:

- Sub-contractor Selection and Management
- Contract Administration
- Coordination with Client and Local Authorities
- Constructability Review
- Construction and Installation Supervision
- Construction Scheduling, Planning and Cost Control
- Safety, Health and Environmental and Security Assurance
- Quality Assurance including Inspection and Testing
- Mechanical Completion

Commissioning – Thompson Global Partners has demonstrated capabilities in the commissioning of plants throughout the world. Their team of specialized professionals will work with client personnel to achieve:

- Pre-Commissioning and Commissioning Procedure Development
- Utilities and Infrastructure Evaluation
- System and Equipment Inspections
- Stand-alone Testing

Start-up – Thompson Global Partners provides trained personnel dedicated to the project for startup services to ensure safe operation and a smooth transition to the client operational team. We provide:

- Supervision of Subcontractors, Vendors, Engineering Teams
- Staff Training Materials and Instruction
- Troubleshooting and Problem Resolution
- Safety and Environmental Inspections
- Plant Performance Evaluation and Optimization

Providing this range of services is made possible by the TGP organizational staff, which consists of a full complement of engineers within each of its specialty departments:

- **Process/Chemical Engineering**

  Our Process Engineers are responsible for understanding the chemical and thermal processes occurring in the facilities we design. Our experience includes reactor, column, heat exchanger, dryer, pump, compressor and cooling system design amongst numerous process possibilities as well as extensive experience with a variety of process simulation packages including AFT Fathom, CC Flow, ChemCad, MathCAD, HTRI and PHA-PRO. Their responsibilities include determining optimal process configurations, designing equipment and developing the basic process control philosophy necessary to produce an economically and environmentally optimized plant. TGP Process engineers typically provide Heat and Material Balances, Process Flow Diagrams (PFD's), Piping and Instrumentation Diagrams (P&ID's), piping network hydraulics modeling, equipment process specifications, safety evaluations including Relief and Safety valve design and documentation, HAZOP's and hazard

reviews, as well as the design of all required Utility and Off-site requirements including Waste Effluent Treatment Facilities.

- **Mechanical Engineering**

  TGP's Mechanical Engineers have significant design and operating expertise for a wide range of mechanical equipment, including pumps, multi-stage compressors, refrigeration systems, heaters, material handling equipment (conveyors, lifts, grinders, filters, separators, etc.). They can prepare final, complete-for-purchase specifications of all static and rotating equipment, as well as all vessels, tanks and other storage devices. This includes performing the appropriate modeling and analysis of equipment designs or reviewing those of equipment providers. They also perform technical and economic evaluations of all Vendor proposed supplies.

- **Civil / Structural / Architectural Engineering**

  The Civil/Structural Engineering staff at TGP can provide all necessary designs for all of the Civil structures required for the equipment and facilities being installed in our plant projects. Their expertise covers a wide range of applications including static and dynamic analysis, steel and concrete structures, slab and foundation design, general civil and earthen work, road, pond and underground structures design, as well as pre-fabricated structures, HVAC and fire system design.

- **Electrical Engineering**

  The Electrical Engineering staff at TGP provides expertise in low, medium and high voltage distribution system design as well as expertise in the design of Arc Flash avoidance equipment. Full design capabilities includes substation, motor control center (MCC), switchgear, power control, automatic and manual motor starter control scheme, switch gear breakers and UPS systems design. The Electrical Engineering team provides a complete package of design and installation documentation including drawings and specifications for instrumentation cables, raceways, cable schedules, remote I/O cabinets, cable tray systems, motor schematics, one-line diagrams, wiring diagrams, installation details, and lighting plans.

- **Instrumentation/Controls Engineering**

  TGP's Instrumentation and Controls Engineers provide the expertise to design, specify and install a controls system that provides the regulatory and supervisory process control required to ensure that a facility operates as intended and in a safe manner. The Instrument/Controls group at TGP provides control strategy development and the design, specification, programming and installation assistance of all digital and analog control systems. Their capabilities include complete detailed design and programming of DCS and PLC systems, participation in HAZOP and SIL evaluations, preparing detailed cause & effect, logic and loop diagrams, as well as assisting in PFD and P&ID development

- **Piping Engineering**

  TGP offers complete Piping Engineering capabilities for all standard piping materials as well as non-standard applications including high temperature operations, hot oil and steam jacketed systems, large diameter piping systems, and slurries. TGP experience also includes piping systems that include rubber, polypropylene, Teflon, reinforced thermal plastic resin, PVC, polyethylene, PVDF, chrome molys, various stainless steels, aluminum, and nickel alloys such as inconels, incoloys and hastelloy, and glass lined steel components. The TGP Piping Engineer staff can provide a complete range of services including pipe stress analysis of all piping related components, preparation of specifications for piping materials, piping design, pipe supports, pipe fabrication, welding, erection and testing.

- **Piping/Equipment Design & Layout**

  TGP's designers provide complete 2D and 3D capabilities for preparing Piping, Mechanical, Electrical, Instrumentation, Architectural and HVAC drawings as well as Piping and Instrumentation Diagrams (P&ID's). Our design staff works in cooperation with each of the Engineering disciplines to provide a complete documentation of the new facilities. Their design practices include ensuring adequate operational and maintenance space allowances have been included, checking for piping, cable raceway, and personnel interferences and verifying all designs are in accordance with Vendor specifications. TGP's designers are experienced with the use of such software design tools as SmartPlant P&ID's, INTOOLS and 3D SmartPlant.

- **Safety, Health & Environment and Security**

  TGP believes that the Safety, Health and Environmental (SH&E) aspect of every project is the most important consideration of its engineering and design efforts and represents one of the main satisfaction criteria utilized by its Clients when evaluating TGP. Safety is an integral part of TGP's engineering designs from concept development through Detailed Engineering to the completion of construction. All projects incorporate good engineering practices as well as the application of risk management protocols, structured HAZOP analysis, SIL analysis and safe construction programs. TGP's goal is the delivery of a well designed, safe-to-operate facility to our customers.

  SH&E considerations include not only the design of facilities that are safe to operate and environmentally compliant, they also include construction phase Safety considerations as well as the workplace health and safety of its employees and that of its Clients at our engineering offices and plant sites. During the Construction Phase of a TGP will also coordinate with its Clients and the Local Authorities to ensure all Safety and Security regulations and requirements are met and maintained throughout Project Execution. As part of its overall Risk Management policy, TGP's staff continuously strives toward a "Zero Incident" culture by making its line management accountable.

- **QA/QC**

  TGP's Quality Assurance/Quality Control (QA/QC) department's primary goals are to ensure that we provide our customers the product they need and desire in a form that meets or exceeds their requirements and ultimately provides customer satisfaction. The TGP QA/QC group ensures that both the products delivered to our customers and TGP's internal processes are performed to the highest standards. TGP's goal is to ensure that all of our services are "fit for purpose" and "right first time". We continuously monitor and update our internal processes as well as provide training to attain these goals.

- **Project Cost Estimation & Controls**

  TGP also provides exceptional project Cost Estimation and Cost Control services for all stages of project development. It's Estimation and Controls department prepares reliable, preliminary capital cost estimates for new, grass roots facilities as well as revamped operations using a combination of proprietary data collected in its own database as well as purpose created proprietary estimation software. Estimates can be prepared for each stage of a projects' development, allowing Clients the opportunity to re-evaluate a projects' economic viability of proceeding to the next stage. The accuracy of any Estimate, ranging from ±50% to ±5%, is directly related to the projects' stage of development and its level of definition. TGP provides Class 1 (Conceptual) through Class 5 (Final Design) Estimates as required.

Program Management Contractor (PMC) – TGP's capabilities serving as the PMC, providing Program Management on behalf of its Owner/Clients, extends to numerous projects around the globe. In simplest terms, Program Management is the coordination of all aspects of a complex project or effort, usually in the case when a project owner lacks the resources to perform all of the required tasks themselves. In most cases construction activities are involved but, depending on the complexity of the project, the tasks will also typically include some or all of the following:

- Overall Program Management
- Program Management Support
- Project Management
- Project Engineering
- Technology/Licensor Management
- Planning Management
- Planning Support
- Cost Control Management
- Cost Engineering
- Capital Cost Estimating
- Cost Support
- Basic Engineering
- Front End Engineering
- Engineering Management
- Selected Detailed Engineering
- Primary Detailed Engineering
- Selected Design Works
- Primary Design Works
- Procurement Management
- Procurement Support
- Materials Management
- Materials Support
- Commissioning Planning Management
- Construction Management
- Construction Supervision
- Constructability Reviews
- EPC ITB Preparation
- EPC Bidding Management
- EPC Contractor Management
- EPC Contractor Support
- Operation of the Completed Project
- Maintenance
- Management of Change (MOC)

TGP's experience includes the knowledge and capability, as well as the engineering expertise, to provide and institute "Program Management" for those projects of the size and complexity requiring such execution. The "Program Management" approach makes use of other specialists, subcontractors and partnerships to perform portions of the work while allowing TGP to oversee, manage and maintain overall project Quality. TGP's recent experience includes Program Management of a $US 2 Billion expansion project for Ibn Rushd in Yanbu, Saudi Arabia and managing two large engineering firms on a Confidential project for SOCC to be located in the Middle East.

Description

Program Management is typically provided and performed by a company composed of highly experienced individuals utilizing a combination of their own personnel and resources, along with a combination of subcontractors and partners. The Program Management firm will possess the primary skills necessary to manage the work scope of its subcontractors and partners to ensure the completion of the project.

Many companies may lack the resources and experience to design and execute medium and large projects, to manage the various contractors which produce the project designs, procure the equipment and materials, construct the facilities, commission and often also start-up the utility systems of new or modified facilities.

To bridge this gap between the Owner and the specialist companies who will execute the project, it is common in the engineering and construction industry to appoint a Program Management Contractor (PMC) to act as the Owner's Representative in all communications with the subcontractors. The PMC becomes an integral part of the Owner's project team, guiding the Owner through the design, costing, scheduling and construction phases of the project.

The Role of the PMC

The PMC manages the project on behalf of the Project Owner. More specifically, it means implementing a very large, complex set of activities that includes:

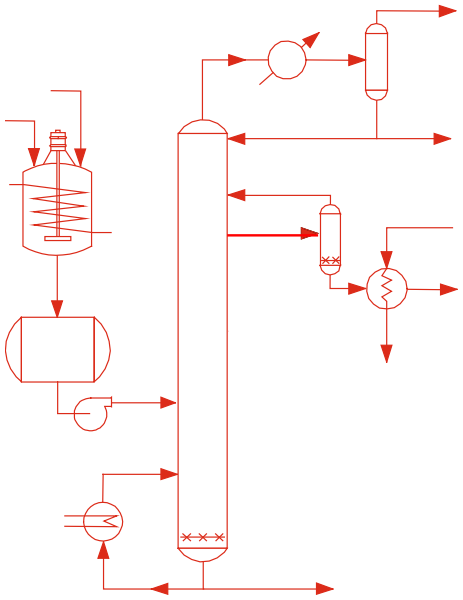
- Defining a contracting strategy for the project
- Selecting contractors for the various phases of the project
- Determine/Agree on and monitor the project:
  - Scope
  - Cost
  - Schedule
  - Progress
- Determine/Agree on project procedures (quality control/quality assurance plan, contracting plan, technical standards, etc.) with contractors
- Participate, assist and/or facilitate with permitting activities
- Participate in meetings with suppliers and contractors
- Participate in site visits and existing conditions verifications
- Participate in technical reviews such as Design Drawing reviews
- Review and approve designs, drawings and other technical documentation through every stage of project design:
  - Economic and Technical Feasibility Study
  - Basic Design Package
  - Front End Engineering & Design (FEED) Package
  - Detailed Engineering
- Manage and track Request for Information (RFI's) between design and construction contractors
- Review and approve/reject change orders
- Prepare reports for Owners review
- Liaise with Owners staff
- Supervise construction, commissioning and utility start-up

TGP Process, Specialty Industry, Municipal and Government Experience

General Process Engineering - TGP specializes in providing engineering and design services to the chemical processing and manufacturing industry. Our process engineering staff has experience in a wide range of process technologies as well as extensive conceptual design experience including: pilot plants and scale-up/commercialization of processes for the specialty chemical, phosphate fertilizer, polymers, pharmaceutical and hydrocarbon industries. As part of Process engineering, we offer environmental engineering services on all aspects of the major processes, including water management, waste treatment and hazardous waste incineration. Our experience enables us to provide our clients with all the necessary services to construct a grassroots facility or revamp an existing facility. TGP's experienced staff routinely performs a wide variety of small projects, studies and minor retrofit modifications with the same attention to detail and dedication to quality that is provided for our larger projects.

Chemical Unit Operations - TGP's specialists have a broad range of Unit Operations experience resulting from their background, as both employees and as consultants, with numerous engineering and operating companies, as well as with equipment manufacturers. General Unit Operations experience includes:

- Reaction
- Distillation
- Absorption/Adsorption
- Crystallization
- Slurry Handling
- Centrifugation
- Filtration and Clarification
- Water Management
- Material Handling
- Process Safety Management
- Process Optimization & Laboratory Testing



Chemicals & Specialty/PetroChemicals - Process engineering is the core of TGP's engineering specialty and consists of a group of broadly experienced chemical engineers, with their primary goal being the design of safe, economical, and environmentally compliant facilities. Their experience spans several technologies specific to the chemicals, specialty chemicals and petrochemical sector. This knowledge covers all of the specialty equipment peculiar to this industry such as batch operations, feed systems, reactors, tanks, separations-distillation, solvent extraction, centrifugation, filtration, drying, product handling, and batch sequencing. Our process engineers have also designed systems to handle hazardous or toxic materials.

Development of first-of-a-kind technologies, use and integration of third party technology, and preparation of conceptual as well as basic process packages, followed by detail engineering, construction management, commissioning, and start-up services are all provided by TGP's Process engineering staff.

- Agrichemicals/Herbicides
- Amines Alcohols
- Aromatics
- Glycerin/Fatty Acids
- Halochemicals
- Phosgene
- Phosphate Anti-Oxidants
- Pigments
- Phthalic Anhydride
- Propylene Oxide/Glycol
- Terephthalic Acid
- Urethane Chemicals
- Vinyl Chloride/EDC

The TGP Process engineering staff stands ready to assist its Specialty Chemicals Clients with whatever challenge may arise.

Petroleum Refining - TGP's personnel possess expertise in the design and engineering of petroleum refining projects encompassing virtually all modern petroleum processes, including sour and heavy oil processing, cogeneration and the upgrading of facilities to meet the new transportation fuel specifications. Our experience has enabled us to provide our clients with the necessary services to construct new, grassroots units or to revamp their existing facilities.

- Process Simulation & Optimization
- Crude/Vacuum Distillation
- Isomerization
- Desulfurization
- Alkylation
- Lube Oil Processes
- Energy Conservation
- Environmental Audits
- Process Safety

As a result of continually increasing global demand, oil refiners have spent significant effort and investment worldwide to revamp and expand their existing refining facilities to best utilize installed capacity. Specific projects differ, but they are generally directed at one or more of the following objectives:

- Increased capacity
- Increased yield and/or energy efficiency
- Technology modernization
- Increased feed and/or product flexibility
- Environmental compliance
- Modification of product slate and/or specification

The TGP staff has the experience to assist its Clients with the attainment of these goals.

Fertilizers & Inorganic Chemicals - TGP personnel have extensive experience in the design, engineering, procurement, and construction of phosphate and nitrogen fertilizer projects. This experience includes plants for producing wet process phosphoric acid, super phosphoric acid, urea, ammonia and related ammoniated granular fertilizer products.

TGP has a team of personnel with a wealth of experience in the fertilizer industry spanning several decades, a major portion of which is based on the production of phosphoric acid. TGP process engineers and consultants are recognized worldwide for their expertise in fertilizer technology and its related operations such as phosphoric acid plants. Another sector of the market is the nitrogen based fertilizers, requiring the production of urea or ammonia as an additive or feedstock. Many of TGP's engineering staff has participated in the design of facilities producing nitrogen containing precursors.

As a result of TGP's location in Tampa, Florida, adjacent to the Central Florida phosphate fertilizer industry, many of TGP's engineers have significant backgrounds in the design and operation of fertilizer facilities. This experience has been acquired through their previous work assignments with companies such as The Badger Company, Gulf Design, Wellman-Lord, U.S. Agrichemicals, American Cyanamid, Gardinier, Koch, PCS Phosphates and Monsanto. Over the past several decades, our team members have worked on dozens of fertilizer projects around the world.

TGP personnel have played a prominent role in the expansion of the phosphate fertilizer industry throughout the world with successful major projects in China, Israel, Mexico, Brazil, Jordan, Qatar and Morocco, as well as the United States. They have successfully executed numerous feasibility studies and development projects relating to phosphate mining, phosphate chemicals and the production of fluorine compounds. Additional fertilizer and phosphate technology projects have included:

- Optimized P_2O_5 recovery
- Water Management (Zero discharge)
- Ammonia production plants
- Uranium Recovery projects
- Isothermal reactor systems and optimizations
- Expansion and modernization of existing phosphoric acid and granulation plants
- Modifications to meet environmental emission/effluent regulations
- Improved energy conservation and recovery modifications
- Fluosilicic Acid (FSA) recovery and utilization
- Urea production plants including granulation for use in nitrogen based fertilizers

Phosphate Fertilizer Experience

The personnel of TGP have been involved in every aspect of a wide range of phosphate fertilizer projects, in every phase of engineering, including startup and commissioning. Specific operational and technological areas of expertise include:

- Evaporation
- Filtration
- Clarification
- HFSA Recovery
- Water Balances
- Isothermal Reactors
- SPA Filtration
- Utilities

Specialized Engineering services related to phosphate facilities include:

- Feasibility Studies
- Process Studies
- Environmental
- Permitting
- Capacity Evaluations
- Debottlenecking
- Front End Engineering Design (FEED)
- Detailed Engineering
- Estimating (all levels/gate stages)
- Process Hazard Analysis & Facilitation
- Commissioning
- Startup
- Operator Training
- Operating Manual Preparation

FSA Recovery and Related Products

TGP has extensive experience with the Recovery of FSA from the typical fluorine rich fertilizer facility waste stream. These FSA recovery streams can represent a potential income stream for TGP's Clients rather than a costly disposal stream by avoiding the typical waste handling procedure of capturing the acid by-product stream, neutralizing it and disposing of the resulting waste. The method of disposal can result in costs running into millions of dollars per year.

An alternative approach is to use the typical 18-20% fluorine waste stream as a feedstock to an FSA Recovery unit. Such a process could also be set up as an independent, secondary processing venture with other partners if desired. The recovery process can in fact produce saleable products for either domestic consumption or export using these fluorine feedstock streams.

Potential FSA recovery products include:

- FSA
- Aluminum fluoride
- Cryolite
- Hydrofluoric acid
- Fluorspar
- Fluosilicates

A typical fertilizer complex processing more than 100 million tonnes of phosphate ore annually could potentially recover in excess of 1.0 million tonnes of these various fluorine compounds per year.

Mining, Mine Development and Processing Plants

TGP's capabilities include geo-statistical analysis for phosphate deposits, including determination of the physical and chemical characteristics of the resource area stratigraphy. TGP can develop mining plans for the phosphate reserve which utilize draglines or a trucks and shovels approach. Beneficiation services include de-sliming and flotation to for calcium and magnesium carbonates removal from the ore to produce a phosphate concentrate suitable for use in the manufacture of wet process phosphoric acid. Battery limits would include receipt of the ore, all requisite pre-processing steps, loading of concentrate into rail cars or other transport, and pumping of plant tailings.

TGP can also provide the engineering and design for all necessary process plants: ammonia, sulfuric acid, phosphoric acid, and granulation plants as required. These facilities can be located adjacent to the mine or any economically determined location. Such location and economics can also be provided by TGP.

Granulation Experience

Environmental laws have increasingly been directed at reducing the amount of fertilizer and fertilizer related components reaching drinking water aquifers and in stormwater runoff to local bodies of water. As a result, the application of liquid fertilizers by farmers and commercial firms has been all but eliminated. The required methodology now involves applying dry, granular, "time release" (some with custom design dissolving coatings) fertilizers to control the rate at which the various components can get into the environment. In addition, the cost of fertilizer components have risen dramatically over the years, leading to custom designed granular fertilizers that provide the specific nutrients required by each agricultural product. These granular fertilizers are produced in specialized equipment in the granulation section of a fertilizer production complex.

TGP's personnel have been associated with the fertilizer industry of central Florida for the past forty (40) years and have substantial experience with the design of granulation systems for products including granulated triple superphosphate (GTSP), monoammonium phosphate (MAP), diammonium phosphate (DAP), NPK and dicalcium phosphate (DCP). Process techniques associated with these projects has included slurry processes, screening, conveying, recycle, bagging, and truck and ship loading systems. A more detail list of project experience is included at the end of this document; however the following represents typical experience:

- 50 TPH GTSP Plant
- Dual 80TPH GTSP/DAP plant

- 120 TPH DAP/NPK plant (Slurry Process)
- Pre-neutralizers
- Pipe reactors

Nitrogen Based Compound Experience

As most fertilizers consist of nitrogen, potassium and phosphate containing components, the background of TGP's personnel also includes significant "nitrogen" experience that includes designs for urea manufacturing and handling systems, as well as ammonia and nitric acid systems. Specific experience includes a Urea expansion project for Koch Nitrogen Company utilizing the Urea-Casale technology as well as several ammonia projects utilizing Haldor-Topsoe technology. The Qatar Fuel Additives Company (QAFAC) Evaluation and FEED projects, located in the Middle East, included Haldor-Topsoe technology for the installation of one of the world's largest ammonia producing plants. TGP personnel experience also includes being chosen as Haldor-Topsoe's ammonia Technology engineers, providing all necessary engineering documentation required for the transfer and incorporation of their technology. Although a more detailed list of project experience is included at the end of this document, the following represents typical experience:

- Nitric Acid and Ammonium Nitrate Manufacturing Plant
- Ammonia Plant Reactor Design
- NPK Fertilizer Plant – Nitric Acid Acidulation
- Urea Plant Expansion

Plastics & Polymers – The background of TGP's personnel also includes a solid understanding of the various process unit operations related to polymer production and processing. This knowledge includes four primary operations areas of polymer production:

- Raw Materials Handling
- Process and Reactor Technology
- Polymer Recovery and Finishing
- Specialty Utility Systems

The Raw Materials Handling section of a typical polymer manufacturing facility presents challenging problems due to the physical properties of the raw materials which must be considered in design. Examples include the sensitivity of monomers to heat and oxidizing agents, the possibility of monomer auto-polymerization, and the special handling required with catalysts that may be toxic, carcinogenic, or explosive. Previous experience includes plants designed to process monomers such as acrylonitrile, bisphenol-A, 1,3-butadiene, butene-1, butyraldehyde, ethylene, propylene, ethylene oxide, isobutylene, isoprene, phosgene, styrene, vinyl acetate, vinyl chloride, and 2,6-xylenol. Often, solvents and un-reacted monomers are recovered and purified within the facility via absorption, adsorption, and distillation. Many projects involve modifying existing plants to improve raw material and energy efficiencies. Our experience with high vacuum distillation, distillation of heat-sensitive monomers such as styrene, butadiene, butene-1, and 2,6-xylenol, light ends removal, drying, separation and recovery of un-reacted monomers from highly viscous polymers under vacuum makes TGP particularly able to meet any potential polymer handling requirements.

TGP's Process and Reactor Technology experience includes the application of heat and mass transfer know-how and kinetics to chemical reactor design and scaling up reactor performance data for first-of-a-kind projects. Reactor types designed and used successfully include agitated liquid phase tank reactors, fixed bed reactors including tubular, radial, and packed configurations, and fluid bed reactors. These designs have been applied not only to polymerization, but liquid phase chlorination, vapor and liquid phase oxidation, vapor and liquid phase alkylation, dehydrogenation and hydrogenation as well. TGP's personnel have experience in bulk, emulsion, suspension solution, and vapor phase polymerizations and have completed projects for polymers including polybutene, PVC, polyurethane, polyethylene and polypropylene (olefins and olefins polymerization), polystyrene, ABS resins, HDPE, LDPE, latices, SBR, polyphenylene oxide, polyether, Butvar, acrylic fibers, butyl rubber, polyvinyl acetate, polybutylene, polypropylene, and other such products. This experience covers all aspects of reactor charging, mixing, and temperature control; discharging of the reaction mass; and pumping of viscous, shear-sensitive, high melting, or gummy materials. These designs include automated, computer-controlled batch as well as continuous polymerizers.

Polymer Recovery and Finishing experience includes all aspects of polymer recovery and finishing and the handling of materials that may have high melting points or that may be viscous, heat-sensitive, or gummy. Heated die, hot face, and underwater pelletizers have been employed for various products and for final compounding lines for additive and master batch addition. TGP is

also experienced in designing solids handling systems for both additives and products. Experience includes designs to process bulk polymers, rubbers, resins, suspensions, emulsions and powders.

Other areas of TGP experience in the recovery and finishing of polymers include the following:

- Air conveying
- Emulsion coagulation
- Bagging and baling
- Extrusion
- Polymer bead blending
- Filtration
- Bulk storage
- Flash drying
- Compounding
- Pelletization
- Centrifugation
- Pigment compounding
- Polymer bead classification
- Prilling
- Steam stripping of solvent and un-reacted monomer
- Devolatilization of polymer
- Screen conveying
- Distillation of polymer

The Utility section associated with a polymer manufacturing operation can also require special technological expertise as a result of the physical; properties of the materials used, particularly during the reaction phase. Most polymerization and production reactions require very specific controls of the temperature, viscosity and pressure; all of which requires the interaction of various utilities. The most notable is the need for coolant. TGP has significant experience with the design of refrigerant based cooling systems which can include ammonia and non-CFC based compressors. Both direct and indirect cooling systems along with their sophisticated controls systems have been designed by TGP personnel. Additionally, nitrogen, instrument air, steam and caustic systems have been designed to operate in concert with the critical operations of polymerization reactor systems.

VCM/EDC (Vinyl Chloride Monomer/Ethylene Dichloride) – TGP's VCM/EDC experience represents an additional specialization within the general Plastics & Polymers technology knowledge base.

TGP's personnel have assisted BF Goodrich and OxyVinyl (previously GEON) in the development and transfer of their technologies for VCM production and have provided engineering, procurement, and construction management for facilities using their technologies since the early 1970s. TGP continues to offer a broad range of services as an integral part of its engineering and project management capabilities to support its clients in various phases of VCM projects, including:

- Consulting - Including technical evaluation and economic feasibility studies
- Existing facility modernization and revamp services from feasibility studies through design, engineering, procurement, construction and startup
- Full project management, design, engineering, procurement, construction and startup services for expansions and grass roots facilities

TGP's experience in Vinyl Chloride Monomer/Ethylene Dichloride technology includes the following major process features:

- Fluid bed oxyhydrochlorination reactor systems - Offering proven safe, reliable technology which is raw material and energy efficient
- High temperature direct chlorination technology - Coupling the reaction system with distillation results in capital and energy savings
- Vinyl Chloride Monomer via Ethylene Dichloride Cracking
- Emission control, wastewater treatment, and incineration technologies.
- Technology transfers/exchange among licensees – Resulting in improved plant operation, safety, maintenance and analytical techniques

Batch and Semi-Continuous Processing - The staff at TGP has over two decades of experience in the design, procurement, and construction of facilities utilizing batch and semi-continuous processing. Batch and semi-continuous processing techniques are applied in complete processing plants such as resin, specialty chemical, and multi-purpose facilities as well as in separate unit operations in otherwise continuous processing facilities. These techniques present design and process control problems distinctly different from continuous processing. These problems include:

- Control requirements peculiar to cyclic operations
- Fluctuating utility demands
- Fluctuating feed and product flows
- Maintaining product integrity during cyclic operations
- Cyclic operations hazards
- Flexibility requirements demanded by using equipment for different operations

Batch and Semi-continuous Unit Operations

Numerous specific operations in chemical production and oil refining are carried out in batch or semi-continuous fashion. TGP has extensive experience in such unit operations, including:

- Reaction
- Adsorption
- Distillation
- Centrifuging
- Drying
- Filtration
- Reclaiming

Batch Polymer Production

Resins and polymers are often produced batch-wise, primarily due to the need for control of polymerization reactions precisely and the need to produce many formulations in a single facility. Specific examples of the experience of TGP's personnel are highlighted in the following summaries.

PVC - Many facilities produce suspension polyvinylchloride in a batch mode under both manual and computer control. The computer system maintains a recipe file for each product to be produced including reaction conditions and control. The reaction ingredients are fed in the proper sequence under computer control. Polymerization control objectives are to maintain a specified reaction temperature and mix volume, detect reaction abnormalities, compare reaction progress with kinetic and dynamic heat transfer models, and determine the reaction endpoint.

Resins - TGP personnel were responsible for the expansion of an existing resin manufacturing plant permitting the production of over 300 batches per year of various grades of hard resin in 4 reaction kettles and over 600 batches per year of resinate materials in only 4 reaction kettles. Precise product scheduling and feedstock control were necessary as more than 35 liquid and solid reactants, solvents, and other feedstocks were required to produce the various end products safely. Efficient batch cycling to produce the many grades of resin products as well as utility system optimization to ensure efficient heating, cooling, and purging was required as part of the design of these types of batch processes.

Batch Chemical Production

Non-commodity chemicals are often produced in batch systems and often in multi-purpose type facilities. Typical facilities experience includes:

- Herbicides and Engineered Plastics facilities involving batch reactor systems integrated with semi-continuous and continuous downstream processing
- Alkyd bromine plant, relocated and expanded to produce numerous liquid and solid alkyd bromines (All made batch-wise starting from bromic acid from other reactions in the facility)
- Diphenolic acid plant producing this specialty chemical using classic batch processing techniques

Batch Processing in Continuous Facilities

Even in inherently continuous facilities such as commodity chemical plants and petroleum refineries, batch processing can be usefully applied. Example applications include batch oriented units for off-spec product recycle as well as quality control testing at continuous plants to ensure that high purity product requirements are met; and campaign batching to refine different batches of oil distillates and residues at petroleum refineries

Semi-continuous Fertilizer Production

Granular fertilizer plants located throughout the world use semi-continuous processes in the manufacture of specialized fertilizer blends. Some plants make up to eleven different grades of fertilizer produced from as many as eight raw materials. The production rate for the various grades varies according to the required recycle ratio and the operating conditions. The raw materials vary in nature from corrosive acids, to hygroscopic solids, to super-cooled liquids. TGP's experience in handling the various feedstocks and products for complete quality control and minimum contamination has made TGP’s staff some of the most desired for the engineering and construction management of fertilizer plants.

Semi-continuous Petroleum and Chemical Refining

Semi-continuous operation is often used in refining of petroleum and chemical products where different product specifications require different processing conditions, times, temperatures, solvent dosing, etc. Examples of "blocked", semi-continuous operations in which TGP personnel have provided engineering expertise include:

- Lube Oil "finishing" in which each different lube oil product requires varying degrees of:
  - Solvent deasphalting
  - Dewaxing
  - Hydrofinishing
- Production of fatty acids from different sources like tallow, coconut oil and other fats
- Hydrogenation and high vacuum distillation of fatty acid by-products

Environmental - TGP offers a complete range of Environmental Services as an integral part of its engineering and project management services. From environmental compliance to environmental engineering and design, TGP can handle every aspect of your project.

Our experienced environmental engineers and project managers bring their expertise to our clients' environmental needs, providing a fully integrated team of all TGP disciplines and product lines, including project controls, purchasing and construction management.

TGP's environmental services include environmental permitting and regulatory compliance services, as well as environmental engineering and design services.

TGP provides its Environmental Compliance and Engineering services to both domestic and international projects and are supported by a full staff of process, mechanical, electrical, instrument, structural and civil engineers, including full-scale CAD services. TGP also offers state-of-the-art computer modeling capabilities including those for air emissions dispersion and contaminant fate and transport modeling.

TGP's background with industrial process design makes it uniquely qualified to determine the source and types of waste stream contaminants, to determine their quantitative levels, and to understand and design the best techniques for their removal and/or mitigation. TGP personnel have been involved with environmental projects in the municipal wastewater treatment, refining, specialty chemical, fertilizer and phosphate, pulp and paper, heavy industrial, manufacturing and power industries, both domestically and internationally. TGP stands ready to assist its clients with any environmental aspect of their projects by providing the following capabilities:

- Permitting & Regulatory Compliance
  - RCRA Permits
  - NPDES Permits
  - SPCC plan development
  - SARA Title III, Tier II filings
  - Treatment facilities
  - Permit negotiation
  - Compliance monitoring
  - Closure plans
- Air Quality Services
  - Atmospheric dispersion modeling
  - Construction permitting
  - Title V permitting
  - NESHAP compliance
  - NSPS compliance
  - PSD permitting
  - Opacity testing
  - Emission inventory
  - Compliance audits
- Environmental Site Assessments

- Site & facility assessments
- EPA compliance audits
- Phase I and II assessments
- Phase III services
- Compliance programs

- Remediation Services
  - Remediation investigations
  - Feasibility Studies
  - Risk assessments
  - Waste stream treatment
  - Computer modeling
  - Conceptual remediation design

- Design Services
  - Preliminary design
  - Conceptual design
  - FEL/BEP/FEED Phase design
  - Detailed Engineering
  - Construction management
  - Estimation and economic evaluation
  - Start-up assistance
  - Air pollution control systems

- Construction Management Services
  - Air emissions control systems
  - Water treatment systems
  - Facility design-build
  - Soil & Groundwater remediation
  - Decontamination/decommissioning
  - Underground storage tank removal

- Stormwater Permitting and Compliance
  - Permitting assistance
  - Regulatory interface/liaison
  - Stormwater pollution prevention plans
  - Monitoring/reporting
  - NOI filings
  - Sampling assistance/programs
  - Best management practices

- Asbestos & Lead Based Paint
  - Asbestos & lead based paint inspections
  - Sample collection
  - Abatement design and specifications
  - Abatement management
  - Air testing
  - Industrial hygiene support
  - Operation and maintenance programs

TGP's resolution of waste stream contamination includes the removal of VOC's (benzene, toluene, xylene, and other aromatics) from vent gas and wastewater streams, particulates mitigation from vent gas streams, reduction of specific contaminants from solids waste streams, as well as reactive systems which target specific chemical contaminants. The techniques required vary depending upon the specific contaminant, its source, the final point of disposition and the local governing regulations.

A full range of techniques including recycling, treatment and disposal are investigated to provide an optimum and economical environmental solution to every environmental problem. Typical process technologies employed include:

- Wastewater treatment:
  - Aeration
  - Anaerobic digestion
  - Settling
  - Stripping
    - Air
    - Steam (Atm or Vacuum)
    - Natural Gas
  - Clarification
- SO_2 scrubbers
- Liquid, gas and solid waste:
- Incineration
- Thermal oxidation
- CO_2 removal, refrigeration & compression
- Waste-to-energy systems
- Waste management

Municipal & Government Engineering - The TGP team's experience in the engineering and construction management of Municipal & Government projects includes an understanding that all projects need to be functional and cost effective. Municipal & Government project experience includes Water, Wastewater and Sludge Treatment, Back-up Power Generation, Pumping Stations and Miscellaneous Lighting. Our team of electrical, instrumentation and structural engineering professionals are not only technical experts but also in tune to the critical community needs of our clients.

TGP is also completely familiar with Government regulatory requirements and provides complete Planning, Engineering and Construction Support services to meet these requirements. Adherence to budgets and project timetables along with conformance to environmental and safety issues are TGP's focus for success. A summary of TGP personnel experience is provided with this document.

TGP works as an extension of our clients resources, maintaining a true team concept. TGP technical capabilities include:

- *STUDIES*:
- Project Feasibility
- Arc Flash
- Project Economics
- Lighting
- Lightning Dissipation

- *ENGINEERING*:
- Electrical Design
- Instrumentation
- Structural Design
- SCADA Systems
- Equipment & System Specifications

- *CONSULTING:*
- Project Management
- Construction Management
- New Technology Evaluations
- Procurement

- *CONSTRUCTION MANAGEMENT:*
- On-Site Inspection
- Resident Project Representative
- Submittal Review
- Bid Evaluation

Pharmaceuticals – The expansive history of TGP's team is in the engineering and design of bulk, specialty and fine chemical manufacturing and processing facilities. This background includes work in the pharmaceuticals industry as well, predominantly in the bulk pharma manufacturing arena. TGP's project experience includes design of new, grass-roots facility installations as well as revamp, modification and debottlenecking projects. Our engineering staff has extensive conceptual design experience including: pilot plants and scale-up/commercialization of processes for the chemical, specialty chemical, pharmaceutical and hydrocarbon industries. TGP capabilities:

- Process / Chemical Engineering
- Process Development and Commercialization
- Feasibility Studies
- Basic Engineering & Front End Package Experience
- Detailed Engineering Design and Project Execution Experience
- World Class Automation and Control Systems Design
- Hazard Analysis

TGP's personnel have been involved with a wide range of pharma operations and product types including:

- Bulk Pharma Production
- API Technical & Sterile
- Fermentation
- Biotechnology
- Formulation
- Fill & Finish
- Intermediates
- Vaccines

TGP's pharmaceutical plant design experience also includes reactors, bio-reactors, organic synthesis, pilot plants, Nutsche filters, centrifuges, spray dryers, wet mills, granulators, coating pans, solid dosing, continuous dryers, vacuum transfer, clean rooms, specialized HVAC systems, filling operations, packaging, RO and wash systems, and CIP systems, among others.

Our international experience with clients in other chemical industry sectors has provided TGP with a highly diversified resume of projects. This worldwide experience benefits TGP's pharma clients as well. Due to increased production costs in the U.S., all pharmaceutical companies have increased their drug production in non-U.S. locations to obtain more cost effective production and beneficial financial incentives. TGP understands this need for remote production locations as part of the extremely competitive nature of the pharmaceutical industry and the reduced time frames required for the conversion of new products from laboratory scale research projects to full scale, marketable products. TGP welcomes this challenge and stands ready to assist its clients in achieving these goals in a fast and cost effective manner.

Power, Heat Recovery & Cogeneration Experience - The need for power in its many forms is a common element in every industrial process plant. Consequently, its production, conservation and/or conversion are a design consideration in every industrial project in which Thompson Global Partners (TGP) participates. The distinction is merely the extent of the power productions' role in the project: Is it merely a component of a larger overall objective or is it production the primary goal.

The production of steam and generation of electricity are basic utilities required by all industrial process plants, and therefore represent basic components to the facilities designed by TGP for its customers in the Refining, Chemicals, Petrochemicals, Pharmaceuticals, Pulp & Paper, and Manufacturing Industries. TGP regularly provides the design, procurement and construction of power generation units associated with these facilities. The high cost of fuels, their variety and sources, as well as the associated infrastructure, has made power generation extremely competitive and also made considerations for energy recovery and cogeneration a high priority in every projects design. Coupled with the primary issues of obtaining power are the operating and environmental concerns including high fuel prices, sitting issues, hazardous waste concerns, limits on stack emissions and concerns regarding carbon dioxide.

TGP's design, engineering, and project management team has a complete understanding of the design and operating issues involved and prides itself on a culture characterized by flexibility and a willingness to partner with its Clients as well as providing the responsiveness, control and single source accountability needed for project success. TGP's personnel have experience with combined cycle, cogeneration, and coal-, oil-, and gas-fueled plants as both brownfield and greenfield projects. TGP's services also include designs for NOx and SOx control as well as dispersion modeling of all potential emissions.

TGP's services to the power industry include the following:

- Up-front Technical Feasibility Studies
- Process Engineering
- Specialist Engineering and Design (All disciplines)
- Project Management
- Project Planning, Estimating and Project Controls
- Procurement

- Construction Management
- Start-up, Training, and Field Support

TGP's staff of technical professionals has significant experience in the design, construction, start-up and operation of both fossil and nuclear power generating stations that includes new, retrofit and upgrade projects. The TGP staff experience includes a variety of strictly power generation facility types including:

- New and Existing Coal Plants
- Gas turbine
- Nuclear
- Renewable Energy
- Transmission Networks

As a result of its experience in the process industry, TGP also has significant experience with numerous "power related" projects including adaptation of various cogeneration technologies to different steam systems, hot oil systems, fired re-boilers and air coolers. TGP is a full service contractor providing process technology selection, front-end engineering and design, detailed engineering, procurement and construction of Process Industrial and Energy Production facilities. A representative list of some of our cogeneration and power generation projects is included at the end of this document.

Biomass Energy Systems – A vast array of biomass and related energy sources exist and are continuously being developed, each with distinctive challenges associated with their implementation due to their specific requirements and unique limitations. The ability to design systems utilizing one or a combination of these new technologies in an economically feasible manner requires a special blend of engineering disciplines working in concert. TGP's unique team of engineering professionals has been involved with a wide variety of alternative energy applications, allowing TGP to apply their expertise to each new permutation in this ever changing field.

Regardless of your projects' primary goal, be it waste minimization, internal thermal load matching, electrical power production for internal use and/or external sale, cogeneration/Combined Heat and Power (CHP), generation of environmental credits, or simply the desire to minimize your impact on the planet, TGP can provide the necessary engineering design and system component recommendations to meet your needs.

TGP and its personnel have been integral to the success of a wide variety of "bio-focused process designs", both large and small. Our design and engineering expertise includes participation in:

- Anaerobic Digesters
  - First Stage Digester Ponds as Bio-Gas Generators
    - Dairy Cattle
    - Hogs
    - Chickens
  - Large Scale Pre-Treatment Digesters
    - Industrial Waste Streams
    - Municipal Wastewater
- Bio-Fuels – Substitutes from Bio-Sources
  - Bio-Ethanol production from:
    - Corn
    - Sugar Cane
  - Biodiesel production from:
    - Corn
    - Algae
    - FOG (Fats Oil & Grease)
- Bio-Gas-to-Electricity Systems
  - Landfill Gas Collection
  - Microturbine Systems
- Biomass-to-Energy Systems
  - Dried Distillers Grain with Solubles (DDGS)
  - Manure
- Biomass/Waste Minimization Systems
  - Restaurants
  - Ships/Vessels
  - Grocers

In addition to these biomass focused systems, TGP can also provide designs which incorporate other systems to enhance the projects' overall goal of maximizing alternative energy use and minimizing the impact on the planet. Such systems include:

- Solar Powered Systems such as Data Telemetry (SCADA) systems
- Low and Small Head Hydrogenerators

Regardless of the size of your project, the engineering staff at TGP can bring your biomass projects to fruition.

Energy Conservation, and Facility / Utilities Assessment – Thompson Global Partners (TGP) energy conservation engineers perform design analyses and site surveys of industrial, manufacturing and municipal facilities identifying potential cost saving projects and developing detailed technical and economic analyses of customer's energy and facility costs. TGP provides energy evaluation Studies for a wide variety of projects and across all types of industries, including Refining, Petrochemical, Specialty Chemicals, Polymers, Pharmaceuticals, and Fertilizer Industries as well as to the Municipal, Service Industry and Government Sectors.

TGP's Energy Conservation services customers fall into one of two broad categories: Industrial and Municipal/Services. Each has unique operating conditions, equipment and requirements for energy, requiring distinctly different approaches and potential solutions. In both cases, TGP implements an overall project analyses which results in the development of a sound program the customer can utilize to reduce energy, operating and maintenance costs.

Industrial Customers

TGP specializes in the industrial client sector, particularly those in the Refining, Petrochemical, Specialty Chemicals, Polymers, and Fertilizer Industries. TGP's background as a process engineering organization means we don't limit our examination to the lighting and other peripheral energy user systems, but rather into the primary process units themselves. Analyses services can be as simple as electrical load audits to industrial plant steam balance Studies to process plant modeling for process optimizations and potential integration of co-generation units. TGP is capable of examining and modeling the process systems to determine potential energy optimization options that are integrated with the primary ongoing production facilities.

TGP's full team of Process (Chemical), Mechanical, Electrical, and Instrumentation and Controls Engineers can provide a complete analysis of any industrial facility that can include some or all of the following study components:

- Heat & Material Balances
- Steam Balance Studies
- Process Controls Analysis and Optimization
- Process Optimizations
- Cogeneration Options
- Energy Production for Sale

TGP's staff of engineering specialists can provide program packages from simple Studies to the development of Basic Engineering and Detailed Engineering Packages, as well as perform Construction Management for any conservation measures to be implemented.

Municipal / Service Organizations

The typical Municipal / Service Organization client to whom TGP provides Conservation and Facilities Assessment services falls into one of the following business types:

- Municipal
- Government
- Educational
- Higher Learning
- Healthcare
- Light Industrial
- Light Manufacturing
- Private

Through the implementation of Best Engineering Practices (BAT), new "Green Technology" and overall project analysis, a sound program is developed which the customer can implement to reduce energy, operating and maintenance costs. As part of TGP's services, it provides and utilizes the following capabilities and services:

- Dedicated Energy Engineers
- Energy Audits
- Energy Modeling
- Technology Evaluations
- Proposed Modifications to Facilities with their Estimated Costs and ROI
- Assistance in obtaining grants or rebates in the Energy Credit Area

TGP focuses on reducing energy, operational and maintenance (O&M) costs, modernization of old facilities, improving comfort and productivity, and striving to make facilities energy independent. TGP's approach includes on-site interviews, and facility assessment, which includes energy audits, service and billing audits, operational processes and procedures evaluations, and discussions regarding our Clients future business plans.

Evaluations of our Clients operations typically involve the development of Energy Models of the facility, developed using Department of Energy (DOE) software tools as well as custom, in-house analysis software. This model will permit TGP to perform a detailed analysis of the current operations and to devise energy conservation and facility optimization measures specifically tailored to our client's needs. This analysis includes an evaluation of the energy reductions and an estimate of the associated energy savings and facility O&M cost reductions.

All of the services described here are available as a comprehensive package or can be provided as individual components of a larger project in partnership with other vendors and project team members.

TGP Location: Tampa, Florida and the Bay Area

Thompson Global Partners, LLC Headquarters are located in beautiful Tampa, Florida, surrounded by the convenience of the best International Airport in the United States, high quality accommodations and our country's best recreational facilities. TGP's Tampa office is its primary engineering center and will serve as the headquarters for every major project it performs.

TGP has its offices located on the east side of Tampa. Situated along the bay and surrounded by natural beauty, downtown Tampa and the award-winning Tampa International Airport accommodate all of the business needs our clients. With more than 10,000 hotel rooms in the area, there are many quality properties for you to call "home" during your stay. New dining concepts are featured, from seafood to steaks and everything in between. Because many of Tampa's major highways and bridges pass through east Tampa, you're guaranteed easy access to and from all of your Tampa and Florida destinations. In addition, Tampa offers an abundance of facilities and schools for all faiths including Mosques, Islamic Centers and Islamic Schools (Pre-K, Grades K - 12) for those of the Muslim faith.

TGP Personnel Experience

TGP's personnel have a wealth of combined experience, exceeding an average of 25 years, including significant experience on projects in the Middle East. The tables on the following pages provide a summary of just some of the projects upon which TGP's personnel have participated. Each Table highlights the experience of TGP's personnel in a combination of technologies, client categories and geographical locations.

Table 1 TGP Personnel Project Experience/History in the Middle East		
Client	**Project Description / Scope of work**	**Location**
Chemanol	De-dusting System, Tube Chain Conveying System & Pre-Mixer Project	Al-Jubail, Kingdom of Saudi Arabia
SADAF (SABIC)	MTBE Liquid Waste Project – PDP and FEED Package for MTBE Plant through SPJ and SABIC E&PM	Al-Jubail, Kingdom of Saudi Arabia
Petrokemya (SABIC)	Sea Water Supply Improvement Study – Conduct Study and Investigation in cooperation with Petrokemya and the RC as one team (Integrated Project Management Team) and prepare Study Report for Utility Plant at Petrokemya	Al-Jubail, Kingdom of Saudi Arabia
Yansab (SABIC)	Benzene Oily Wastewater System – FEED Package for Utility Plant through SPJ and SABIC E&PM	Yanbu, Kingdom of Saudi Arabia
Ibn Zahr (SABIC)	OCT Feed Purifications Project – FEED Package for unit providing purification of feed streams to 250,000 MTA Polypropylene Plant through SPJ and SABIC E&PM	Al-Jubail, Kingdom of Saudi Arabia
SOCC (SABIC & Albemarle JV)	SOCC AA Project - Provided Project, Civil, Structural, Architectural, HVAC, Mechanical, and Piping Engineering, HSE and QA/QC services during preparation of PDP and Bidding Process for EPC contract at Fluor Home Office in Houston, TX, USA as well as during the execution of the EPC. Participated in the Detailed EP performed by Samsung Engineering Company Limited in Seoul, Korea and Construction by Samsung Saudi Arabia at Site as part of Client's Integrated Project Management Team. Activities also include Constructability Review, Value Engineering, QRA, HAZID, ENVID, HAZOP, etc. Services also included preparation, submission and receipt of RC Encroachment Permit to execute the Project activities outside Specialty Chemicals Battery Limits (i.e. within the RC Area/Corridors). This Project was completed on time and within budget.	Al-Jubail, Kingdom of Saudi Arabia

Table 1 TGP Personnel Project Experience/History in the Middle East		
Ibn Rushd (SABIC)	Participated as part of the IPMT, providing Engineering Services to prepare the following packages: • PDP, FEED & EPC LSTK Packages for New Effluent Treatment Plant Preparation and Submission of the following for RC approval: • Environmental Impact Assessment Report (EIA) including Environmental/Air Modeling • Permit Application Package (PAP) (previously known as Environmental Impact Report (EIR)) • Training of Ibn-Rushd Operations Staff and Operators for the preparation and implementation of PAP to satisfy RC RCER-2010 requirements	Yanbu, Kingdom of Saudi Arabia
Ibn Rushd (SABIC)	IR-II Expansion Project - Provided Project, Civil, Structural, Architectural, HVAC, Mechanical, Instrumentation & Control Systems and Piping Engineering, HSE and QA/QC services as part of Client's Integrated Project Management Team during the preparation of the PDP until the award of the following EPC Packages: • New AROMATIC Plant • DBN of PTA Plant. • New PE Plant. • Revamp of Utilities Plant. Provided Project Manager services over all concerned Discipline Engineers and Project Controls as part of the IPMT to execute the preparation of the PDP and FEED Packages for PTA DBN Project. PM were services performed at Samsung Engineering Company Limited (SECL) offices in Seoul, Korea. Activities also included Constructability Review, Value Engineering, QRA, HAZID, ENVID, and HAZOP. This Project was executed through the MEGA Project department of SABIC E&PM.	Yanbu, Kingdom of Saudi Arabia
Petrokemya (SABIC)	Utility Improvement Project (UIP) for the Petrokemya Complex – EPCm through SPJ, SABIC E&PM	Al-Jubail, Kingdom of Saudi Arabia

Table 1 **TGP Personnel Project Experience/History in the Middle East**		
Petrokemya (SABIC)	Study to increase the VCM Plant Production Capacity from existing 130% expansion position to 170% expanded operation.	Al-Jubail, Kingdom of Saudi Arabia
Petrokemya (SABIC)	Steam Balance Study - Conducted detailed Field Survey and Investigation of entire Petrokemya complex, consisting of 14 independent operating plants. Study involved all concerned Client Staff and Operators as part of the IPMT while carrying out the Study.	Al Jubail, Kingdom of Saudi Arabia
Petrokemya (SABIC)	VCM Refrigeration System for CFC Phase Out Project – Study & FEED for VCM Plant.	Al Jubail, Kingdom of Saudi Arabia
Samsung	No. 3 Butene-1 Plant – Provided Field Engineering Management and Construction Management services including Civil, Structure, Mechanical, Piping Engineering services, and HSE and QA/QC to Samsung during the execution of Field Engineering, Construction and Erection/Installation of No. 3 Butene-1 Project as part of Samsung's Integrated Project Management Team. Project execution was extremely complicated due to complete installation within an existing Plant Facility. This project was completed two and half months ahead of scheduled completion.	Al-Jubail, Kingdom of Saudi Arabia
Saudi Arabian Basic Industries Corp. (SABIC)	Develop Engineering Design Guidelines – Engineering Services to SABIC E&PM	Kingdom of Saudi Arabia

Table 1 TGP Personnel Project Experience/History in the Middle East		
Petrokemya (SABIC) (Previously Known as Ibn Hayyan)	PVC Plant Debottlenecking of Train A & B – Provided complete EPCm services. Services included Field Engineering Manager, Construction Manager, Contract Administrator, Civil, Structural, Architectural, HVAC, Mechanical, Piping, Electrical, Instrumentation/Control Systems Engineering services, and HSE and QA/QC during Construction and Erection/Installation of PVC DBN Project as part of Client's Integrated Project Management Team. This Project includes six (6) weeks of Plant Shutdown to upgrade/replace approximately twenty three (23) pieces of existing equipment and the modification of the complete Solid Handling System. This project was completed two (2) weeks ahead of Scheduled completion and resulted in more than a 15% of Project Cost savings.	Al Jubail, Kingdom of Saudi Arabia
Qatar Liquefied Gas Company Limited (Qatar Gas)	Waste Heat Recovery Project - Study	Qatar
Qatar Fuel Additives Co. Ltd. (QAFAC)	Methanol / Ammonia Expansion Project - FEED	Qatar
Qatar Petroleum (QP)	Licensor Selection Services for Grass Roots Petrochemical Complex – Study & BEP	Mesaieed, Qatar
Abu Dhabi Oil Refining Company (TAKREER)	Ruwais Sulfur Handling Terminal Expansion Project - Study	Abu Dhabi, U.A.E.
Abu Dhabi Oil Refining Company (TAKREER)	Green Diesel Project - FEED	Abu Dhabi, U.A.E.

TABLE 2 TGP Personnel Experience/History – Specialty Chemicals & Petrochemicals					
Owner and/or Client	**Project**	**Scope**	**Revamp**	**Location Of Job**	**Final Year**
Chemanol	De-dusting System, Tube Chain Conveying System & Pre-Mixer Project	EP	Yes	Al-Jubail, Kingdom of Saudi Arabia	Ongoing
SADAF (SABIC)	MTBE Liquid Waste Project – PDP and FEED Package for MTBE Plant	PDP, FEED	No	Al-Jubail, Kingdom of Saudi Arabia	Ongoing
Petrokemya (SABIC)	New Compressor Installation	EPCm	Yes	Al-Jubail, Kingdom of Saudi Arabia	2014
YANSAB (SABIC)	Benzene Oily Wastewater System – FEED Package for Utility Plant	FEED	Yes	Yanbu, Kingdom of Saudi Arabia	2014
Petrokemya	Sea Water Supply Improvement Study – Investigation and Study Report for Utility Plant.	IPMT / Study	Yes	Al-Jubail, Kingdom of Saudi Arabia	2014
Specialty Minerals Incorporated	Selma Expansion Project	E	Yes	Selma, AL	2013
Kinder Morgan	Ammonia Tank Outage and Piping Modifications	E	Yes	Tampa, FL	2013
Specialty Minerals Incorporated	Eastover Expansion Project	E	Yes	Eastover, NC	2013
Rhodia	Regen II Abatement Project - SO2 Scrubber Installation	Cm	Yes	Houston, TX	2013
GAF	Oil Heaters and Pumps Relocation	E	Yes	Tampa, FL	2013
Specialty Minerals Incorporated	Selma Gas Duct Tie-in	Cm	Yes	Selma, AL	2013
Yara	Vertical Ammonia Pump Replacement	E, Cm	Yes	Tampa, FL	2013
Specialty Minerals Incorporated	Eastover & Selma Plant Expansion EPC ITB Preparation	E	N / A	Tampa, FL	2013

TABLE 2 TGP Personnel Experience/History – Specialty Chemicals & Petrochemicals					
Owner and/or Client	**Project**	**Scope**	**Revamp**	**Location Of Job**	**Final Year**
CF Industries	Ammonia Cargo Line Relief Valve Size Verification	E	No	Tampa, FL	2013
Ibn Zahr (SABIC)	OCT Feed Purifications Project – FEED Package for unit providing purification of feed streams to 250,000 MTA Polypropylene plant.	FEED	No	Al-Jubail, Kingdom of Saudi Arabia	2013
CF Industries	Ammonia Tank Outage	E	Yes	Tampa, FL	2013
SOCC (SABIC & Albemarle JV)	AA Project – Provide Civil, HVAC, Mechanical, Structural, Architectural, HSE & QA/QC Consultancy Services for new Aluminum Alkyls plant during Bidding Process and EPC Phase.	IPMT	No	Al-Jubail, Kingdom of Saudi Arabia	2012
Petrokemya (SABIC)	Study to Increase the VCM Production Capacity from 130% existing to 170%.	Study, Consultant Services	Yes	Al-Jubail, Kingdom of Saudi Arabia	2010
Ibn Rushd (SABIC)	IR-II Expansion Project – Prepare PDP/FEED Packages for following Plants: •New AROMATIC Plant •DBN of PTA Plant •New PE Plant •Revamp of Utilities Plant Included preparation of FEED Package for New Effluent Treatment Plant.	IPMT	Yes	Yanbu, Kingdom of Saudi Arabia	2009

TABLE 2 TGP Personnel Experience/History – Specialty Chemicals & Petrochemicals					
Owner and/or Client	**Project**	**Scope**	**Revamp**	**Location Of Job**	**Final Year**
Ibn Rushd (SABIC)	IR-II Expansion Project – Preparation and Submission of: ▪ Environmental Impact Assessment Report (EIA) including Environmental Air modeling ▪ Permit Application Package (PAPs for RC Approval – *Previously known as Environmental Impact Report (EIR)*)	IPMT	Yes	Yanbu, Kingdom of Saudi Arabia	2009
DODSAL / TAKREER	Sulfur Loading Terminal Expansion	EP	No	Abu Dhabi U.A.E.	2009
Petrokemya (SABIC)	Upgrade of Utilities for Petrokemya Complex	EPCm	Yes	Jubail, Kingdom of Saudi Arabia	2009
Petrokemya (SABIC)	Steam Balance Study – Integrated Steam Balance Study, Model and Optimization of all 14 existing operating plant	IPMT, Study	No	Jubail, Kingdom of Saudi Arabia	2008
GE Silicones	PSM Remediation	ECm	Yes	Waterford, NY	2008
Haldor Topsoe	Sipchem Ammonia Plant FEED	FEED	No	Saudi Arabia	2008
Solvay Advanced Polymers	Radel Expansion	EPCm	Yes	USA	2007
Petrokemya (SABIC)	VCM CFC Phase Out	FEED, EP	Yes	Jubail, Kingdom of Saudi Arabia	2006
Solvay Solexis	Hylar Expansion Phase II	EPCM	Yes	Thorofare, NJ	2006
Arboris	Sterols Plant Phase 2	FEED, EPCM	No	Savannah, GA	2005
Daikin	Unidyne Expansion	EPCm	Yes	Decatur, AL	2005
Qatar Fuel Additives Company	Methanol / Ammonia	FEED	No	Qatar	2005

TABLE 2
TGP Personnel Experience/History – Specialty Chemicals & Petrochemicals

Owner and/or Client	Project	Scope	Revamp	Location Of Job	Final Year
Arboris	Sterols Plant	FEED, EPCm	No	Savannah, GA	2004
Daikin	C318 Project	S, EPCm	Yes	Decatur, AL	2004
Daikin	Fine Powders and Dispersion	FEED	Yes	Decatur, AL	2004
Daikin	HF Furnace Expansion (J2)	Study	Yes	Decatur, AL	2004
Daikin	Fine Powders Finishing Area Addition	Study	Yes	Decatur, AL	2004
Qatar Petroleum	Grassroots Petrochemical Complex	FEED	No	Mesaieed, Qatar	2004
Qatargas	Energy Recovery Project	FEED	Yes	Ras Laffan, Qatar	2004
Daikin	EFEP No. 8 Reactor / No. 4 Extruder Expansion Phase 2	EP	Yes	Decatur, AL	2003
Arizona Chemical	Resin Plant Expansion	FEED, EPCm	Yes	Savannah, GA	2002
Petrokemya (SABIC) (prev Ibn Hayyan)	PVC Debottlenecking	IPTM, EPCm	Yes	Jubail, Kingdom of Saudi Arabia	2002
Cytec	EPAM Tank Storage	EPCm	Yes	Mobile, AL	2001
GE Silicones	Propane Refrigeration	EP	Yes	Waterford, NY	2001
National Starch	Ethylene Storage Project	EPCm	Yes	Enoree, SC	2000

Legend:

BEP - Basic Engineering Package
Cm - Construction Management
E - Detailed Engineering
FEED - Front End Engineering & Design
P - Procurement
PDP - Process Design Package
PMC - Project Management Consulting
S - Study

TABLE 3 TGP Personnel Experience/History - Municipal & Government Projects				
Client	**Project**	**Location**	**Scope**	**Completion**
Pinellas County Wastewater & Water Treatment ICP & PHA	Water & Wastewater Treatment ICP & PHA	Pinellas County	E	2015
City of Tampa	Diesel Generator Sub-Part ZZZZ Compliance	Tampa, FL	E, Cm	2014
Sarasota County	Lift Station Mission Control Upgrade - Phase II	Sarasota, FL	E	2014
City of Tampa	HCAWTP PHA HAZOP Support Services	Tampa, FL	E	2012
Sarasota County	Carlton WTF Upgrade & Exp - Phase 3-Part 1 - Electrical Studies	Sarasota, FL	E	2012
Sarasota County	Central County Landfill Telemetry Package	Sarasota, FL	E	2012
City of Tampa	Miscellaneous Environmental Services at the HCAWTP	Tampa, FL	E	2012
Hillsborough County, FL	Falkenburg AWTP Sludge Dewatering Upgrades	Tampa, FL	E	2012
Sarasota County	Sarasota County Florida SCADA Master Plan	Sarasota, FL	E	2012
Hillsborough County, FL	Van Dyke Headworks Upgrade Project	Tampa, FL	E	2012
Sarasota County	Carlton WTF Upgrade and Expansion	Sarasota, FL	E	2010
Hillsborough County, FL Real Estate - Architect Services	Orient Road Jail Bi-Fuel Generators Conversion	Tampa, FL	E	2010
Hillsborough County, FL	Hills County Utility System Revenue Bonds Project	Tampa, FL	E	2010
Hillsborough County, FL	BSOC Electrical Eng. Support Services	Tampa, FL	E	2010
Sarasota County	CCWRF Phase 2 Improvements CMS	Sarasota, FL	E	2010
City of Tampa	HCAWTP Title V Air Permitting	Tampa, FL	E	2010

TABLE 3 TGP Personnel Experience/History - Municipal & Government Projects				
Client	**Project**	**Location**	**Scope**	**Completion**
Sarasota County	Pump Station No. 3 Improvements	Sarasota, FL	E	2010
Hillsborough County, FL	BSOC Back-Up Generator - CIP 70061	Tampa, FL	ECm	2010
Hillsborough County, FL	Falkenburg Road Jail / Animal Services - East Warehouse Facilities Studies	Tampa, FL	E	2010
Sarasota County	Pump Station 3 Piping Modifications	Sarasota, FL	ECm	2010
Tampa, FL	Clay Ave Pump Station Upgrade	Tampa, FL	E	2010
Sarasota County	VGWRP Wellfield Standby Generators	Sarasota FL	ECm	2010
Hillsborough County, FL	CHWTF Power Feeder	Tampa, FL	E	2010
Madeira Beach	Madeira Beach Power Station	Tampa, FL	ECm	2010
Hillsborough County Water Resource Services	Chelsea Pump Station Replacement	Tampa, FL	ECm	2010
Hillsborough County Water Resource Services	Mitchell Master, 82nd Street Master and Queen Palm Triplex Pump Stations	Tampa, FL	E	2010
Hazen and Sawyer	Falkenburg Plant Expansion 9 to 12 MGD and AWTP UV Disinfection	Tampa, FL	ECm	2009
Covanta of Hillsborough Inc	Falkenburg AWWTP Alternate Power Source, 13.8 KV Feeder	Tampa, FL	ECm	2008
Hillsborough County Water Resource Services	South County WTP Expansion 4.5 to 12.0 MGD	Tampa, FL	ECm	2010
Hillsborough County Water Resource Services	Lithia Auxiliary Power Improvements Project	Tampa, FL	EPCm	2010
Hillsborough County Water Resource Services	Falkenburg AWTP Alternate Power Supply	Tampa, FL	ECm	2008

TABLE 3 TGP Personnel Experience/History - Municipal & Government Projects				
Client	**Project**	**Location**	**Scope**	**Completion**
Hillsborough County Water Resource Services	Countywide Wastewater Pump Station Telemetry	Tampa, FL	Cm	2010
Hillsborough County Water Resource Services	Central Hillsborough Water Treatment Facility	Tampa, FL	ECm	2009
Hillsborough County Water Resource Services	WW-11 "What-If" Study	Tampa, FL	S	2010
Hillsborough County Water Resource Services	Blue Gill, Elm & South Nine Pump Station Replacement	Tampa, FL	Cm	2010
Hillsborough County Water Resource Services	6 Pump Station Design Services Project	Tampa, FL	ECm	2010
Pinellas County	Pinellas County South Cross Reclaim Valves	Pinellas County, FL	E	2009
Hillsborough County Water Resource Services	Lithia WTP Upgrade	Tampa, FL	ECm	2008
Hillsborough County Water Resource Services	Lithia WTP (T04073) Const Support (RM)	Tampa, FL	Cm	2008
Hillsborough County Water Resource Services	NW Class A Sludge (T04063) Const. Support (Lump Sum)	Tampa, FL	Cm	2008
Hillsborough County Water Resource Services	NW Class A Sludge (T04063) Const. Support (RM)	Tampa, FL	Cm	2008
Hillsborough County Water Resource Services	Northwest Class A Sludge Process Facility	Tampa, FL	ECm	2007
Hillsborough County Water Resource Services	Woodberry Master Pump Station Expansion	Tampa, FL	ECm	2007
Hillsborough County Water Resource Services	Lithia WTP Control Room Modifications	Tampa, FL	ECm	2007
Hillsborough County Water Resource Services	Generator Power (Back-up) Installation @ Commanche/ Dawnview and West Sugarmill	Tampa, FL	ECm	2007
Hillsborough County Water Resource Services	Sligh Ave, River Hills Pkwy, Nicklaus Circle PS	Tampa, FL	ECm	2007
Hillsborough County Water Resource Services	Sun City Golf Course Reclaim Water Meter Telemetry	Sun City, FL	E	2007

TABLE 3 TGP Personnel Experience/History - Municipal & Government Projects				
Client	**Project**	**Location**	**Scope**	**Completion**
Hillsborough County Water Resource Services	Generator Power (Back-up) Installation @ Riverhills/Dirt Road / Kings Avenue	Tampa, FL	ECm	2006
Hillsborough County Water Resource Services	Dale Mabry AWWTP Process & Telemetry Upgrade	Tampa, FL	ECm	2006
Hillsborough County Water Resource Services	Lithia Var. Frequency Drive & Fawn Ridge / Lake Park VFD Replacement	Tampa, FL	ECm	2006
Hillsborough County Water Resource Services	Valrico Hills Pump Station & Force Main Replacement	Valrico, FL	ECm	2006
Hillsborough County Water Resource Services	River Oaks Switch Gear Replacement	Tampa, FL	E	2006
Hillsborough County Water Resource Services	Misc. Engineering Services/Electrical Instrumentation	Tampa, FL	E	2005
Hillsborough County Water Resource Services	Schooner Way Pump Station Development	Tampa, FL	ECm	2005
Hillsborough County Water Resource Services	Tanglewood & Golfwood PS Replacements	Tampa, FL	ECm	2005
Hillsborough County Water Resource Services	Carrollwood RW PS	Tampa, FL	E	2004
Hillsborough County Water Resource Services	Falkenburg AWT Plant Expansion 6.0 to 9.0 MGD	Tampa, FL	Cm	2003
Hillsborough County Water Resource Services	Switch Gear Evaluation	Tampa, FL	E	2003
Hillsborough County Water Resource Services	Lake Park ATS Replacement	Tampa, FL	E	2003
Hillsborough County Water Resource Services	Breaker Evaluation	Tampa, FL	E	2003
Hillsborough County Water Resource Services	Valrico Reclaimed Water Pump Station	Valrico, FL	ECm	2003
Hillsborough County Water Resource Services	Low Pressure Sewer System Controls	Tampa, FL	E	2003

TABLE 3 TGP Personnel Experience/History - Municipal & Government Projects				
Client	**Project**	**Location**	**Scope**	**Completion**
Hillsborough County Water Resource Services	RW SCADA Support	Tampa, FL	E	2003
Hillsborough County Water Resource Services	Lithia WTP Studies	Tampa, FL	E	2002
Hillsborough County Water Resource Services	Hills. County Lake Park ATS Replacement	Tampa, FL	E	2002
Hillsborough County Water Resource Services	Fairfax Pump Station Rebuild	Tampa, FL	E	2002
Hillsborough County Water Resource Services	Miscellaneous Pump Stations	Tampa, FL	E	2002
Hillsborough County Water Resource Services	VFD Replacement	Tampa, FL	E	2002
Hillsborough County Water Resource Services	Dale Mabry SCADA	Tampa, FL	E	2002

Legend:

BEP	-	Basic Engineering Package
Cm	-	Construction Management
E	-	Detailed Engineering
FEED	-	Front End Engineering & Design
P	-	Procurement
PDP	-	Process Design Package
PMC	-	Project Management Consulting
S	-	Study

TABLE 4 TGP Personnel/History - Fertilizer Experience		
Client	**Project**	**Year**
CF Industries	Evaporator Piping System Revamp	2013
CF Industries	P&ID Upgrade – Mines	2013
CF Industries	P&ID Upgrade – Sulfuric Acid System	2013
Kinder Morgan	Ammonia Tank Outage and Piping Modifications	2013
Yara	Vertical Anhydrous Ammonia Pump Replacement	2013
CF Industries	Ammonia Cargo Line Relief Valve Size Verification	2013
CF Industries	Ammonia Tank Outage Project – Detailed Engineering of Modified Ammonia Piping Distribution & Truck & Railcar Load-out Systems	2012
CF Industries	Ammonia Tank Outage Project – Ammonia Piping Distribution & Load-out Study	2011
Mosaic	Wet Rock Feed System at Uncle Sam Plant - Detailed Engineering / Design	2011
Mosaic	Uncle Sam Plant - Technical Startup Assistance	2011
Fertinal	Sulfuric Acid Plant Capacity Upgrades	2011
Mosaic	Phosphate Rock Pilot Plant Studies	2011
Mosaic	Start Up Assistance - Dry Rock Loading	2011
Mosaic	Phosphate Rock Pilot Plant EPCm	2011
Mosaic	FSA Study	2011
Mosaic	Wet Rock Project (Electrical System Upgrade)	2011
Mosaic	Uncle Sam Conveyor Modification Project	2011
TECO	Ammonia Plant Feasibility & Market Study	2010
Mosaic	Dry Rock Feed System at Uncle Sam Plant – Preliminary and Detailed Engineering / Design and Startup Assistance	2010
CF Industries	Gyp Stack Extension Phase II	2010
International Atomic Energy Agency	Consultancy Meetings - Uranium Extraction from Gypsum	2010
Mosaic	Acid Equipment / Asset Management & Transfer	2010
Mosaic	Phosphate Rock Testing	2010
Mosaic	Temporary Rock Handling System Detailed Engineering	2010
CF Industries	Misc. Engineering & Construction Management Services	2009
CF Industries	Gyp Stack II Construction Management	2009
CF Industries	RCRA Project - P&ID Completion	2009
CF Industries	Sulfuric Acid Plant “B” Unit Upgrade Construction Mgt	2009
CF Industries	3rd Stage Gyp Booster Pump Installation Construction Mgt	2009

TABLE 4 TGP Personnel/History - Fertilizer Experience		
Client	**Project**	**Year**
PCS Phosphate	Evaporator / HFSA / Clarification Addition Advance Procurement	2008
Mosaic	Engineering Services Alliance - Support provided for project conceptualization, development, analysis, design, procurement and construction at Mosaic's Florida and Louisiana facilities	2008
JR Simplot	Fertilizer Expansion	2008
PCS Phosphate	STF-HFSA Silicon Tetra Fluoride & Fluosilicic Acid	2008
Mosaic	Utility Study	2007
PCS Phosphate	Ammonia Bullet Deluge Estimate	2007
PCS Phosphate	Evaporation / HFSA / Clarification Addition Advance Procurement	2007
KOCH Enid, OK	UREA GRANULATION Provided Detailed Engineering and Procurement in support of a Front-End Package to increase plant capacity form 1160TYD to 1550TYD of Granulated Urea production.	2007
Haldor Topsoe	Sipchem Ammonia Plant Off-sites	2007
Cargill	Relief Valve Follow-up Study	2006
Mosaic	Ammonia System Flare Study	2006
PCS Phosphate	STF 24 Expansion	2006
PCS Phosphate	HFSA Recovery	2006
Rhodia	Detail Engineering S02 Abatement (Acid Eng & Construction Process Technology)	2006
Mosaic	MOSAIC Energy Project Services	2006
Ma'aden	Magnesite Project - Phase II (EPCm)	2006
PCS Phosphate	STF 24 Expansion CM Services	2006
Mosaic	AFI (ammonia) Relief Valve Checks	2006
Rhodia	SO2 Abatement Baton Rouge (Acid Eng & Construction Process Technology)	2006
Mosaic	Phosphoric Acid Plant Process Reviews	2006
PCS Phosphate	Revised Capital Cost Estimate Evaporator Expansion Project	2006
Innophos	Concentrator Column Hot Air Inlet Piping Revamp	2006
PCS Phosphate	Phosphoric Acid Report - Consulting Services	2006
Agrium	FSA Impact Study	2006
Simplot	Phosphoric Acid Debottlenecking Study	2006

TABLE 4 TGP Personnel/History - Fertilizer Experience		
Client	**Project**	**Year**
Mosaic - Riverview, Bartow, New Wales. Green Bay, South Pierce Facilities	Mosaic Phosphoric Acid Plants - EPA Supplemental Information	2006
Rhodia	Amines Stripping Pipeline	2006
PCS Phosphate	PCS HFSA Recovery - HPD Evaporator	2006
Agrifos	Continuing Assistance	2005
Agrifos	Phosacid MGA Maximization Estimate	2005
Rhodia	Steam Turbine Option Study #8	2005
Rhodia	S02 Scrubber FEED (Acid Eng & Construction Process Technology)	2005
PCS Phosphate	MAP Plant Preliminary Estimate (Trinidad)	2005
Mosaic	New Wales Steam Balance	2005
Mosaic	Ammonia Bullet Relief Valves	2005
PCS Phosphate	Evaporator Re-Estimate	2005
PCS Phosphate	STF-2 Project	2005
CF Industries	FSA Recovery Study	2005
Mosaic	Riverview Relief Valves	2005
Rhodia - AWT	AWT Detailed Engineering	2005
Ma'aden	Ma'aden Magnesite Project - Phase I (FEED)	2005
PCS Phosphate	STF-HFSA Est.	2005
Mosaic	New Wales Steam System Study	2005
Mosaic	DAP Balance	2005
Qatar Fuel Additives Company	Methanol / Ammonia	2005
Rotem Amfert	P205 Reactor Antifoam System	2004
Innophos	SIC Sparger Design	2004
TAKREER	Sulphur Expansion Phase 3 - FEED Services Proposal	2004
Innophos	Hot Air Inlet Piping Design	2004
Rhodia	Steam Study (sulfuric acid plant)	2004
Cargill	HRS Move from T04142, T02657, T03060	2004
Agrifos	Cost Estimate	2004
Trademark Nitrogen	Pressure Vessel Inspections	2004
IMC (New Wales)	Tank Farm Scrubber Systems	2004
Peak Sulfur	Peak Tail Gas Scrubber (AE&C Process Technology)	2004
Cargill	Granulation Plant – Scrubber Study	2004

TABLE 4 TGP Personnel/History - Fertilizer Experience		
Client	**Project**	**Year**
Cargill	No. 4 DAP Chiller Expansion	2004
Trademark Nitrogen	Trademark Column Installation	2004
PCS Phosphate	Miscellaneous Projects	2004
IMC Phosphates	DAP 2 Scrubber	2004
PCS Phosphate	Joplin Feed Facility Upgrade	2004
Rhodia Nashville, TN	Concentrator Structural Analysis	2004
Rhodia	Existing Concentrator Structural Analysis	2004
PCS Phosphate	Evaporator Schedules & Cost Estimates	2004
Cargill	Bartow Vaporizer Study	2003
PCS Phosphates	Heat Exchanger/Bag Screw Conveyor	2003
Cargill	Consulting Services	2003
PCS Phosphates	Pond Water Supply Study	2003
Cargill	Greenbay Pond Water Study	2003
Cargill	Greenbay Evaporator	2003
Cargill	Ammonia RV	2003
Cargill	Sulfuric Acid Load-out	2003
Rhodia, Inc.	Sparger Development	2003
Air Products	Consulting Services	2003
S.F. Phosphates Ltd.	Entrainment Separator Study	2003
Rhodia	Engineering Services	2003
IMC	DAP Venturi Scrubber Calculations	2003
Cargill	Ammonia Bullet Relief Valves Piping Design Services	2003
Cargill	Ammonia Relief Valves	2003
Agrium Products, Inc.	MAP Dryer Study	2003
Cargill	Ammonia Supply Line Study	2003
Rhodia	Sic Liner Engineering	2003
Rhodia	Cracked Graphite Study	2003
Cargill	DAP 6 Evaluation	2003
Mosaic	Gypsum Stack Slurry System	2003
TAKREER	Ruwais Sulphur Handling Terminal Study	2003
Cargill	Riverview Cooling Pond Study	2003
Innophos	Hot Air Inlet Piping Engineering	2003
C.F. Industries	UCEGO Filter	2003

TABLE 4 TGP Personnel/History - Fertilizer Experience		
Client	**Project**	**Year**
Trademark Nitrogen Corp.	Vessel Inspections	2003
PCS Phosphates Aurora, NC	Defluorinated Phosphate Rock Plant	2002
Cargill Fertilizer, Inc.	Ammonia Relief Valve Systems	2002
Cargill Fertilizer, Inc.	#9 Sulfuric Acid Boiler Release	2002
Cargill Fertilizer, Inc.	Relief Valve Study	2002
Rhodia	Concentrator Modifications	2002
Cargill Fertilizer, Inc.	Greenbay Ammonia Control System Study	2002
PCS Phosphates	Crusher to Kiln Cyclone	2002
PCS Phosphates	Product Scalping Screen	2002
PCS Phosphates	Change Out Kiln Cooler ID Fan	2002
Cargill Fertilizer, Inc.	South Ammonia P&ID's	2002
Cargill Fertilizer, Inc.	DAP Ammonia Flare	2002
Cargill Fertilizer, Inc., Bartow	DAP 6 Ammonia Relief Valves	2002
PCS Phosphates	Recycle Transfer System	2002
PCS Phosphates	Product Air Classifier System	2002
Rhodia	Inspection & Expediting	2002
Rhodia	Procurement Services	2002
Cargill	Granulation Sparger Modifications	2002
PCS Phosphates	Kiln Cooler Hydraulic Pump	2002
Cargill Fertilizer, Inc.	Sulfur Unloading System	2001
Farmland Hydro, LP Green Bay, FL	Pond Siphon Systems	2001
IMC-Agrico	DAP Scrubbers	2001
Farmland Hydro, LP Green Bay, FL	DAP South Scrubber	2001
Cargill Fertilizer, Inc. Riverview, FL	Odor Stack Project	2001
Cargill Fertilizer, Inc. Bartow, FL	GTSP Air Chiller	2001
Cargill Fertilizer, Inc. Bartow, FL	No. 3 DAP Ammonia Sparger Design	2001
JR Simplot Co. Pocatello, ID	DICAL/GTSP Granulation Plant Upgrade	2001
SF Phosphates, Inc.	Phosphoric Acid Expansion	1998

TABLE 5 TGP Personnel VCM Experience			
Client	**Project**	**Location**	**Year**
Petrokemya (SABIC)	Study to Increase the VCM Production Capacity from 130% existing to 170%.	Al Jubail, Saudi Arabia	2010
Petrokemya (SABIC)	VCM CFC Phase Out	Al Jubail, Saudi Arabia	2006
Vulcan Chemicals	Lump Sum Proposal and Mitsui Oxychlorination technology transfer for EDC facility.	Geismar, LA	1999
The Dow Chemical Co.	EPC for $180MM addition of a new EDC furnace and upgrades to an existing furnace. Upgrades included new compressor, cooling towers, furnace tube materials, and auxiliary equipment.	Oyster Creek, TX	1997
Laporte Chemical	Process Design Package and coordination of technology licensing activities.	Laporte, TX	1987
Monomeros Vinilicos S.M. (MVSM)	Engineering, Procurement, Construction Management and Startup services for MVSM's 130,000 mtpy grass roots VCM plant (OxyVinyl (previously GEON) technology).	Bahia Blanca, Argentina	1986
Reliance Petrochemicals, Ltd	Basic Design Package for a Vinyl Chloride Monomer (VCM)/Polymer facility and its associated wastewater treatment, incineration and intermediate tankage.	India	1986
SABIC (Ibn Hayyan)	Basic Design Package for a 300,000 mpty VCM and a 200,000 mtpy PVC plant and the associated wastewater treatment, incineration, and intermediate tankage facilities (OxyVinyl (previously GEON) technology).	Saudi Arabia	1986
BF Goodrich	Modernization and refurbishment of 477,000 mtpy VCM facility (high temperature direct chlorination unit).	Calvert City, KY	1982
The Dow Chemical Co.	Engineering, Procurement and Construction of a new $130MM VCM plant producing 1.5MM ppy.	Plaquemine, LA	1977

TABLE 6 TGP Personnel/History - Energy Conservation & Facility / Utilities Assessment Experience		
Client	**Project Description / Scope of Work**	**Location**
Petrokemya	Steam Balance Study – An integrated steam balance study of all 14 plant operating units at the Jubail Industrial City complex was performed to optimize steam consumption within each unit, to determine potential excess steam capacity for sharing with other units and to optimize overall control of steam distribution and production to save energy.	Al Jubail, KSA
Qatargas	Steam Balance / System Study – A system-wide study was performed to determine the overall steam system users. The study then provided options to optimize the use, production and control of the various steam systems.	Ras Laffan, Qatar
Petrokemya	Utilities Improvement Project (UIP) – Advanced Study and FEED investigating the use, distribution and control all utilities for the entire Petrokemya complex. The goal included optimization and design of new utility equipment, their use and control, especially steam of three pressure levels, as well as the minimization of the size of a new boiler, and ensuring adequate other utilities for the existing complex and a planned major expansion.	Al Jubail, KSA
Rhodia	Energy / Steam Optimization Study – Study reviewed options for the facility to reduce their purchased energy (electricity and natural gas). Options investigated included producing their own steam for internal use and external sale, installation of a co-generation system, and various new installations of efficient equipment/systems.	Baton Rouge, LA
Carson Valley Inn	ECM's included lighting retrofit, installation of a "green" technology laundry system and a telecommunications system, and implementation of a billing audit procedure. Installation included a monitoring and savings verification system. The ECM's provided almost 200% of the identified and predicted savings.	Nevada
Caesar's, Tahoe	ECM's included lighting retrofits, boiler trim packages, Cogeneration units and ethanol filling stations. Recommendations were based on the results of an energy and facility study, personnel interviews and facility operations evaluations conducted over a period of 4 months.	Nevada

TABLE 6 TGP Personnel/History - Energy Conservation & Facility / Utilities Assessment Experience		
Client	**Project Description / Scope of Work**	**Location**
Washoe County School District	Based on a County-wide evaluation, newly installed equipment included a District-wide lighting retrofit, upgrades to Direct Digital Controls (DDC), water conservation devices, addition of variable frequency drives to rooftop, packaged HVAC units, and the complete replacement of inefficient rooftop, package HVAC units and inefficient boilers.	Nevada
Lake Tahoe School District	Performed an analysis of the school system's current infrastructure and energy use along with its future building needs to generate the school systems' highest return value options. Proposed ECM's included lighting system upgrades and retrofits, room occupancy sensors, HVAC system upgrades and DDC system modifications. Additional recommendations included a trash compaction system and a trash pick-up schedule with an on-demand pricing basis.	California
Charlotte County School District	Analysis of the school system resulted in Proposed ECM's that included lighting system upgrades and retrofits, HVAC system upgrades and DDC system modifications.	Florida
Franklin County School District	School system energy use evaluation in concert with an economic return resulted in several ECM's including lighting system modifications, room occupancy sensors, HVAC system upgrades and replacements, and control system upgrades.	Florida
Pinal County Government Facilities	An energy use-based evaluation of the government facilities including court houses, jail facilities, police stations and public buildings was performed. The ECM's proposed consisted primarily of lighting retrofits and HVAC system controls upgrades.	Arizona
City of Hialeah Government Facilities	An energy use-based evaluation of the government facilities including police and fire stations, and various public buildings was performed. Lighting retrofits, HVAC system equipment modifications and controls upgrades were the primary ECM's recommended.	Florida
Legend: ECM's Energy Conservation Measures		

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Tampa Electric Company	Polk 1 Secondary Fuel Conversion – Addition of steam feed to existing combustion turbine along with provision to convert from Syngas combustion to natural gas.	Mulberry , FL
Tampa Electric Company	Alternative Fuel and Syngas Spiking with Natural Gas – Installation of natural gas pipeline to combustion turbine for syngas spiking. Scope included gas coalescer, steam heater and pressure letdown station.	Mulberry , FL
Qatargas	Energy Recovery Project - FEED package including an investigation of waste heat recovery options in the LNG plant, fuel gas utilization options to maximize recovery of high Wobbe Index fuels for conversion to LNG.	Ras Laffan, Qatar
Philip Morris USA	Boiler MACT Project – Feasibility and financial studies of three, 30 year old coal fired boilers required to comply with new EPA MACT air emission rules.	Richmond, Virginia
Philip Morris USA	Power Boiler No.3 Control System Upgrade Project – Detailed design, procurement and construction management for replacement of existing Fisher Provox DCS system with Emerson DeltaV DCS system and upgrades to all field instrumentation.	Chester, VA
Petrokemya Arabian Petrochemical Company (SABIC)	Steam Balance Study characterizing 39 different steam producers including 9 major steam turbine drives, producing 2,090 tonnes per hour.	Kingdom of Saudi Arabia
Covanta Energy	Waste to Energy Project - Process Study for converting existing system to a closed loop system.	Tulsa, Oklahoma
Earth Renewal	Biomass-Electricity Co-generation Project – Gas-fired turbine used to produce electricity and the waste heat utilized to dry biomass. Excess electricity production sold and supplied to the grid.	Calgary, Canada
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Electrical Services - Modifications of remote controls and as-built drawings of KWH meter installation.	Florida, USA Turner and Anclote Plants

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Traveling Screen Spray Wash Water System Study	Florida, USA Anclote Plant
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Traveling Screen Spray Wash Water System Upgrade - Anclote Units 1 and 2	Florida, USA Anclote Plant
Florida Power, Progress Energy (Formerly Florida Power Corporation)	University of Florida Cogeneration Plant - Engineering, design, and construction supervision of a 40 MW, $43,000,000 facility utilizing university waste water as steam makeup water.	University of Florida, Gainesville, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	HRSG fuel line and duct burner port modifications.	University of Florida, Gainesville, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Bartow/Anclote Pipeline Leak Detection Study and Oil Pipeline Remediation – Implementation of an automated leak detection and isolation system for a 26 mile long, #6 oil pipe line.	Florida, USA Anclote Plant
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Debary Combustion Turbine Project - engineering, and design for the installation of 4 GE, frame 7 combustion turbines as well as the expansion of fuel truck unloading facility and remodeling of an abandoned railroad fuel unloading spur.	Debary, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Intercession City Combustion Turbines - Engineering and design of a $120,000,000 addition of 4 GE frame 7 combustion turbines. Also involved construction of new control room, controls upgrade of 6, existing Pratt & Whitney FT 4 twin packs, engineering for a 2 mile long reclaimed water pipeline.	Intercession City, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Re-powering Feasibility Study - Thermodynamic and financial study of 9 plant sites and 30 generators.	Florida, USA Multiple Power Plant Sites
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 2 Electrostatic Precipitator (EP) – Specification and replacement of the EP internals.	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Air Systems Improvement - Units 1 & 2 - Specification, design, procurement and construction support for the installation of air dryers and air receivers.	Crystal River, Florida

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 4 Condenser Retube	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	RTS Study - Oversaw re-start of 3 power generating units taken out of operation for 5 years.	Florida, USA Higgins Plant
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 2 – Turbine / Condenser Expansion Joint Replacement	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 2 Chemical Feed Station - Relocation and upgrade for injection of ammonia, hydrazine and phosphate to the condensate and boiler feed water systems.	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 4 Ash Slurry Pipe Replacement	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Units 1 & 2 Condenser Air Removal Pumps	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Units 1 & 2 Configuration Mgt	Crystal River, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Units 1, 2, & 3 Air Dryer/Receiver Addition	Bartow, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Unit 2 Boiler Feed Pump Motor Oil Pump Modification	Bartow, Florida
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Units 1 & 2 Diesel Generator Study	Florida, USA Anclote Plant
Florida Power, Progress Energy (Formerly Florida Power Corporation)	Units 4 & 5 Blowdown and Storm Water Drain Study	Crystal River, Florida

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Tampa Electric Company (TECO)	Polk Plant Brine Concentrator - Study, Engineering and Design for the replacement of heat exchangers and related equipment.	Polk County, Florida
Tampa Electric Company (TECO)	Bayside Waste Water Management Study Project – Support for an environmental impact review.	Tampa, Florida
Tampa Electric Company (TECO)	Big Bend Storm Water Conveyance Project - Verify SwimmPro storm water model of Big Bend Plant, re-establish input criteria for a 24 hour, 25-year storm and ultimately provide an engineering design for additional stormwater equipment that will eliminate possible environmental violations under these storm conditions.	Tampa, Florida
Tampa Electric Company (TECO)	Big Bend Cooling Water Study - Study examined possible improvements options to ensure continued Unit 4 cooling tower operation during hurricane conditions.	Tampa, Florida
Tampa Electric Company (TECO)	Condenser Tube and Tube Sheet Replacement	Tampa, Florida
Tampa Electric Company (TECO)	Boiler tube panel replacement (portions of the front and rear walls)	Tampa, Florida
Tampa Electric Company (TECO)	Burner Windbox Replacement	Tampa, Florida
Tampa Electric Company (TECO)	Condenser Cooling Water Filter	Tampa, Florida
Tampa Electric Company (TECO)	Unit 1 Boiler Drain Valves and Piping Replacement	Tampa, Florida
Tampa Electric Company (TECO)	Feedwater Heater	Tampa, Florida
Tampa Electric Company (TECO)	Unit 1 Cold Reheat Valve Replacement	Tampa, Florida
Tampa Electric Company (TECO)	Furnace Floor Refractory Replacement	Tampa, Florida
Seminole Electric Cooperative, Inc.	Fire Panel Replacement Project - Upgrade of Unit 1 & 2 existing fire protection panels.	Tampa, Florida
Seminole Electric Cooperative, Inc.	Boiler Feed Pump (BFP) Governor Controls	Palatka, Florida
Seminole Electric Cooperative, Inc.	Fire Protection Panels Replacement	Palatka, Florida

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Carolina Power & Light	Station Blackout Modifications (Brunswick Nuclear Power Plant)	Southport, North Carolina
Entergy Corporation	Waterford Power Plant Modifications	Waterford, NY
Florida Power & Light	Power Plant Modifications & Design Bases Reconstitution	Florida, USA St. Lucie and Turkey Point Power Plants
Florida Power & Light	Emergency Power System Modernization	
Florida Power & Light	Ft. Lauderdale Plant Revamp	
Waste Management, Inc.	Waste to Energy Facility – Documentation of the as-built configuration for a 2.2MW gas turbine and the methane gas piping.	Pompano Beach, Florida
Siemens-Westinghouse	High Pressure Turbine Component Test Rig Facility	Orlando, Florida
Waste Management	2.2 MW Steam Generator System Addition – New generator to produce electricity from waste heat contained in the exhaust of three, 3.0 MW Gas Turbines.	Ft. Lauderdale, Florida
Undisclosed Client	Integrated installation of GE LM 2500 turbine into existing ammonia plant.	Undisclosed Location
Undisclosed Client	Addition of three solar Combustion Gas Turbines (4 MW) complete with supplemental firing and water-wall boilers into Methyl Amines Facility.	Undisclosed Location
Undisclosed Client	HRSG Heat Recovery Study – Addition of 3.6 MW steam generator to existing power plant compressed gas HRSG	Florida, USA
Undisclosed Client	GTL (natural gas to diesel fuel) demonstration plant including steam generation utilizing heat from syngas reactor.	Oklahoma, USA

Table 7 TGP Personnel/History - Power, Heat Recovery & Cogeneration Experience		
Client	**Project Description / Scope of work**	**Location**
Undisclosed Client	2 x 5.0 MW Combustion Gas Turbines – Cogeneration energy recovery system installed within an existing gypsum wallboard facility.	Las Vegas, Nevada
Undisclosed Client	1.5 MW Gas Reciprocating Engine – Installation of a cogeneration energy recovery system into an existing gypsum wallboard facility.	Antioch, California
Undisclosed Client	350 KW Cogeneration Gas Reciprocating Engine Project	Barstow, California
Undisclosed Client	10x1.7 MW Heavy Fuel Oil-fired Reciprocating Engine – Installation of HFO reciprocating engine power plant at cement manufacturing facility.	Kingston, Jamaica
Undisclosed Client	Wood Burning Boiler - Installation of a $28,000,000 wood burning boiler produced 270,000 lb/hr steam feed to a turbine generator.	Staten Island, New York
Undisclosed Client	Installation of a 47 MW gas turbine generator into a pulp and paper mill.	Mehoopany, Pennsylvania
Undisclosed Client	Feasibility Study and engineering for a $6,000,000 wood combustor.	Baltimore, Maryland
Undisclosed Client	Engineering, design, and construction supervision for a $26,000,000 wood burning boiler and a new 14 MW steam turbine generator.	Long Beach, California
Undisclosed Client	Addition of new boiler to an existing chemicals plant including new oil storage and water treatment facilities.	Iowa City, Iowa
Tennessee Valley Authority	Gas cleaning system design for Kingston Plant and low NOx burner design for the John Sevier Plant.	Tennessee, USA

TABLE 8

TGP Personnel Experience/History – Refining & Gas Projects

Owner and/or Client	Project	Total Installed Cost (TIC)	Scope	Location Of Job	Final Experience Year
American Refining Group	New Distillation (Lube Oil) Column	$3.6MM	FEP	Bradford, PA	2010
ConocoPhillips	Misc. Refinery Upgrade Projects	$40MM	EPCm	Linden, NJ	On going
ConocoPhillips	Atmospheric Relief Valves FEL-1	Various	S	Linden, NJ	On going
American Refining Group	Lube Oil Hydrotreater	$37.3MM	S FEED	Bradford, PA	2009
TAKREER (ADNOC)	Unit 70 Hydrotreater Debottlenecking Project	$55MM	FEED	Abu Dhabi, UAE	2009
American Refining Group	Diesel & Lubes Hydrotreater Project	$18MM	FEED/ EP	Bradford, PA	2007
NAMCOR Namibia	Grassroots Refinery	$1500-4500MM	S	Namibia, Africa	2007
Petronas Penapsian	LIMA (PSR-3) DFS Grassroots Refinery Project	$7500MM	DFS ±30%	Malaysia	2007
TAKREER	Green Diesel Project	$1200MM	FEED	Abu Dhabi, UAE	2007
Petronas Penapsian	Crude Unit Feasibility Study		ES	Malaysia	2006
SABIC	Hydrotreater (Hydroskimming) Refinery	$200MM	BD	Saudi Arabia	2006
Valero	S02 Scrubber Project	$5.5MM	E	Texas, USA	2006
Qatar Fuel Additives Company	Methanol / Ammonia	$1100MM	FEED	Qatar	2005
Qatar Petroleum	Grassroots Petchem Complex	$2.300MM	FEED	Mesaieed, Qatar	2004
Qatargas	Energy Recovery Project	$40MM	FEED	Ras Lafffan, Qatar	2004
Syntroleum	GTL Demonstration Plant	$27.4MM	FEED, EPC	Port of Catoosa, OK	2003

TABLE 8

TGP Personnel Experience/History – Refining & Gas Projects

Owner and/or Client	Project	Total Installed Cost (TIC)	Scope	Location Of Job	Final Experience Year

Legend:

BD	-	Basis of Design
BEP	-	Basic Engineering Package
Cm	-	Construction Management
E	-	Engineering / Detailed Engineering
FEED	-	Front End Engineering & Design
P	-	Procurement
PMC	-	Project Management Consulting
S	-	Study
C	-	Consulting

TABLE 9 TGP Personnel Experience/History – Pharmaceuticals					
Owner and/or Client	**Project**	**Total Installed Cost (TIC)**	**Scope**	**Location of Job**	**Year Completed**
Merck	HPV Pure II Piping	N/A	E	Elkton, VA	2009
Merck (Valley Industrial Piping)	P3 Pure Piping Design	$9MM	E	Elkton, VA	2009
Merck (Valley Industrial Piping)	Bldg 86 WFI Loop	$1.5MM	E	Elkton, VA	2009
Merck	Montelukast Parallel Processing		E	Elkton, VA	2007
Merck	Factory 8 Glycol System Iso's		E	Elkton, VA	2007
Merck	Dorzolamide Pure PUW Loop		E	Elkton, VA	2006
Merck	Dorzolamide Step 7 & Vacumax		E	Elkton, VA	2006
Merck	Mother Liquor Recovery Glycol Scope		E	Elkton, VA	2006
Merck	TA115 Tank Cover		E	Elkton, VA	2006
Merck	F2 Dry Vac System & Heptane Sparging		E	Elkton, VA	2006
Merck	Dorzolamide – Crude Project	$12MM	E	Elkton, VA	2006
Schering - Plough	Construction Management Solids Dosing Supt.	$70MM	CM	Kenilworth, NJ	2005
Merck	F7 Design/Construction Assistance	(Incl. in 55 MM)	Cm	Elkton, VA	2005
Merck	HPV Fermentation Facility Utilities	$43MM	E	Elkton, VA	2005
Merck	Imipenem Design	$8MM	E	Elkton, VA	2005
GSK	Solids Dosing Equipment Selection	$1MM	E	Conshohocken, PA	2004
GSK	Waste Treatment Front End Design	$5MM	E	Conshohocken, PA	2004
GSK	Field Services, Solids Dosing, etc.	$25MM	E	Conshohocken, PA	2004
GSK	Project/Process Definitions	N/A	E	Conshohocken, PA	2004
Merck	Carbodopa Facility (Solids Dosing)	$5MM	E	Elkton, VA	2004

TABLE 9 TGP Personnel Experience/History – Pharmaceuticals					
Owner and/or Client	**Project**	**Total Installed Cost (TIC)**	**Scope**	**Location of Job**	**Year Completed**
Merck	Carr Centrifuge Front End - Detail Design	$1.5MM	S/E	Rahway, NJ	2004
Merck	Valid. Services Carr Centrifuging	N/A	V	Rahway, NJ	2004
Merck	Lab 80N-B34 Design Solids Dosing Suite	$.5MM	E	Rahway, NJ	2004
Merck	NaOH Up-Grade design Services	$1MM	E	Rahway, NJ	2004
Merck	New Hastelloy C Centrifuge Design and Installation	N/A	E	Rahway, NJ	2004
Merck	Building 60 Solids Handling Studies	N/A	S	Rahway, NJ	2004
Schering - Plough	USP Water - Isometrics, P&ID's and As-Builts Assist. Solids Dosing Facility	(Incl. in 70 MM)	E.	Kenilworth, NJ	2004
Schering - Plough	Compressed Air & USP Water Tie-Ins Solids Dosing Facility	N/A	E,V	Kenilworth, NJ	2004
Wyeth	Aseptic Vial Filling	$2MM	V	Pearl River, NY	2004
Merck	F7 Demo and Re Route	(Incl. in 55 MM)	E	Elkton, VA	2004
Merck	Temporary Pallet Wash Station	N/A	E	Elkton, VA	2004
Merck	Bulk Pharmaceuticals, Waste Incineration, & Other Misc. Infrastructure Projects	N/A	E	Ballydine, Ireland	2004
Merck	THF Boronic Acid Recovery	N/A	E	Somerset, NJ	2004
Merck	Trityl-Losartan Train ‘A’ Project	N/A	E	Somerset, NJ	2004
Pfizer Pharmaceuticals	B104 Automation Project	N/A	E	Puerto Rico	2003
Pfizer Pharmaceuticals	B108 Sertraline Enabling Project	N/A	E	Puerto Rico	2003
Alpharma	New Process Equip. Installation Support	$1MM	V	Elizabeth, NJ	2003
Integra Life Sciences	Solids Dosing/Utility P&ID Support	$2MM	S	NJ	2003

TABLE 9

TGP Personnel Experience/History – Pharmaceuticals

Owner and/or Client	Project	Total Installed Cost (TIC)	Scope	Location of Job	Year Completed
Integra Life Sciences	Lypophilization/ Optimization Studies	$1MM	S	NJ	2003
Schering - Plough	N.J.C.R. - Valid. Solids Dosing Facility	N/A	V	Kenilworth, NJ	2003
Wyeth	PMO Conversion	$2MM	V	Pearl River, NY	2003
Merck	F7 New RO Tank (Comprehensive Scope)	$55MM	E	Elkton, VA	2003
Merck	F7 New RO Tank	(Incl. in 55 MM)	E	Elkton, VA	2003
Merck	Anti-fungal Project	$55MM	FEED	Somerset, NJ	1999

Legend:

S	-	Study
BEP	-	Basic Engineering Package
E	-	Detailed Engineering
P	-	Procurement
Cm	-	Construction Management
V	-	Validation
C	-	Construction

TABLE 10 TGP Personnel/History – Batch & Semi-Continuous Processing Experience					
Owner and/or Client	**Project**	**Scope**	**Total Installed Cost (TIC)**	**Location of Job**	**Year**
Specialty Minerals Incorporated	Selma Expansion Project – Precipitated Calcium Carbonate	E	Confidential	Selma, AL	Ongoing
Specialty Minerals Incorporated	Eastover Expansion Project – Precipitated Calcium Carbonate	E	Confidential	Eastover, AL	Ongoing
Petrokemya (SABIC)	Study to Increase the VCM Production Capacity from 130% existing to 170%.	E	N / A	Al Jubail, Saudi Arabia	2010
Petrokemya (SABIC)	VCM CFC Phase Out	E	N / A	Al Jubail, Saudi Arabia	2006
Merck	Bulk Pharma Reactor Train Replacements Product Purification, Distillation & Crystallization	E	$2-10MM	VA, GA	2005
GE	AP Reactor C Interchanger Replacement	EP	N / A	Selkirk, NY	2004
GE	Line 2 Blending Bin Project	E	N / A	Selkirk, NY	2004
Ausimont / Solvay	Fluorocarbon Reactor Upgrades	E	$2.5-5.0MM	NJ	2004
GE	Silicones Reactor - External & Internal Heating & New DCS Controls	E	$2.5MM	NY	2004
Wellman	PET Reactor Train	E	$1MM	SC	2003
Syntroleum	Gas-to-Liquid (GTL) & Distillation Train Pilot Plant Reactor	E	$21MM	OK	2002
GE	Re-Distribution Capacity Expansion	E	N / A	Waterford, NY	2001

TABLE 10

TGP Personnel/History – Batch & Semi-Continuous Processing Experience

Owner and/or Client	Project	Scope	Total Installed Cost (TIC)	Location of Job	Year
Ibn Hayyan	PVC Reactor Train Modification	E	$30MM	Saudi Arabia	2001
GE	Methyl Chloride Weak Acid	EP	N / A	Waterford, NY	2000
GE	Propane Refrigeration	EP	N / A	Waterford, NY	2000
GE	Mono/Di Redistribution	EP	N / A	Waterford, NY	2000
Arizona Chemical	Jacketed Reactor & Downstream Solvent Recovery	E	$2MM	GA	2000
Sartomer	Jacketed Reactor Upgrade	E	N / A	NJ	2000
National Starch	Urethane Adhesive, Reactor & Feed Storage Upgrade	E	$4MM	SC	2000
GE	MeCl Refrigeration System Upgrades	EP	$5.3MM	Waterford, NY	2000
Shell Chemical	Polymer	E, Cm	$24MM	Lakeland, FL	1998
Merck	Antifungal	E	N / A	Stonewall, VA	1998
Shell	Epoxy Resin Reactor & Solvent Recovery	E	$17MM	FL	1998
Shell Chemical	Polymer	E	$100MM	Belpre, OH	1997
AKZO	Specialty Chemical	E	N / A	Augusta, GA	1997
Air Products	Methylamines	E	N / A	Pace, FL	1997
Air Products	Higher Amines	E	N / A	St. Gabriel, LA	1997
GE	MCS-2 Reactor Replacement	E	N / A	Waterford, NY	1996
Amoco	Polysulfone	E	N / A	GEEL	1996

TABLE 10 TGP Personnel/History – Batch & Semi-Continuous Processing Experience					
Owner and/or Client	**Project**	**Scope**	**Total Installed Cost (TIC)**	**Location of Job**	**Year**
Rhone-Poulenc	Insecticide	E	$7.5MM	Woodbine, GA	1995
GE	Polykettle #14 Revamp	E	N / A	Waterford, NY	1994
GE	Silicones Capacity Expansion	S	N / A	Waterford, NY	1994
GE	Silicone Grinding Expansion	SE	N / A	Waterford, NY	1994
GE	Draise Mixer Addition	SE	N / A	Waterford, NY	1994
GE	Building 30 Transfer Line	E	N / A	Waterford, NY	1994
GE	Siloxanes	E	N / A	Waterford, NY	1994
PCSA	PVC	E	$30MM	Colombia, OH	1993
Amoco	Paraxylene	E	$15MM	Decatur, AL	1993
GE	Polycarbonates	E	N / A	Mt. Vernon	1992
GE	Building 30 Batch Mixer Wet & Dry Feed	E	N / A	Waterford, NY	1991
Roche Carolina	Undisclosed	E	$450MM	Florence	1991
ICI	Klea 134a	E	$110MM	St. Gabriel, LA	1991
GE	ULTEM Polymer	E	N / A	Mt. Vernon, IN	1990
AlliedSignal	Nylon 6	E	N / A	Undisclosed	1990
Eli Lily	Undisclosed	E	$5MM	Puerto Rico	1990
GE	Noryl Polymer	E	N / A	Selkirk, NY	1989
Undisclosed	Aluminum Fluoride	E	$20MM	China	1989

TABLE 10 TGP Personnel/History – Batch & Semi-Continuous Processing Experience					
Owner and/or Client	**Project**	**Scope**	**Total Installed Cost (TIC)**	**Location of Job**	**Year**
Legend: BD - Basis of Design BEP - Basic Engineering Package Cm - Construction Management E - Engineering / Detailed Engineering FEED - Front End Engineering & Design P - Procurement PMC - Project Management Consulting S - Study C - Consulting					

TABLE 11

TGP Experience - Agricultural

Owner and/or Client	Project	Total Installed Cost (TIC)	Scope	Location of Job	Final Experience Year
Maple Leaf	Telkwa Facility	TBD	E, Cm	Telkwa, BC, Canada	Ongoing
Maple Leaf	Henderson Facility	TBD	E, Cm	Henderson, NV	Ongoing

Legend:

BD	-	Basis of Design
BEP	-	Basic Engineering Package
Cm	-	Construction Management
E	-	Detailed Engineering
FEED	-	Front End Engineering & Design
P	-	Procurement
PMC	-	Project Management Consulting
S	-	Study

TGP Registrations

TGP Registration in United States of America

Company Name:	**Thompson Global Partners, LLC**
State of Corp Reg.:	Florida
Company Type:	Florida Limited Liability Company
Company IRS Filing Status:	Partnership
Florida Co. Doc. Number:	L08000115054
FEI Number:	26-3892086
Company Founding Date:	12/18/2008
Company State Filing Date:	12/17/2008

TGP Registered Agent:

Within the State of Florida:	American Safety Council, Inc. 5125 Adanson St. Suite 500 Orlando, FL 32804 US
In all other States in U.S.:	Registered Agent Solutions, Inc. 515 Congress Avenue Suite 2300 Austin, TX 78701

TGP Registration in Kingdom of Saudi Arabia

Company Name:	**Thompson Global Partners, LLC**
Company Type:	Engineering & Consultancy Services
Registered with:	Saudi Basic Industries Corporation
SABIC Supplier/Vendor #:	606751

TGP Sponsor/Agent in Saudi Arabia:

Company Name:	**Hamed Al-Ghamdi Engineering Consultants** (Also known as **CONTEC**)
Company Type:	Engineering & Consultancy and Cathodic Protection
License No.:	1032
Registered with:	Saudi Basic Industries Corporation
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