



# STATEMENT OF QUALIFICATIONS

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## ENERGY CLIENTS



**HARD HAT SERVICES™**  
Engineering, Construction and Management Solutions

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# INTRODUCTION

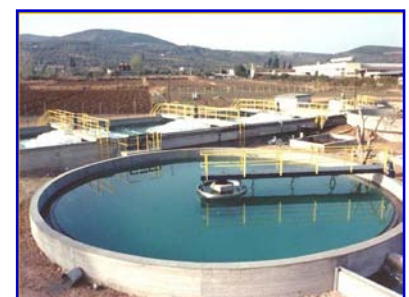
Hard Hat Services (HHS) is a full-service, design-build firm specializing in engineering and installation of sustainable solutions for Energy clients as well as other Industrial clientele. Our approach to servicing our clients is comprehensive, and ultimately allows our clients to focus on their core business. We establish a team approach and make ourselves accountable for every aspect of our work. We deliver quality services, minimize costs, accelerate schedule, and work safely. We manage and monitor every item on your project's critical path and orchestrate the hundreds of components, items, suppliers and services required to complete the job. Furthermore, our turnkey solutions provide our clients with a single point-of-contact, mitigating subcontractor risks and minimizing field changes. All of which result in greater savings and fewer headaches for our clients.

HHS has developed two key alliances to provide an extended suite of services to our energy clients. Our partnership with Orbit Energy brings full capabilities to the development, permitting, engineering, construction, start-up, and operation of High Solids Anaerobic Digestion biogas-to-energy systems. Ely Energy is a global leader in LPG and deNOx systems, and our collaboration gives our clients access to synthetic natural gas systems, ammonia vapors for SCR applications, industrial gas back-up systems, and customized modular control systems all direct from the manufacturer.

Every project Hard Hat Services undertakes has environmental impacts. We are diligent in managing ours, our clients, and our earth's resources in an environmentally conscious manner and constantly seek out ways to increase sustainability in every client engagement.

Hard Hat Services is flexible with various contract delivery mechanisms and comfortable with traditional, risk-shared or alternative project delivery contracts. We realize our client's needs are complex and crucial for efficient business operations. It is always our goal to exceed our client's expectations and we invite you to choose Hard Hat Services for your next critical project.

**Designing and Building Sustainable Clean, Green Solutions For Industry**



## **Water Treatment Plant Design-Build, Linde Gas – Lemont, Illinois**

HHS has provided design-build services for a water treatment plant and the associated building. The water treatment plant will clean water from the new Linde Gas hydrogen plant, which services the Citgo Oil Refinery. Construction of the facility was completed in 2009.

## **Landfill Gas-to-Energy Design, Waste Management – Barre, Massachusetts**

HHS prepared design drawings and specifications for a 1.6-MW landfill gas (LFG) electrical generation facility. The project included a pre-assembled LFG compressor skid (including the compressor, air cooler and coalescing condensate separators); a Caterpillar 3520 engine-generator (assembled in a container); and associated electrical switchgear, transformers, and MCC. The LFG compressor skid, MCC, and electrical switchgear were enclosed in a site-constructed CMU building. The gas supply piping was tied into the existing LFG collection piping; condensate was collected in a sump and return to the existing condensate collection system.

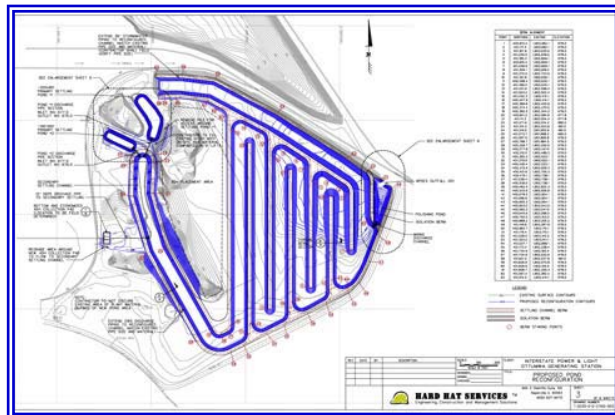
## **High Solids Anaerobic Digestion (HSAD) System Design, Orbit Energy**

HHS has developed a conceptual design for a 120 wet ton-per-day HSAD system that will generate electricity to sell to power companies. Electricity will be generated in cogeneration units using biogas from the HSAD system digesting various feedstocks. The feed materials may be waste food, food processing wastes (e.g., DAF float from meat processing facilities), animal (e.g., hogs) manure, and/or other organic wastes or byproducts.

## **Settling Pond Reconfiguration, Alliant Energy - Ottumwa, Iowa**

*Similar projects completed at Marshalltown, Iowa, Sheboygan, Wisconsin, and Cedar Rapids, Iowa*

The Alliant Energy generating station uses steam from coal fired boilers for power production, and pulls in water from the adjacent Des Moines River. HHS completed a Pond Maintenance Plan and investigation, which included a bathymetry survey, studying the various flows that were emptying into the settling pond, and sampling the pond sediment to determine how and where the solids were settling out. HHS was able to predict a lifespan for the existing pond based on the solids input, and designed a solution to optimize the use of the settling pond to ensure present and future compliance with the NPDES permit.



The settling pond was redesigned to include three separate basins. There is a primary pond, where approximately 95% of the solids are removed. A secondary s-shaped settling basin was designed. By using an s-shape design in the space available, the water is flowing through a much longer path, allowing additional fine solids to drop out of suspension. The s-shape of the basin also allows for easy maintenance, making all the areas accessible for routine dredging. HHS also developed an innovative concrete ash collection basin to improve bottom ash handling, in order to reduce the amount of bottom ash filling the secondary basin. Water that flushes out ash from the boiler passes through the collection basin, where the ash drops out and can be easily removed before the water enters the settling basin.



## **Westinghouse Former Fuel Cycle Facility – St. Louis, Missouri**

HHS provided environmental project management services to Westinghouse Electric Company LLC (Westinghouse) at its former fuel cycle manufacturing facility in Hematite, Missouri. The Hematite facility had been in operation for nearly 50 years prior to its acquisition by Westinghouse in 2000. Westinghouse ceased production at the facility in June 2001 and began decommissioning activities at the site. At the request of the Missouri Department of Natural Resources (MDNR), the Missouri Department of Health and Senior Services took samples from several private wells in the vicinity of the site. The results indicated that volatile organic compounds (VOCs) were present in a drinking water well on the property. In response to the identified contamination, HHS prepared an Engineering Evaluation/Cost Analysis in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). HHS also oversaw preparation of the design for extension of the local public water supply, bidding, and completion of the project.

Westinghouse also cooperated with MDNR to perform a Remedial Investigation/ Feasibility Study (RI/FS) at the site. HHS managed the RI/FS, including preparation of bid documents, contractor evaluation and oversight, and general project management. The RI/FS includes a human health and ecological risk assessment.

## **PCB Contaminated Buildings Demolition, PCB Treatment Inc. (including KCP&L) - Kansas City, Missouri & Kansas**

Hard Hat Services was retained by the PTI Steering Committee (which included Kansas City Power and Light) to act as the overall Project Technical Manager and Quality Assurance firm for a \$35MM Removal Action. Specifically, HHS managed the removal and dismantlement of two PCB impacted buildings located in Kansas City, Missouri and Kansas City, Kansas.



The PTI sites were referred to Superfund during early 1995. The EPA and the Steering Committee put together and released an Engineering Evaluation/Cost Analysis (EE/CA) for the sites. USEPA and the Steering Committee entered into an Administrative Order on Consent (AOC). The Steering Committee is a group of Potentially Responsible Parties (PRP) that were once customers of PCB Treatment Inc. Under the AOC, the PRPs conducted a site investigation and used this information to develop the EE/CA. In addition,

and after the EE/CA the PRPs completed a Removal Site Evaluation, which included sampling and analysis of interior building walls and floors as well as exterior soil.

The HHS project role was to provide overall project management and on-site construction management for multiple subcontractors, schedule and budget control, and liaison with the USPEA and other regulatory agencies. In addition, HHS was responsible for on-site sam-



pling of the contaminated concrete and surrounding soils, to delineate which debris should be sent to a TSCA facility, and which could go to a municipal solid waste landfill.

The buildings were demolished using a controlled measure to isolate the contaminated areas and minimize dust hazards. Both buildings have been successfully dismantled. The building debris and materials were disposed of properly following all local, state, and federal regulations.

## **pH and Dissolved Oxygen Profiling, Alliant Energy - Cedar Rapids, Iowa**

*Similar projects completed in Dubuque, Iowa, and Clinton, Iowa*

HHS performed an engineering study to determine pH and DO profiles across the horizontal and vertical cross-sections of four process wastewater treatment/settling lagoons. The contribution of biological activity in the lagoons to the effluent pH was also investigated. HHS designed various pH adjustment options to bring the effluent into compliance for discharge under NPDES permit.

## **Water Intake Structure Modification, Wisconsin Electric – Two Rivers, Wisconsin**

The water intake structure for the Point Beach Nuclear Generating Station protruded above the Lake Michigan water surface, and was used as a landing area for fish-eating Cormorants.



The birds would dive underwater and be pulled in by the current of the water intake. The state of Wisconsin fined the power plant \$5,000 for each bird that was killed. HHS personnel developed a plan to lower the intake structure to eleven feet below the water surface. A HDPE screen was designed for the top of the structure. Deflector plates were installed to partially redirect warm water discharge back into the intake during the winter months to prevent freezing.

## **Oil/Water Separator Design/Build, Alliant Energy (Interstate Power & Light) – Ottumwa, Iowa**

Hard Hat Services provided design-build services for an oil/water separator system at the Alliant Energy power plant. Responsibilities included site preparation, including surveying, geotechnical analysis, and influent water sampling. HHS installed a 10,000 gallon underground oil/water separator tank, effluent sump pit, and pumping system. Other responsibilities included preparing permit applications, specifying all materials and equipment, and bid evaluation.



## **Water Discharge Pipe Evaluation, Richardson Electric - LaFox, Illinois**

HHS performed a discharge pipe system evaluation, including video camera jetting for pipe inspection. Inspections were performed on the lagoons, including inlet and outlet structures, for leaks or breaks. Recommendations were given to improve the system, and the site was evaluated for compliance with the applicable NPDES Permit.



## **Mussel Survey and Generating Station Coal Dredging, Alliant Energy – Cassville, Wisconsin**

A generating station near Cassville, Wisconsin receives shipments of coal via Mississippi River hopper barges. During the movement from the barge to the hopper incidental amounts of coal may miss landing back in the hopper barge or in the conveyor hopper, falling in the water. This coal accumulated under the dock area so that full barges were unable to be staged against the dock mooring cell at the unloader.

HHS dredged the area immediately under the clamshell to an elevation similar to the surrounding riverbed. The dredge area was about 150ft long along the bank by 100ft wide (from the loader to the channel).

The project area was located near a known historical mussel bed that supports a diverse community of species, including a federally endangered mussel and species listed as rare in Wisconsin. HHS communicated with the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources to determine that a mussel survey of the site should be performed to determine potential impacts to the freshwater mussel resources.



After the mussel study was completed, HHS coordinated the fieldwork activities in order to minimize the delays to the client's coal unloading process. A barge was spudded adjacent to the area to facilitate dredging. A silt curtain was draped around the project area to keep suspended sediment from affecting habitat conditions downstream. HHS also engineered a solution to control incidental coal fallback into the River during future unloading of coal barges, a flexible chute that deflects the fallback into the hopper barge.

## **Wastewater System Improvements, GE Water – Portage, Indiana**

HHS provides on a regular basis, engineering and consulting expertise to GE Water and Beta Steel for upgrades to the Beta Steel EAF mill wastewater system. The system was originally designed for zero liquid discharge, but lacked the capacity to treat the volume and type of contaminants that are now present at the mill. HHS has worked as a team member to upgrade cooling water capacity, sand filter treatment, dissolved air flotation, pumping and storage capacity. HHS also provided a detailed analysis of water usage and discharge from each area within the facility, so an overall system water balance could be accomplished.

## **SPCC/SWPPP Plans, Alliant Energy – Various Cities in the Midwest**

HHS reviewed the Spill Prevention, Control, and Countermeasures Plans and the Stormwater Pollution Prevention Plans for seven generating station facilities across the Midwest. HHS inspected each facility for compliance with regulatory requirements, updated the existing plans, and incorporated suggestions for improvements.



## **PCB and Heavy Metal Remediation, GE – Fort Edward, New York**

In 1973, the Fort Edward Dam on the Hudson River was removed by the dam's owner. The dam was installed in the 1820's to divert water into the Lake Champaign Canal. During the life of the dam, slab wood, sawdust, and sediment accumulated behind the dam. In the 1900's PCBs and heavy metals from upstream industries and sewer discharges accumulated in the sediment and sawdust behind the dam. On removal of the dam a part of the sediments were transported downstream and a large part of the sediment remained behind as remnant bank deposits. The site consisted of four separate remnant sediment deposits totaling approximately 50 acres.



HHS personnel supported the negotiations with the regulatory agencies to develop a remedial solution for the remnant deposits. The work included sampling and testing of the sediments to determine the storm flow suspension

potential without remedial action. The testing also included the determination of the upper elevation limit for remedial action. Alternatives from no action to complete removal were examined and the risk of each assessed. The final remedy approved by the USEPA was capping with an armor protective layer to reduce the possibility of future suspension of the sediments during storm flow. HHS personnel were also involved in the management of the construction to install the cap and armor.

## **Water Intake Well Repair, Northern Indiana Public Service Company - Chesterton, Indiana**

Due to damage from ice and settlement of the rock-filled crib forming the intake well, the intake pipes had been destroyed. The intake well also suffered from sand accumulation due to the construction of a breakwater wall was of the intake in 1968. HHS personnel performed a bathymetric survey of the Lake Michigan bottom around the well, and developed a computer model to predict the movement of sand relative to the NIPSCO well. HHS personnel designed several alternatives to fix the well, and then prepared a design package for the chosen remedy.

## **Water Intake Screen Design, ABC, Inc. - Morris, Illinois**

The Dresden Nuclear Plant recirculates cooling water to a series of ponds to bring the temperature below 80 F before reuse. In the summer months, approximately 325,000 gpm of water is lifted by six pumps and passed through a packed bed cooling tower. The water is then distributed into the towers by spray nozzles, which would clog easily. HHS personnel designed a structural frame and screen that would allow for maximum flow. HHS personnel developed a procedure to analyze the screen insert material to insure that the screen would fail before the frame if overloaded, and also designed a system to lift and wash the screens in place without needing to bring in an outside crane.



## **Geotechnical Investigation and Baghouse Foundation Design, Alliant Energy – Burlington, Iowa**

HHS performed a geotechnical investigation to support the foundation design of a baghouse at the Burlington, Iowa facility, which sits directly adjacent to the Mississippi River. Because the subsurface material is mostly sand and silt and the river is in such close proximity to the site, there is a possibility of liquefaction occurring when the baghouse structure is built. HHS advanced ten borings across the site to characterize the soils and locate the hardpan clay at depth. The soil samples were logged and sent to a laboratory and were tested for grain size, Atterberg Limits, compaction, etc. Cross-sections of the subsurface geology were created, and geophysical resistivity testing was performed onsite. This information will be used for foundation and stability design. HHS has provided Alliant with several cost-effective foundation alternatives.



## **Waste Water Treatment Plant, Alliant Energy – Ottumwa, Iowa**

The client wanted to replace the facility's existing sanitary wastewater treatment plant at its Ottumwa Generating Station with a new system utilizing a recirculating type textile media filter. After completing a survey and data review, HHS prepared a process flow diagram and a site layout for the new plant. HHS performed design-build services for the client, preparing drawings for the bid phase, specifications for all major equipment, and generating the necessary documents and forms for the NPDES permit modification. After all regulatory requirements were fulfilled, HHS completed the construction of the facility.

