



## ***PROJECT EXPERIENCE***

### **Section 5. Project Experience**

Organic Chemical Processing Projects  
Scrubber System Projects  
Off-Gas Handling & Combustion Projects  
Bulk Material Handling Projects  
Metallurgical Projects  
Energy Projects Projects  
Waste Compliance Projects  
Wastewater Reduction Projects  
Turn-Key Projects  
Paper Plant Projects  
OSHA/EPA AUDIT Projects

**PROJECT EXPERIENCE**

The following data summarizes the experience of PPC in this industry.

**ORGANIC CHEMICAL PROJECTS**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>	<b>REMARKS</b>
Amoco Performance Products, Inc. Alpharetta, GA	Carbon Resin Pilot Plant	Process design, piping design, and piping stress calculations.	
Cryotech, Inc. Kingsport, TN	Carbon Dioxide Purification and Liquefaction Plant  Eastman Kodak Chemical Kingsport, TN	Process evaluation, process design, pilot plant testing, cost estimate, equipment selection, detailed engineering, procurement and inspection.	
INDSPEC Petrolia, Pennsylvania	Recovery Building Sound Control Crude Tank Rehabilitation	Detailed Engineering	
Petrowax PA, Inc. Smethport, Pennsylvania	Crude Oil Wax Refinery Field modifications	Detail design and procurement.	
Energy International Rawling, Wyoming	Ammonia/Urea From Underground Coal Gasification Project	Process development. preliminary engineering, capital cost, third party process quality assurance.	
Rhone-Poulenc Oil City, Pennsylvania	Distillation Unit	Piping redesign.	
Callery Chemical Company Callery, Pennsylvania	KTB Facility Expansion	Structural and instrumentation design utilizing DCS system.	
United Refining Company Warren, Pennsylvania	Diesel Hydrotreater and Sulfur Recovery Unit	Process and project evaluation of bid documents and responses to evaluate for completeness, pricing and schedule.	Owner construction rep to monitor and direct construction approvals for work completed
United Refining Company Warren, Pennsylvania	General Engineering Projects	Supervision of all process department activities at the refinery.	

United Refining Company Warren, Pennsylvania	Sulfur recovery Project	Owner's construction supervision. Interfaces with engineer/constructor to monitor all field activities, including schedule, delivery of engineering and equipment, inspection of work and verification of change order requests.	
INDSPEC Petrolia, Pennsylvania	Resin Hold Tank/ Reactor Project	Detailed design and engineering.	
Callery Chemical Company Callery, Pennsylvania	Diborane, PYB and DMAB Project	Process Development, Detail Engineering, Procurement, Construction Management, 5MM Turnkey Project	
United Refining Company Warren, Pennsylvania	Reformer Unit Modifications Project	Detail design and procurement.	



**Sunoco**

Designed and built barge unloading system, Tank Farms, and truck and rail car loading and unloading systems.

PPC provided maintenance and all engineering for capital projects over a 5 year period.

**Ashland Chemical Company  
Neville Island, Pennsylvania**

Various Projects & Detailed engineering and definitive cost estimate.  
PPC provided maintenance and all engineering for capital projects over a 7 year period.

**PROJECT EXPERIENCE**

The following data summarizes the experience of PPC in this industry.

**Scrubber Systems**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Ferro Washington, PA	Scrubber Chimney system for fugitive emissions.	Process Design
Menominee Paper Co. Menominee, MI	Chlorine and chlorine dioxide wet scrubber system.	Process Design
INMETCO Ellwood City, PA	Solvent recovery system from resin plant.	Process Design
Callery Chemical Company Callery, PA	Process Vent scrubber and building vent scrubber.	Process Design
Molycorp Washington, PA	Fluorine Scrubber. Direct contact SO <sub>2</sub> /SO <sub>3</sub> scrubbers.	Process Design
PPG Industries Natrium, WV	Bleach scrubber	Process Design **
Saudi Pecten (Shell) Saudi Arabia	H <sub>2</sub> scrubber/cooler	Process Design **
Ferro Washington, PA	Baghouse	Process Design
Koppel Steel Ambridge, PA	Baghouse Modifications	Structural and instrumentation design

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**OFF-GAS HANDLING AND COMBUSTION PROJECTS**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Callery Chemical Company Callery, Pennsylvania	Thermal Oxidation. Thermal Oxidizer of organics in off-gas (100 SCFM)	Preliminary study.
Arco Chemical Company Monaca, Pennsylvania	Off-gas Processing. Styrene Recovery from off-gas	Preliminary study.
Arco Chemical Company Monaca, Pennsylvania	Combustion Process. Pentane Burn from off-gas	Engineering
Arco Chemical Company Monaca, Pennsylvania	Combustion Process. VOC's Incineration	Engineering
Energy International Rawlins, Wyoming	Combustion Process Flare System.	Detail engineering.
Zinc Corporation of America Monaca, Pennsylvania	Combustion Process. Sulfuric Acid Recovery Plant	Engineering, procurement, construction management.
Menominee Paper Company Menominee, Michigan	Power Boiler Bark Boiler	Preliminary study.
Advanced Recycling Systems Ambridge, Pennsylvania	Power Boiler. Refuse derived fuel boiler.	Preliminary study
U.S. Steel Dravosburg, PA	Reheat furnaces using coke oven gas.	Engineering, specs & start-up.
Pennzoil Rouseville, PA	Crude pre-heater using coke oven gas.	Engineering and specifications.

**OFF-GAS HANDLING AND COMBUSTION PROJECTS** *Continued*

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Molycorp Washington, PA	Combustion Process. Sulfur Burner	Engineering, procurement, construction management.
Duquesne Energy Pittsburgh, PA	Developed process, total design, procurement and construction of E Fuel plants for Tarentum, PA and for the Roanoke Rapids, NC facility.	All the work above was completed except construction.
Sunoco Neville Island, PA	Designed and built barge unloading system, Tank Farms, and truck and rail car loading and unloading systems.	PPC provided maintenance and all engineering for capital projects over a 5 year period.

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**BULK MATERIAL HANDLING**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
INDSPEC Chemical Co. Petrolia, Pennsylvania	PPC has designed and built truck loading & unloading system	Engineering, procurement, construction management.
Nalco Corporation Elwood City, PA	PPC has designed and built truck loading & unloading system	Engineering, procurement, construction management.
Cemex Wampum, PA	Continuous conveyor system.	Engineering, procurement, construction management.

PPC has designed and built barge unloading system, Tank Farms, and truck and rail car loading and unloading systems. Designed engineered continuous conveyor system and performed Maintenance to many clients.

- Changed 2 major transfer points and three conveyor load zones for 45° and AR steel to 70° round, ceramic lined, state of the art load zones. (Plant on our temp system for 3 months) (\$450 K).

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**METALLURGICAL PROJECTS**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>	<b>Remarks</b>
North American Höganäs Johnstown, PA	Stack up at furnace discharge	Design and Structural	
INMETCO Ellwood City, PA	Ni, CO, Rare Earth seperation from Bacteria.	Process Engineering and pilot plant appropriation	
INMETCO Ellwood City, PA	Cobalt Hydrometallurgical facility. Production facility for cobalt and copper	Engineering design, procurement and construction.	
North American Höganäs Johnstown, PA			
Zinc Corporation of Amer Monaca, Pennsylvania	High Pressure Projects	Preliminary engineering and cost study.	
INDSPEC Chemical Co. Petrolia, Pennsylvania	High Pressure Projects	Engineering design, procurement and construction.	
Neomet Corporation West Pittsburgh, Pennsylvania	Advanced Metal Processing Facility	Engineering, procurement and construction management.	
North American Höganäs Johnstown, PA	Gas fired furnace with longbed roaster	Engineering & design and construction management.	

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**ENERGY PROJECTS**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Stone Container Coshocton, Ohio	Single extraction 6,500 KW turbine generator.	Engineering, procurement, construction management.
Cemex Corporation Wampum, PA	Vexor Synthetic fuel system. Feed system, storage and fuel systems.	Study design, cost estimate, engineering, procurement, construction management.
Menominee Paper Company Menominee, Michigan	Coal/wood boiler, fuel storage and feed system.	Study design, cost estimate.
ARCO Chemical Company Monaca, Pa	Chiller unit for bulk polystyrene storage.	Design, cost estimate.
Callery Chemical Company Callery, Pennsylvania	Chiller units for +42F and -10 F contained systems	Engineering, procurement, construction.
Callery Chemical Company Callery, Pennsylvania	Liquid storage system for -210 F using liquid nitrogen and methane.	Engineering, procurement, construction.
Molycorp Washington, PA	Gas-fired boiler up-grade and refurbishing	Engineering, procurement, construction.
Waste to Energy Projects at Cement, glass and chemical facilities.	Projects to produce steam & electricity and stack gas heat.	Study, Cost Estimate and preliminary engineering.

**Duquesne Energy**

Tarentum, PA

Developed process, total design, procurement and construction of E Fuel plants for Tarentum, PA and for the Roanoke Rapids, NC facility.

All the work above was completed except construction.



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### **Environmental- Residual Waste Compliance Projects**

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**Zinc Corporation of America**  
**Monaca, PA**

presently Horsehead Corp



- High Purity Zinc Powder Plant
- Ore Dryer, Scrubber, Clarifier and Pump
- Tank Cleaning System
- 500 GPM Waste Water Treatment Plants Alterations to comply with new EPA regulations
- Installation of major piping systems and reclamation systems
- Construction management, planning and scheduling, managing design, procurement of equipment and sub-contractors.



*These projects can be discussed in more detail or in outline in our project qualifications.*

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**Wastewater Reduction Projects**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Double Eagle Steel Coating Company Dearborn, Michigan	Electro galvanizing Line	Computerized plant mass balance model, plant testing and process development for zinc recovery from wastewater.
Double Eagle Steel Coating Company Dearborn, Michigan	Automatic Electrolyte Solution Control	Process engineering for an automated system.
Bethlehem Steel Corporation Sparrows Point, Maryland	Hot Strip Mill Waste Water Treatment Plant	Preliminary engineering and cost estimate
LS2 Project LTV/Sumitomo JV Columbus, OHIO	Electro galvanizing Line	Process and mechanical equipment design and start-up manuals.
Zinc Corporation of Am. Monaca, PA	Process Water Treatment Upgrade	Study and Design Engineering
International Paper Company Erie, Pennsylvania	Process Plant Water Study Evaluation existing plant and make recommendation for Treatment Upgrade	Detail engineering
Meade Paper Company Chilicothe, Ohio	Wastewater Treatment Plant Upgrade	Study and Design Engineering
Shenango Pittsburgh, PA	Wastewater Treatment Plant	Engineering and cost estimate

*We would enjoy meeting with you to present our capabilities in greater detail and assure you of our interest in working with you on future projects.*

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### **TURN-KEY PROJECTS**

*Process Plants Corporation has performed numerous projects on a turnkey basis. Listed below is a representative listing of these projects.*

Kosmos Cement Co.  
Neville Island Plant  
Project: Slurry Line

PPC designed the slurry pipeline and developed all specifications for this outdoor line that would plug and freeze in the wintertime after a short power failure. The line was designed with flush connections, was insulated and electrically traced. PPC issued lump sum subcontracts for mechanical installation, electrical installation and insulation installation and managed the construction.

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Dravo Lime Co.  
Miami Fort Station  
Cincinnati, Ohio  
Project: SO<sub>2</sub> Spiking System

PPC designed an SO<sub>2</sub> spiking system for the Dravo Lime Co.'s lime scrubbing pilot plant that maintained constant concentration of SO<sub>2</sub> in the feedstream. This was required to run

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Energy International Co.  
Carbon County, Wyoming  
Project: Pilot Plant Data Acquisition System

Energy International's Underground Coal Gasification Pilot Plant needed a system view, receive and store data, additionally, they needed immediate access to some valves calculated from the data. PPC designed and procured the system on a fast-track basis, which used MMI and spreadsheet software.

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Duquesne Light Co.  
Cheswick Generation Station  
Project: Control Panel Replacement

PPC has performed numerous small maintenance projects for Duquesne Light, including control panel replacement, piping and in-line instrumentation modifications and lime makeup design revisions.

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**Paper Plant Projects**

**PAPER PLANT**

Client projects for:

Menominee Paper Co, Menominee, Michigan; Stone Container, Coshocton, Ohio & Florence, South Carolina and Scott Paper at Chester, PA facilities.

Projects varied with Wood/Coal Boilers, Coal Co-generation plants, Paper Machine and Evaporators, Chlorine Dioxide Scrubbers, Waste Recovery Boiler and Dust Collection Systems are examples.

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**OSHA/EPA AUDIT Projects**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
U.S. Steel Co. Clairton, PA	By-Products and Coke Oven-Gas Pipeline Areas	OSHA/EPA Audit
LTV Steel Company Hazelwood, PA	By-Products and Barge Facilities	OSHA/EPA Audit
Dupont Company Parkersburg, WV	TFE Production Unit	OSHA/EPA Audit
American Refining Group Indianola, PA	Oil Refinery	Field Verification and P&ID Update
American Refining Group Indianola, PA	Fire Water Line	P&I Diagram and Insurance- Flow Rate Calculation
BP Oil Company Lima, OH	Liquefied Petroleum Gases Plant	OSHA/EPA Audit

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**CONTROL SYSTEM PROJECTS**

<b>CLIENT</b>	<b>PROJECT</b>	<b>Responsibility</b>
Gulf Oil Company Cincinnati Refinery Cincinnati, OH	PLC Allen-Bradley Model 1	Specified PLC and programmed
Gulf Oil Company Port Arthur Refinery Port Arthur, TX	PLC Allen-Bradley Model 2	Specified PLC and programmed
U.S. Steel Clairton Works Clairton, PA	PLC Off-gas handling	Specified PLC and programmed
Shell Oil Company Deer Park, TX	PLC Allen-Bradley PLC-3	Specified PLC and programmed
Shell Oil Company Belpre, OH	PLC Modicon 540	Programmed
Timken Steel Canton, OH	Ultra sonic system with SAAB computers	Programmed interface system with Modicon 540 PLC
Timken Steel Company Canton, OH Faircrest Mill	PLC Modicon 540	Billet inspection/conditioning Programmed
Daily Juice Company Pittsburgh, PA	PLC TI-5 Bottling and mixing lines	Programmed inventory control system

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### AMD PROJECTS

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AMD ST. MICHAEL AMD PILOT PLANT

DEP RECLAMATION OF ABANDONED MINE LAND AMR-05

DEP RECLAIM MINE LAND/METAL RECOVERY AMR-04

MHB PHILLIPS MINE SITE

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#### MHB Development



PPC and the work for MHB was part of a case test study with the University of Pittsburgh. PPC process was central to the work and presentations by Dr Neufeld at Mine water treatment technology conferences.



Accelerated Ferrous Oxidation Accelerated Ferrous Oxidation with a Multiple Orifice Spray with a Multiple Orifice Spray Reactor

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PPC provided engineering, technical and field support to MHB, Inc. commercializing the Turbojett System ®.

- An active treatment of mine discharge - AMD situations.
- A patented system to Mix, Aerate and Neutralize in "Moments - not Months".
- While installed, reduces cost, small footprint with NO system shutdown time.

**Turbojett** ®

MIG Group a Division of MHB, Inc.



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### **Construction Management Projects**

*This is accomplished through the implementation of formal project specific constructability plans which provide the framework for conceptual and detailed design reviews from start to design completion. We then implement the Construction Execution Plan taking the completed design package and performing all activities required to solicit construction bids, select the contractors, construct the production facility and pre-commission the facility for start-up*

*Most of PPC's business has been repeat business; our mission statement, our philosophy is to give the client what they want at a reasonable price.*

**Zinc Corporation of America**  
Monaca, PA

- Four Sulfuric Acid Storage Tanks 450,000 gallons, installation included piping and anodic protection systems
- Design, detail engineering, estimating, planning and scheduling, procurement and construction management.

**Zinc Corporation of America**  
Monaca, PA

- Environmental-Residual Waste Compliance Projects
- High Purity Zinc Powder Plant
- Ore Dryer, Scrubber Clarifier and Pump
- Tank Cleaning System
- 500 GPM Waste Water Treatment Plant, Alterations to comply with new EPA regulations
- Installation of major piping systems and reclamation systems
- Construction management, planning and scheduling, managing design, procurement of equipment and subcontractors.

We are a full service group providing process development, engineering, procurement, construction and maintenance management expertise for the process industry. We provide single point responsibility in performing engineering, procurement, and construction (EPC) for projects.

## PROJECT EXPERIENCE

The following data summarizes the experience of PPC in this industry.

### Construction Management Projects

CLIENT	PROJECT	Responsibility
Molycorp Washington, PA	Sulfuric Acid Plant Re-commissioning 125 TPD	Process evaluation inspection, design, instrumentation, procurement, subcontractor bid packages, construction management and start up.
Fifty-One Systems, Inc. Rachel, WV	Coal Washing & Reclamation Plant	Process design, layout, equipment selection, cost estimate, detail design, procurement and construction.
United Refining Company Warren, PA	Sulfur Recovery Project	Owners construction supervision. Interfaced with engineer/constructor to monitor all field activities, including schedule, delivery of engineering and equipment, inspection of work and verification of change order requests.
Callery Chemical Company Callery, PA	Diborane and Diborane Products Facility	Process, detail engineering, procurement, construction management and start up of a grass roots facility.
Mannesmann DeMag Corporation Warren Consolidated Industries Warren, OH	Continuous Slab Caster Supervised 700,000 man-hours in 8-month period.	Construction Management
Zinc Corporation of America Monaca, PA	Sulfuric Acid Plant 300 TPD, Zinc Oxide Plant. One-month maintenance turnaround projects	Design, detail engineering, estimating, planning and scheduling, procurement and construction management.



*As the engineering design team we provide constructability through detailed design, ensuring design deliverables that are very constructable in the field.*