

Introduction: The Power of Shaw

The Shaw Group Inc. is a leading global provider of engineering, construction, technology, fabrication, remediation and support services for clients in the energy, chemicals, environmental, infrastructure and emergency response industries. A Fortune 500 company with fiscal year 2010 annual revenues of \$7 billion, Shaw has approximately 27,000 employees around the world and is the power sector industry leader according to Engineering News-Record's list of Top 500 Design Firms.



Ranked No. 1 in Power by ENR 3 Years in a Row!



Figure 1 – Shaw Worldwide Locations



Figure 2 – Shaw Corporate Organization

A Full-Service Organization

Shaw provides a full range of services in the following business areas:

Shaw Power

Fossil Power

Fossil-Fuel Generating Plants (coal, gas, oil, etc.) *New Generation*
Retrofit and Rehabilitation Services *Owner's Engineer Services*
Geothermal, Biomass, and Solar-Thermal Renewable
Energy Options

Nuclear Power

New Generation – AP1000 *Plant Restarts*
Power Upgrades *Engineering Services*



Plant Services

Maintenance Support
QA/QC Technical Support
Engineering Technical Support
Planning Technical Support
PM/PDM Technical Support
Contract Maintenance

Construction

Project and Construction Management
Constructability Reviews
Civil and Concrete Work
Piping Systems Erection
Structural Steel Erection
Mechanical/Equipment
Electrical and Instrumentation
Painting, Scaffolding, and Insulation
ASME Code Work
Modular Fabrication and Assembly

Consulting Services

General Management Consulting
Strategic Planning
Integrated Resource Planning
System and Capacity Planning
Rate and Regulatory Services
Feasibility Evaluations

Appraisal and Valuation
Risk Management
Management Information Systems
Project Review Services
Forecasting Services

Shaw Environmental & Infrastructure, Inc.

*Air Quality Management and Permitting
Multi-media Permitting and Compliance
Natural and Cultural Resource Investigation
Solid Waste Management, Engineering and
Audit, Site Assessment and Environmental Liability
Management*

*Remediation and Brownfield Development
Water and Wastewater Treatment, 316a, 316b &
Resource Management
Power Plant and Transmission Siting and Evaluation
Renewable Energy*

Fabrication and Manufacturing

*Pipe Fabrication
Structural steel fabrication
Modules/skid fabrication and assembly*

*Engineered hangers and supports
Tank and vessel fabrication*



Shaw Fossil Power

Shaw’s 100-year foundation for developing and implementing long-term engineering and environmental solutions has cultivated a performance-based culture focused on safety and client satisfaction. Shaw emerged for the third year in a row as No. 1 in Power on Engineering News-Record (ENR) magazine’s first set of 2010 company rankings, the Top 500 Design Firms. The company was also ranked in several sub-categories, claiming the *top spot in Fossil Fuel*.

Shaw Power’s Fossil Division is a leading global provider of full-service, high-quality, engineer / procure/ construct services to the power industry. In addition to fossil power, Shaw provides other clean energy solutions such as geothermal, solar, and biomass. We deliver successful projects to our clients through our broad experience and comprehensive range of services—all while maintaining one of the best safety records in the industry.

The Shaw Group’s vertical integration provides the unique ability to supply piping, steel, ductwork, and component modularization from internal companies. This vertical integration is in harmony with our engineer/procure/construct capabilities, resulting in superior, value-added service for our clients.

Our mission is to be the company of choice for our clients, employees, and suppliers in the services and opportunities we provide, while enhancing value to our shareholders and communities. We strive to be the premier engineer/procure/constructor for power generation (coal, gas, and alternative energy), whether for studies, conceptual design, new construction, or existing plant upgrades. Our mission will always be accomplished safely and in a manner that rewards our valued clients, shareholders, and employees.

**SHAW POWER
MISSION STATEMENT**

To be the company of choice for our clients, employees, and suppliers in the services and opportunities we provide, while enhancing value to our shareholders and communities.

GUIDING PRINCIPLES

Safety Comes First. A relentless commitment to safety while looking out for the safety of all our teammates.

Integrity. Ethically and honestly doing what we say we will do.

Win-Win Relationships. Our investors realize a superior return on their investment over time and our customers, suppliers, and communities benefit from our business relationships.

Valuing the Individual. Fostering an atmosphere of openness, sharing, trust, teamwork, and involvement while valuing the contribution of every employee.

Initiative. Being personally accountable and having the courage, creativity, and discipline to lead change and shape the future.

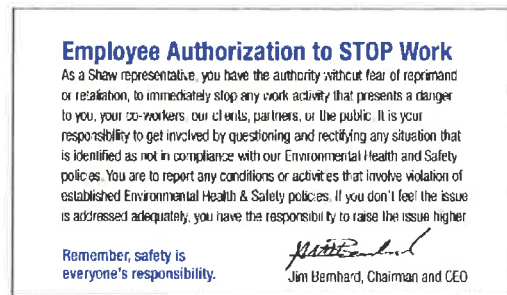
Shaw a world of Solutions™

Safety Protocol

Shaw is firmly committed to operating all of our facilities and projects in a safe, efficient manner and in compliance with all applicable safety, health, and environmental laws, rules, and regulations. Through the adoption of these sustainable practices, we are committed to securing a high quality of life for current and future generations, restoring and sustaining a healthy environment, and increasing value for our customers, shareholders, and business partners.

We uphold the highest Environmental, Health, and Safety (EH&S) standards, and promote a proactive safety culture and a heightened awareness of our surroundings both on and off the job. We focus on proactively identifying potential risks and hazards in order to provide an injury-free work environment where people, equipment, and the environment are not placed at unreasonable threat of injury or damage, and we continually strive to be responsible citizens in every community in which we operate.

At Shaw, our commitment to Environmental, Health, and Safety goes far beyond complying with prescribed standards. We strive to set the standard for Environmental, Health, and Safety excellence. Every Shaw employee is empowered to set a standard for safety. Our “STOP WORK” card program authorizes every employee to stop a work activity that presents a danger to themselves, other employees, or the public.



Shaw STOP WORK Authorization Badge

Shaw Environmental Health and Safety Policy and Programs

Shaw understands a safe project is paramount to a successful project. Shaw implements our standard corporate safety program, in concert with owner requirements, as a basis for developing its safety plans. Shaw has set the standard of safety excellence that is well respected and recognized by numerous safety awards throughout the industry. Shaw implements our safety practices through the Shaw Environmental, Health & Safety (EH&S) Program. This is the same program currently being implemented at numerous construction sites that Shaw is executing throughout the world. A complete copy of the Shaw EH&S Policies and Procedures Manual is available upon request.



Targeting Zero Program

Shaw created the Targeting Zero Program to further our efforts in establishing Shaw as a leader in setting and achieving premier Environmental, Health, and Safety performance standards and objectives. The program is focused on targeting zero—achieving ZERO Environmental, Health, and Safety incidents. This program will further our ability to perform in a manner that minimizes health and safety risks to our clients, our employees, the general public, and the environment. Shaw’s Targeting Zero program is designed to support our mission of zero injuries, illnesses, and environmental incidents. This program will further our vision for Shaw to be recognized and respected by its employees, the industry and the public as leaders in Environmental, Health and Safety Excellence. Our mission is to be the industry leader in environmental health and safety performance. We will accomplish this through continuous improvement to prevent or reduce the potential risk of harm to personnel, property and the environment.

Shaw Environmental & Infrastructure, Inc.

Environmental engineering and sciences are provided through Shaw Environmental & Infrastructure, Inc. (Shaw E&I). Environmental personnel have conducted many site selection, characterization, evaluation, and monitoring studies; and prepared conceptual and detailed engineering designs for air emission, noise controls, and water and wastewater treatment systems. They have also prepared complete environmental permit applications, compliance documents, and impact assessments for hundreds of projects; and completed discipline-specific or multi-disciplinary projects throughout the United States and abroad.

Shaw E&I provides environmental services in the areas of site assessment, ecological monitoring and impact assessment, permitting, water supply studies and water treatment engineering, wastewater treatment engineering, solid and hazardous waste disposal and incineration. They have provided air quality emissions monitoring and modeling, noise control engineering, air pollution control equipment engineering, geohydrology and geotechnical engineering, information management systems, environmental auditing, and risk assessment and management.

Air Quality and Meteorology

Our Air Quality and Meteorology staff has extensive experience in conducting air quality and climatological assessments related to the planning of new or modified power facilities. The staff provides the following capabilities:

- Design and management of ambient air quality and meteorological monitoring networks
- Technical expertise for Good Engineering Practice Stack Height (GEP), Reasonably Available Control Technology (RACT), Lowest Achievable Emission Rate (LAER), and Best Available Control Technology (BACT)
- Impact analysis using EPA and proprietary atmospheric dispersion models on our computer
- Preparation of new source review and prevention of significant deterioration applications for power facilities

Hydrology and Hydrothermal Analysis

Our Hydrology and Hydrothermal Analysis staff consists of engineers, hydrologists, and analysts with training and experience in civil and hydraulic engineering, hydrology, oceanography, mathematics, and computer modeling. They provide technical assessments of all major hydrologic and hydrothermal parameters and are experienced in the areas of surface and groundwater hydrology, assessment of inland and coastal flooding, design of water conveyance structures, design of shoreline structures, flow simulation modeling of natural water bodies, dispersion analysis of water body constituents, and design and analysis of once-through and closed-cycle cooling systems.

Water and Waste Treatment

Shaw E&I's Water and Waste Treatment staff consists of engineering and scientific specialists with backgrounds in chemical, civil, sanitary, mechanical, and environmental engineering as well as chemistry and aquatic biology. They have extensive experience in and are responsible for the following activities: water quality field studies; water and waste treatability studies; pilot and demonstration plant evaluations; soil erosion and sediment control plans; water reuse evaluations; conceptual and detailed design of water and waste treatment facilities; and specification, evaluation, and procurement of water and waste treatment equipment.

Ecology

The Ecology staff includes specialists with extensive training and experience in all aspects of marine, freshwater, and terrestrial biology. These capabilities are supplemented by ecologists with experience in applied statistics, computer application, and biological modeling.

The Ecology staff participates in the following activities: ecological characterizations and impact studies for marine, freshwater, and terrestrial systems; computerized ecological data storage, reduction, and analysis of impact; site restoration planning; field and laboratory studies of fish diversion methods and water intake designs; biofouling control and toxicity assessments; and mine planning and reclamation studies.

Socioeconomics and Land Planning

Our Socioeconomic and Land Planning staff is responsible for resource and reclamation planning, land use assessments, visual and aesthetics analyses, demographic studies, transportation analyses, work force assessments, and economic forecasting and cost/benefit assessments.

Noise and Vibration Control

The Noise and Vibration Control staff includes engineers and scientists trained in mechanical and electrical engineering and physics. Members of this group conduct preoperational and operational noise surveys, and incorporate noise control engineering into the design of new facilities. The Noise and Vibration Control staff conducts the following types of studies: ambient and in-plant surveys, acoustic design criteria development, equipment specification and design, sound level modeling studies, acoustic impact assessment, and development of noise control recommendations.

Environmental Health and Safety



Environmental health and safety analyses are performed by staff members with expertise in public health and biostatistics. They are responsible for the assessment of risks posed by conventional and emerging technologies, and they have experience in the areas of exposure pathways identification, populations-at-risk identification, severity of exposure characterization, and risk analyses.

Mathematical Modeling

Shaw E&I's engineers and scientists employ a wide number of models and computer programs in areas including water quality and air quality assessment. Engineers analyze the system functions and determine the performance requirements for apparatus included in the system. With these functional criteria in mind, they develop an outline of the equipment characteristics necessary to provide the desired performance. Sources of equipment supply, as well as commercial availability, estimated cost and schedule impact of special features are investigated. The need for spare parts or a complete equipment spare is evaluated; equipment specifications are then prepared.

Geotechnical Engineering

Our Geotechnical staff includes soil and rock mechanics engineers, foundation engineers, hydrologists, groundwater hydrologists, geologists, geophysicists, and engineering geologists who are highly qualified and competent in executing all phases of geotechnical work on a project. This work includes initial investigations and exploration through design and construction or development.

The geotechnical services that we provide vary from consultations to all-inclusive professional services depending on project needs and the client's overall development plan. Geotechnical services that we provide typically include the following:

- Design, installation, and monitoring of instrumentation
- Drilling, sampling, and laboratory testing of rock and soil
- In-situ testing of rock and soil materials
- Geophysical surveys and remote sensing investigations
- Hazardous waste investigations
- Remediation design and oversight of hazardous waste site investigations and remediation
- Design of shallow and deep foundations
- Development of design criteria for bulkheads, foundations, tunnels and underground structures, dams, embankments, and retaining structures
- Design of underground structure reinforcement and support
- Hydrologic investigations, including groundwater modeling and monitoring programs, contaminant dispersion studies, and dewatering and drainage system design
- Design and analysis of existing rock and soil slopes
- Development of construction procedures and specifications for all geotechnical work, including excavation dredging, rock and soil support, and placement of engineered fill
- Technical assistance and liaison during construction and resident inspection for tunnels and underground structures and surface excavations

Shaw Fabrication and Manufacturing

Shaw is the largest supplier of fabricated piping systems in the U.S. and a leading provider of piping solutions through industrial pipe fabrication and manufacturing and distribution outlets located around the world. As a major provider of piping technology, particularly in induction bending, we develop and use proprietary computer applications for design interface, material control, production scheduling, and fabrication management.

Our commitment to the latest technology ensures enhanced performance and reliability in meeting project execution requirements. Shaw's ability to provide pipe fabrication with pipe bending and structural steel fabrication now combined with the option for module fabrication and assembly enhances our overall capabilities to provide a complete solutions package that meets the needs of our customers.

The Company holds ASME R and U Certificates of Authorization, certifying it to repair ASME pressure vessels at the facility or in the field. Our capabilities include process units, pressure vessels ranging from 4-inch-thick walls to 16-foot OD, separators, skimmers, and scrubbers.

Pipe Fabrication

Our domestic pipe fabrication facilities, each equipped with the latest manufacturing technology and systems are capable of producing an aggregate of 25,000 pipe spools per month. Shaw has invested heavily in state-of-the-art equipment including automated welding and bending machinery that speeds the fabrication process with greater accuracy and quality. Utilizing our extensive capacity, we are able to meet the aggressive completion schedules of today's complex projects throughout the world by splitting the fabrication process among our domestic and international shops.

Induction and Cold Bending

Shaw is the recognized world leader in fabricated piping systems particularly in induction and cold bending technology. With our subsidiary Cojafex, B.V. in the Netherlands, we own the technology for certain induction bending machines, and Shaw is the world's leading supplier of induction bending equipment for both pipe and structural shapes. Bending is the preferred alternative to traditional fit and weld procedures due to its precision and accuracy, as well as the overall strength of the final product. We are able to bend a wide variety of materials including carbon steel, stainless steel, duplex steel, all API X grades, and P1-P15E, P41-45.



Industries Served

- Power
- Petrochemical
- Chemical
- Offshore
- Pipelines
- Refining
- Nuclear
- Pharmaceutical

Modular Fabrication



Shaw's single source capability to provide pipe, steel, and module assembly enables us to supply customers with a complete package, delivered to the job site for immediate installation and hook-up with minimal labor.

Shaw Modular Solutions, our state-of-the-art, 410,000 square-foot facility in Lake Charles, Louisiana, has the ability to fabricate and assemble structural, piping, equipment, and other modules for use in a wide variety of field applications. We utilize industry-leading technologies and vertical integration with our pipe and steel fabrication capabilities to provide a simple approach to maximizing client value and results.

Structural Steel Fabrication

Shaw also provides a complete range of structural steel and plate fabrication services. With two North American facilities that operate in accordance with the American Welding Society Standard D1.1, we can fabricate both large and small projects. Shaw Rio Grande Valley Fabricators opened its doors in 2008. The facility was built with state-of-the-art equipment and piping technologies designed to interface with Shaw's proprietary production management systems and is capable of producing 6,500 spools per month and 2,000 tons of structural steel in a single shift.

Pipe Support Systems

Shaw Pipe Support Systems is known throughout the world for its ability to accurately analyze piping stress, then engineer, design, and manufacture the required piping hangers and support systems. Our engineers are specialists in all phases of pipe support engineering and design. FCI HANGER, our proprietary software system, also develops bills of material, creates CAD pipe hanger drawings, and integrates with our other software systems to automatically generate material take offs, test reports, inventory control output, and other project documentation. Shaw Pipe Support Systems supply a wide range of piping support products including constant spring hangers, variable spring hangers, pre-insulated pipe supports, hydraulic and mechanical snubbers, support hardware, special restraints, and supplementary steel.



Energy & Chemicals

The Shaw Group Inc.'s acquisitions of the assets of the former Stone & Webster and Badger® companies, which now comprise Shaw's Energy & Chemicals Division, have led to an exciting new era that offers its customers a unique blend of talent, technology and resources. The impressive 111+ year history of technology innovation and EPC services of Stone & Webster and Badger® have been combined with Shaw's current capabilities to create a vertically integrated organization capable of providing complete project services including technology, engineering, procurement, all aspects of piping system supply, construction, commissioning and maintenance. With approximately 27,000 employees worldwide, the expanded Shaw Group offers clients the full range of international project services.

Shaw Energy & Chemicals Division is involved in the research, development, demonstration, commercialization, and design of a wide range of gas, petrochemical, chemical processing, and industrial units. These activities extend from early process development work through the construction of full-scale facilities. Advanced tools are utilized from rigorous process simulations to comprehensive 3D modeling of units incorporating intelligent documents. Seamless processes are implemented to effectively link the engineering, procurement, fabrication, material management, and construction phases.

Shaw Energy & Chemicals is strongly committed to maintaining a leadership position in core technologies. Our tradition of technology excellence continues today with an emphasis on technology advancement and application. Shaw's process expertise and innovation include leading technology in the refining, petrochemical, and industrial business sectors:

- Refining
 - Fluidized Catalytic Cracking
 - Deep Catalytic Cracking
 - Hydrotreating
 - Visbreaking
 - Hydrogen
- Olefins
 - Advanced Recovery Systems (ARS)
 - Ultra Selective Conversion® Cracking Furnaces (USC)
 - Spent Caustic and Quench Water Pretreat
 - Spent Caustic Wet Air Oxidation
 - Ripple® Tray
 - C₂ and C₃ Acetylene Recovery
- Chemicals and Polymers
 - Polyethylene
 - Polypropylene
 - Polystyrene

Shaw's Power Group



Shaw is an industry leader in fossil, nuclear, and renewable power, offering safe, efficient, and clean energy solutions that benefit our clients and communities around the world. We draw on a heritage of more than a century in designing, building, and maintaining assets in the electric power industry and achieve vertical integration through Shaw's pipe, steel, and ductwork fabrication capabilities, making us unique in the power industry. Our focus on safety, integrity, teamwork, initiative, and win-win relationships with our clients makes Shaw the sought-after power solution provider.

Fossil Power

Shaw delivers premier engineering, procurement, and construction (EPC) services to the fossil power industry. We are a leader in the design and construction of circulating fluidized bed, ultra-supercritical and supercritical coal-fired power plants. Clients seeking gas-fired plant expertise come to us for plants using advanced gas turbine technologies. Shaw also is an expert in retrofitting existing power plants with air quality control systems, including wet and dry flue gas desulfurization (FGD), NOx and mercury removal and particulate emissions control systems.

Nuclear Power

Shaw offers a diverse portfolio of solutions based on more than 60 years of nuclear industry leadership. Our nuclear maintenance contracts cover approximately 35 percent of the operating units in the U.S. and our power uprates have added more than 3,000 MW to the U.S. grid. Shaw recently signed a commercial relationship agreement with Toshiba to become the exclusive EPC contractor for Toshiba's Advanced Boiling Water Reactor (ABWR) nuclear power plants. This agreement includes opportunities worldwide outside

of Japan and Vietnam. The ABWR agreement is in addition to the Westinghouse agreement to build AP1000™ nuclear power projects. Along with our consortium team member, Westinghouse, we are building the world's first AP1000™ nuclear power plants. Several major milestones have been completed at two project sites in China, where Shaw is providing engineering, procurement, commissioning, information management, and project management services for the first four reactors in China's nuclear power expansion program. Shaw and Westinghouse are also under contract to provide EPC services for six new nuclear units in the U.S., the first contracts awarded in nearly 30 years for new nuclear power plants.

Capabilities

- Engineering
- Design
- Procurement
- Construction/Management
- Modularization
- Licensing & Safety
- Maintenance & Modifications
- Startup & Test
- Pipe Fabrication
- New & Operating Plant Services

Renewables

Shaw designs and builds renewable energy solutions, including geothermal, solar, and biomass, to meet the demand for increased power generation and reduced emissions. We deliver successful projects to our clients through our broad experience and comprehensive range of services.

Plant Services

Shaw is one of the largest maintenance providers to the power and industrial industries in the U.S., offering full-service plant engineering, reliability, turnaround, outage, and other services. We provide modification and capital construction services for refining, petrochemicals, pipeline, and electric power industries. Our comprehensive range of services are offered to clients in combinations that will increase capacity, reduce expenditure, and optimize cost, ensuring the highest return on critical production assets within their facilities.

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**Shaw**® a world of **Solutions**™

Gas-Fired Generation

Shaw has a strong history of successfully delivering efficient, state-of-the-art power plants. The combination of our experience with advanced gas turbine technologies, global presence, and engineering, procurement, construction, fabrication, and modularization capabilities ensures cutting-edge solutions for our clients. Shaw helps owners succeed in building efficient, cost-effective facilities by providing everything from site studies through total turnkey engineering and construction, as well as competitive enhancement of existing facilities.

Shaw's work on major gas-fired projects has involved the innovative use of modularization to improve quality and site safety while benefiting schedules. We can provide all project management, engineering, procurement, construction, and commissioning services necessary for the successful completion of gas-fired power plant projects.



Astoria Power Plant, New York City, New York

Astoria 500-MW Generating Station

In 2006, Shaw successfully completed the commissioning and performance testing of the Astoria 500-MW combined cycle plant in New York City. The plant is dual gas/oil-fired with gas as the primary fuel. Shaw was responsible for complete engineering, procurement, construction, and startup of the plant on a turnkey basis. The project was completed in 24 months from the start of construction, a record for a plant of this size in the New York City area. This was accomplished through the use of modularization

techniques, including the complete off-site fabrication of the heat recovery steam generators (HRSGs), which were then shipped and moved into place in one piece, an industry first. Similarly, the air-cooled condenser was prefabricated off-site in modules, which were then lifted into place. This technique significantly reduced the work needed to be completed in elevated areas, enhancing safety.



Currant Creek Power Plant, Mona, Utah

Currant Creek Power Plant

Shaw provided engineering, design, procurement, construction, and startup services for a nominal 525-MW, combined-cycle power plant located near Mona, Utah. The plant has a 2x2x1 configuration, uses an air-cooled condenser, and is a single-fueled natural gas installation.

The Currant Creek power plant design consists of a maximum generating capacity of 550 megawatts, which began operation in simple-cycle mode during the second quarter of 2005 and combined-cycle mode in the first quarter of 2006. It includes two 170-MW General Electric PG7241FA (GE 7FA) natural gas-fired combustion turbines, which operated first in simple-cycle and later in a combined-cycle mode with two supplementary fired, three-pressure HRSGs and a common, reheat condensing steam turbine. Each combustion turbine is equipped with dry, low-NO_x combustors to minimize NO_x formation. A selective catalytic reduction (SCR) system is installed to further reduce the NO_x emissions of the plant. The plant uses an air-cooled condenser to condense steam from the steam turbine.

Major features of the plant included:

- Air cooling—all major cooling loops are air-cooled, resulting in significant savings in water use
- Heat rate performance—latest turbine technology coupled with modern HRSG design and natural gas performance heating for enhanced heat rate
- Combustion turbine inlet air cooling—evaporative cooling increases efficiency during hot, low-humidity periods (up to 5-MW benefit per combustion turbine)



Harquahala Power Plant, Tonopah, Arizona

Harquahala Power Plant

In 2003, Shaw successfully completed commissioning and testing of the three-unit nominal 1,100-MW combined-cycle power plant, located 60 miles west of Phoenix, in the town of Tonopah. Shaw was responsible for the engineering, design, and procurement of equipment and materials, preparation of construction installation drawings, construction, testing, and commissioning activities for the project.

The plant is made up of three Siemens Westinghouse 501G combustion turbine generators (CTGs), three NEM HRSGs, three Siemens steam turbine generators (STGs), and essential auxiliary systems and facilities. NO_x emission control is accomplished using dry low NO_x combustors, as well as SCR for NO_x in the HRSG. Carbon monoxide emissions are controlled by the use of a carbon monoxide catalyst. An inlet air filtration system provides suitably filtered combustion air to the CTG and evaporative cooling is provided downstream of the inlet filter. Each CTG is further supplied



Harry Allen Generating Station, Las Vegas, Nevada

with the necessary support system to allow steam injection and achieve enhanced power production.

Harry Allen Generating Station

Shaw is the engineering, procurement, and construction contractor for a new 500-MW combined-cycle, natural gas-fired power plant at the existing Harry Allen Generating Station north of Las Vegas.

The plant—specifically designed for a western U.S. environment—minimizes water usage by incorporating an air-cooled condenser and a zero liquid discharge system. The plant includes GE 7FA gas turbines, a GE D11 steam turbine and Vogt Power International heat recovery steam generators.

The project is expected to employ more than 600 people during peak construction and is scheduled for completion in 2011.

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Air Quality Control



FGD Retrofit at Coal-Fired Unit

Shaw is a leading provider of air quality control systems (AQCS), including wet and dry flue gas desulfurization (FGD), NO_x and mercury removal, and particulate emissions control systems. We design, engineer, and construct AQCS as retrofits or new installations and maintain our leadership position within the industry by staying at the forefront of the latest technological innovations. We offer cost-effective retrofits even under severe site restrictions with challenging schedules.

Shaw's impressive distinctions in AQCS include the successful installation of one of the first commercial-grade, gypsum-producing FGD systems in the United States, one of the lowest-cost FGD systems, and one of the largest FGD systems with zero water discharge, producing gypsum. Shaw also is a leader in mercury control retrofits and is installing activated carbon injection systems with baghouses on several large coal units. We are a leader in multipollutant emissions control projects currently underway with domestic and international utilities.

As a full-service engineering, procurement, and construction (EPC) organization, we can assist with all AQCS needs on new and existing units.

FGD Retrofit at North Carolina Coal-Fired Units

Our client is installing FGD retrofits on 12 coal-fired units (a total of 6,600 MW) at four plant sites in North Carolina. The addition of the FGD systems is mandated by the North Carolina Clean Air Pollution Control Authority. The FGD systems will be limestone forced oxidation (LSFO) scrubbers producing wallboard-grade synthetic gypsum as a byproduct.

Shaw (with a consortium partner) is providing the engineering, design, procurement, construction, and startup for the wet FGD LSFO systems. Shaw is customizing each plant's design based on a common technology and design model. Common limestone receiving, processing, and handling facilities, as well as common gypsum dewatering and storage facilities at each location, will support the process. The desulfurized flue gas will be exhausted into new chimneys, which will consist of a common concrete shell and individual fiberglass reinforced plastic (FRP) flues for each unit. Shaw has accomplished the majority of FGD retrofit construction-related work at all stations while the existing units were online. Completion of the retrofit program is planned for the end of 2010.

Mirant FGD Fleet

Shaw was awarded an EPC contract by Mirant Mid-Atlantic, LLC, to retrofit emissions control systems at its three power generation facilities in Maryland. The wet FGD units, or scrubbers, are designed to reduce SO₂ emissions by up to 98 percent, significantly improving the quality of emissions from the Chalk Point, Dickerson, and Morgantown generating stations.

The systems are LSFO scrubbers producing wallboard-grade gypsum, a recyclable byproduct. Shaw's scope of work included erecting all process equipment, pipe, vessel and buildings, electrical distribution, limestone material handling conveyors and reclaimers, axial booster fans, wastewater treatment systems, and new chimneys at each site. The projects were completed in late 2009.

PPL Fleet

Shaw installed FGD systems on five units at PPL's Montour and Brunner Island generating stations. The units were operational in mid-2008 at the Montour Generating Station and late 2009 at the Brunner Island Generating Station.

The FGD systems are composed of LSF0 scrubbers that produce synthetic gypsum as a byproduct. Shaw's scope of work included overall coordination of the original equipment manufacturer work, engineering, design, procurement, construction of the BOP facilities, and plant commissioning and startup.

Work at the Montour Generating Station included Units 1 and 2, at 780 MW each. The gypsum byproduct is transported by conveyor to a wallboard manufacturing facility that recently was constructed adjacent to the power plant. Shaw's work at the Brunner Island Generating Station included Units 1, 2, and 3 for a total of 1,540 MW. The gypsum byproduct will be shipped offsite to wallboard manufacturing facilities.



PPL Montour Station

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Coal-Fired Generation

Shaw has extensive experience delivering coal-fired power plant projects on brownfield and greenfield sites. Our current projects use ultra-supercritical and supercritical pulverized coal and circulating fluidized bed combustion technologies to provide clients with the capability to burn coal and opportunity fuels efficiently. Shaw helps power generation companies succeed in building efficient, cost-effective, state-of-the-art facilities that meet their generation capacity needs.

Project Highlights

Cleco Madison 3

660-MW Circulating Fluidized Bed (CFB) Unit

Completed: Early 2010



Cleco Madison 3

Shaw was selected as the engineering, procurement, and construction (EPC) contractor for this CFB unit addition to the Brame Energy Center. The unit is designed to burn opportunity fuels, including petroleum coke, lignite, Illinois Basin coal, and Powder River Basin coal.

Shaw's scope of work included design, supply, and installation of:

- Two 330-MW CFB boilers
- A single 600-MW (net) steam turbine
- Air quality control system, including flash dryer absorber and baghouse
- Balance of plant facilities:
 - Fuel handling system expansion, including a barge unloading facility and overland conveyor
 - Limestone receiving and preparation
 - Ash handling
 - Makeup water supply, water, and wastewater treatment facilities
 - Condenser cooling water system
 - Electrical and distributed control systems equipment

- Piping, pumps, heat exchangers
- Direct hire construction

Cliffside Steam Station

800-MW Supercritical Unit

Scheduled Completion: 2012



Cliffside Steam Station

In 2006, Shaw was selected as the EPC contractor for this supercritical unit addition to our client's plant. The scope of work is complete engineering, procurement, and construction of the new unit. The unit is designed to burn Central Appalachia, Illinois Basin, and Powder River Basin coals.

Shaw's scope of work includes design, supply, and installation of:

- Supercritical pulverized coal boiler and steam turbine generator
- Air quality control system, including selective catalytic reduction, dry spray dryer absorber/fabric filter baghouse, and wet flue gas desulfurization
- Balance of plant facilities:
 - Coal handling system expansion
 - Limestone receiving and preparation
 - Gypsum dewatering and handling
 - Makeup water supply, water, and wastewater treatment facilities
 - Cooling tower
 - Electrical and distributed control systems equipment
 - Piping, pumps, heat exchangers
- Direct hire construction

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Power Generation Services



Miller Steam Plant, Alabama

Shaw has hands-on experience in all aspects of electricity generation. Through our rich heritage, we have designed, engineered, and built a significant portion of U.S. generating plants and executed a large number of international assignments for power plant engineering and design. Our projects include coal, gas, oil, cogeneration, nuclear, hydroelectric, and geothermal plants.

As a full-service engineering, procurement, and construction organization, Shaw can provide any engineering service needed for the design and construction of new power facilities, as well as refurbishment and modification of existing facilities. Shaw's major power engineering offices are located in Boston, Charlotte, Denver, Trenton, and Cherry Hill.

Our staff of skilled engineers and specialists is ready to assist you with your engineering services needs. Whether your project involves an equipment condition assessment, implementation of the latest distributed control technology, or complete design and construction of an optimized flue gas emission control system, Shaw has the resources to match the assignment.

Each project uses our project management template that is adjusted to fit the complexity of the project. We have the proven ability to manage projects from less than 100 to millions of hours. Thus, our engineering services clients are assured an on-time, on-budget project, regardless of the size. Our services include:

- New plant engineering and design
- Design for refurbishment, retrofit, and modification
- Owner's engineer
- Asset evaluation (due diligence/pro forma)
- Generation addition studies
- Decommissioning studies
- Project development support
- Start-up and testing support

Emissions Control

- Low NO_x burner conversions and combustion optimization
- Selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) additions
- Flue gas desulfurization (FGD) scrubber additions and system upgrades
- Particulate control system additions and upgrades
- Mercury control system additions and upgrades
- Draft system modifications for improved performance
- Continuous emissions monitoring systems (CEMS) applications
- CO₂ capture and sequestration

Mechanical

- Thermal cycle design and performance analysis (heat balance)
- Piping design, stress analysis, and pipe supports
- Mechanical equipment specification and evaluation
- Boiler technology selection, specification, and evaluation
- Large gas and steam turbine specification and evaluation
- Gas turbine technology evaluation
- Heat recovery steam generator (HRSG) and fired boiler specification and evaluation
- Facilities design (HVAC, fire protection, drains)



Mexicali Plant, Sempra

Electrical/Instrumentation & Control

- Power system design and analysis
- Protective relaying
- Variable frequency drive specification and evaluation
- Backup power systems (battery and engine-generator)
- Distributed control systems architecture and integration
- Programmable logic controller architecture and integration
- Burner management system upgrades
- Plant control modernization
- SCADA system design and upgrades
- Switchgear

Geotechnical

- Site and soils evaluation
- Foundation recommendations
- Subsurface investigations
- Earth structures and retaining walls
- Seismic criteria development
- Soil-structure interaction analysis
- Site assessments (subsurface hazards)

Civil/Structural and Architectural

- Site layout and development
- Stormwater system design and runoff control
- Erosion and sedimentation control design
- Road and railroad design
- Byproduct (ash and sludge) short- and long-term storage
- Foundations analysis and design

- Steel structures analysis and design
- Architectural analysis

Material Handling

- Rail, barge, and truck unloading facilities
- Ash handling
- Loading facilities for ash, scrubber sludge, and other byproducts
- Reagent handling (lime, limestone, ammonia, and mercury control reagents)
- Transfer and storage facilities
- Sizing, drying, and other preparation facilities
- Western coal conversions
- Blending facilities
- Dust control (suppression and collection)
- Condition assessments and long-range maintenance planning

Associated Services

- Cost studies
- Procurement support
- Construction management
- Start-up and O&M support
- Noise consulting
- Stack testing
- Demolition support
- Project scheduling
- Maintenance support



Contact

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Fabrication and Manufacturing



Shaw is the largest supplier of fabricated piping systems in the U.S. and a leading provider of piping solutions through industrial pipe fabrication facilities and manufacturing and distribution outlets around the world. As a major provider of piping technology, particularly in induction bending, we develop and use proprietary computer applications for design, interface, material control, production scheduling, and fabrication management. Our commitment to the latest technology ensures enhanced performance and reliability in meeting project execution requirements. Shaw's ability to provide pipe fabrication with pipe bending and structural steel fabrication, now combined with the option for module fabrication and assembly, enhances our overall capabilities to provide a complete package that meets the needs of our customers.

Environmental and Infrastructure



Shaw provides program and construction management, remediation and restoration, logistics support, operations and maintenance, emergency response and recovery, laboratory services, and energy efficiency services to commercial and U.S. federal, state, and local government clients. With staff throughout the world, we provide full-service solutions to clients facing complex environmental and infrastructure challenges with quality and safety in mind.

Shaw has more than 40 years' experience leading complex construction programs for new design-build construction and major renovations, managing major projects for clients around the world. In addition, Shaw manages programs and provides project oversight for clients on a national level and assists clients in implementing programs in all areas of environmental management, including helping them meet their sustainability goals.

We provide emergency response, relief, and recovery services for clients and communities around the world. Our specialized resources and equipment, nationwide locations, and technological capabilities enable quick response to adverse environmental, health, safety, and economic impacts resulting from natural disasters, industrial accidents, or acts of terrorism. We have

Executive Team

J.M. Bernhard Jr.
Chairman, President, and
Chief Executive Officer

Brian K. Ferraioli
Executive Vice President and
Chief Financial Officer

Gary P. Graphis
Executive Vice President and
Chief Operating Officer

John Donofrio
Executive Vice President,
General Counsel and
Corporate Secretary

Louis J. Pucher
President, Energy &
Chemicals Group

David L. Chapman Sr.
President, Fabrication &
Manufacturing Group

George P. Bevan
President, Environmental &
Infrastructure Group

Clarence L. Ray Jr.
Chief Executive Officer,
Power Group

Michael J. Kershaw
Senior Vice President and
Chief Accounting Officer

responded to more than 10,000 emergencies, including Hurricane Katrina, the earthquake in Haiti, and the oil spill in the Gulf of Mexico.

We assist our federal clients with projects ranging from mission support services to munitions response from U.S. Environmental Protection Agency Superfund cleanup to groundbreaking design and construction projects. Two of our largest infrastructure projects for the federal government, the Inner Harbor Navigation Canal Surge Barrier project for the U.S. Army Corps of Engineers and the MOX Fuel Fabrication Facility project for the U.S. Department of Energy, are first-of-a-kind design-build projects in the U.S.

Our history of infrastructure projects spans more than a century and covers transportation, industrial water and wastewater, ports and harbors, coastal restoration and protection, environmental remediation, energy efficiency and green technologies. Shaw is a full-service provider, helping clients establish and operate energy efficiency programs; design, build, operate, and maintain nuclear material facilities; maintain and operate or restore military bases; remediate contaminated properties; and design and build facilities using Leadership in Energy and Environmental Design (LEED) standards.

Contact

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The Shaw Group Inc.

ENGINEERING • PROCUREMENT • CONSTRUCTION • MAINTENANCE • TECHNOLOGY • PIPE FABRICATION

Backed by an industry leadership position and strong global presence, Shaw is a vertically integrated provider of engineering, design, construction, technology, maintenance, and pipe fabrication. As a Fortune 500 company with 27,000 employees who work from nearly 150 locations around the world, Shaw provides solutions for clients in the power, environmental, infrastructure, and energy and chemicals industries. We are the power sector industry leader for the third consecutive year, according to Engineering News-Record's list of Top 500 Design Firms.

Highlights

- NYSE: "SHAW"
- Fortune 500 company
- 27,000 employees
- More than 150 offices and locations worldwide
- \$7 billion in revenues for fiscal 2010
- Backlog of \$20.1 billion*



 **Shaw**™ a world of **Solutions**™

Core Values Remain Constant

Throughout Shaw's history, our core values have remained constant: safety, quality, excellence, initiative, innovation, integrity, valuing the individual, focusing on our customers, accountability, and open and honest communication. These values are not only practiced and embodied on an internal level, but they also are reflected in our performance and are recognized by our customers. Our core values are at the heart of our ability to create and respond to opportunities and fuel growth.

Shaw's commitment to safety is evident in programs such as Targeting Zero, which supports the company's mission of zero injuries, illnesses, and environmental harm.

Strong Legacy...Bright Future

Shaw's strategic acquisitions have contributed to the success of the company. In 2000, we acquired the key assets of century-old Stone & Webster, allowing us to build on excellence in the power and process industries. We acquired the key assets of The IT Group, Inc. in 2002, which enhanced our environmental and infrastructure capabilities, and Badger Technologies in 2003, which expanded our technology portfolio to include several olefin derivatives and gas-to-liquids technologies. In 2006, Shaw acquired a 20 percent interest in Westinghouse Electric Company and established the Shaw/Westinghouse AP1000 consortium, a leader in the global nuclear resurgence providing engineering, design, and construction services for Generation III+ nuclear plants around the world.

Markets and Services

Nuclear Power



Shaw offers fully integrated nuclear services based on more than 60 years of industry leadership. We provide systemwide maintenance and modification services to approximately 35 percent of U.S. nuclear units,

including the country's two largest nuclear fleets. As an established leader in power uprate services, Shaw has performed more than 60 uprate studies and projects, which have added more than 3,000 MW to the U.S. power grid. As a member of the AP1000 Consortium, Shaw is providing project management services for four AP1000™ nuclear units in China and has engineering, procurement and construction contracts for six units in the U.S. From engineering and design to licensing,

procurement, modularization, pipe fabrication, construction, maintenance, startup and testing, and new plant services, Shaw is playing a major role in the resurgence of the world's leading source of carbon-free electricity generation.

Shaw Facts

- 20 percent owner of Westinghouse Electric Company
- Architect-Engineer for AP1000 Consortium
- Building the world's first AP1000™ nuclear power plant at two sites in China and the first new nuclear plants to be constructed in the U.S. in more than 30 years
- Signed cooperation agreement with China's State Nuclear Power Technology Corp. to collaborate on plans to build 30 new nuclear plants by 2020
- Designed and constructing the U.S.'s first-of-a-kind MOX Fuel fabrication facility for the U.S. Department of Energy
- Leading the largest-ever design-build civil works project for the U.S. Army Corps of Engineers
- Long-standing reputation in proprietary ethylene and catalytic cracking technologies
- Licensed more grassroots fluidized catalytic cracking units than all other licensors combined
- Maintenance provider at approximately 35 percent of U.S. nuclear reactors—two fleetwide nuclear maintenance contracts in the U.S.
- Emergency responder in homeland security attacks, war zones, and natural disasters, including the earthquake in Haiti and hurricanes Katrina and Rita
- One of the largest environmental restoration contractors in the U.S.
- Leading munitions response contractor for the Department of Defense
- First-of-its-kind module fabrication and assembly facility for the power and process industries, including nuclear
- Seven industrial pipe fabrication facilities worldwide and even Alloy Piping Product (APP) manufacturing and distribution outlets strategically located throughout North America
- Performed power uprates at U.S. nuclear plants, which have added more than 3,000 MW—the equivalent generating capacity of more than two baseload facilities
- Building one of the first ultra-supercritical coal-fired power plants in the U.S.
- Leader in installed scrubber systems ranging from single-unit upgrades to fleetwide retrofit programs
- Engineering, procurement, and construction contractor for largest 100-percent petcoke-fired circulating fluidized bed power plant in North America

Fossil Power



Shaw delivers premier engineering, procurement, and construction services and a wide range of services using other clean energy solutions, such as geothermal, solar, and biomass, to the power industry. We are a leader in the design and

construction of circulating fluidized bed boilers, ultra-supercritical and supercritical coal-fired power plants. Clients seeking gas-fired plant expertise come to us for plants using advanced gas turbine technologies. Shaw also is an expert in retrofitting existing power plants with air quality control systems, including wet and dry flue gas desulfurization (FGD), NOx, and mercury removal and particulate emissions control systems.

Plant Services



Shaw is one of the largest maintenance and modification providers to the U.S. power and process industries in the U.S., offering full-service plant engineering, reliability, turnaround, outage, modular construction,

and specialty services. We serve clients in nuclear, fossil, petrochemicals, specialty chemicals, oil and gas, manufacturing, and refining industries. We also provide modification and capital construction for refining, petrochemicals, pipeline, and electric power industries.

Energy and Chemicals



Shaw provides integrated technology, engineering, procurement, and construction services to oil and gas, refining, petrochemicals and upstream customers around the world. Research and innovation drive

Shaw to develop, design, and commercialize a wide range of upstream and downstream process technologies, including those for petroleum refining and manufacturing, olefin derivatives, petrochemical intermediates, and polymers. Our emphasis on rapid technology advancement and early commercial application, coupled with our hands-on management approach and long-standing commitment to continuous improvement, has resulted in pioneering developments in the hydrocarbon processing industry.

Notable Projects

Southern Company – Georgia (U.S.)

SCANA Corporation – South Carolina

Progress Energy – Florida

AP1000 Consortium: Engineering, procurement and construction contracts for six units across three U.S. sites

State of Louisiana

Managing the construction of barrier berms along Louisiana's coast in response to the Gulf oil spill

ExxonMobil Chemical – Jurong Island, Singapore

Technology, engineering, procurement, and construction services for olefins recovery facility and power cogeneration unit

U.S. Department of Energy – Savannah River Site, South Carolina

Design, construction, startup, and operation of the Mixed Oxide Fuel Fabrication Facility

U.S. Army Corps of Engineers – Louisiana

Design and construction of the Inner Harbor Navigation Canal Surge Barrier project for New Orleans

State Nuclear Power Technology Company of China (SNPTC), Sanmen Nuclear Power Company, Shandong Nuclear Power Company Ltd., and China National

Technical Import & Export Corporation (CNTIC)

AP1000 Consortium: selected to provide four Westinghouse AP1000 nuclear power units

Iraq's Ministry of Oil – Maissan and Kirkuk refineries

Feasibility studies and front end engineering and design (FEED) for two grassroots 150,000 barrels per day refineries

Abu Dhabi Oil Refining Co. – United Arab Emirates

Engineering and licensing for proprietary fluid catalytic cracking technology; unit is world's largest under design

AEP/SWEPCO – Arkansas

EPC contract for 600-MW ultra-supercritical coal-fired generating facility

Dominion – Virginia

EPC contract for 585-MW circulating fluidized bed coal-fired generating facility

Exelon Generation Company, LLC

Fleetwide maintenance and modifications contract serving 17 nuclear units

Energy Nuclear

Fleetwide maintenance and modification contract serving 11 nuclear units

NV Energy – Nevada

Engineering, procurement, and construction of new 500-MW combined cycle, natural gas-fired power plant