

PROJECTS PAGE

The Wyvern Group Ltd – Project and Assignments

Survey: Hurricane Katrina disaster

Rapid response team after the Hurricane Katrina disaster assigned to the New Orleans metro area. Various assignments for international insurance underwriters involving asset recovery and claims evaluation. Mitigated losses and adjusted claims. Reduced a \$500 million exposure in coffee beans to less than \$10 million by proactively working with the warehouses, the coffee exchange personnel and the coffee owners.

Israeli Defense Force:

Engineered a state of the art facility for the neutralization and recycling of military grade, High Energy Density Lithium batteries. This facility meets all US EPA and European Union Air, Water, and Hazardous Materials requirements. The site and operation was design from conception to meet the requirements of ISO 14000.

Johnson-Mathey:

Engineering, site supervision, and international transportation logistics for the dismantling, shipment and re-erection of a zirconium silicate ball milling facility. The facility consisted of twelve (12) 32,000L ball mills along with their drives and controllers. The project was performed on an extremely compressed time schedule during a labor strike.

Solrec, Ltd.:

Design, fabrication, and field installation of a fully integrated, liquid fuels blending and solids fuels mixing production system. Engineered and designed a processing system to turn hazardous waste into burnable fuels. Depending on the nature of the waste and the burning method, the waste would be removed from the shipping container and processed into either a liquid or solid fuel suitable for burning in a regular industrial furnace such as a cement kiln or boiler. System was designed to meet Class 1 Div. 1, Grp. C/D electrical requirements. Detail engineering on Electrical, Instrumentation, Hydraulic Controls, and Process Integration.

Indiana Process and Pickling Corp:

State of the art, fully computer automated "Push-Pull" pickle line. Defined functionality of line equipment. Detail engineering and design of individual machines and control logic. Design of acid regeneration, hazardous liquid containment, and process fume control systems.

Nichol's Alumibrite:

Engineered and designed a self-threading, three roll, tensioning bridle for tension leveling line.

Samual Strapping, Columbus:

Engineered and designed horizontal, elevated looping car system for 14 strand annealing & painting line.

Samual Strapping, Chicago:

Engineered and designed a computer controlled, 20ft diameter, precision-locating turntable for packaging line. Turntable was able to position itself automatically to within 1/16 inch on its outer circumference of the requested position.

SUNY at Buffalo Reactor Lining Repair:

Metallurgical and Mechanical engineering for the repair of the aluminum liner in the UB reactor. Responsible for contact and negotiation with the Nuclear Regulatory Commission, which allowed "standard Industrial practice" instead of nuclear grade work level. Designed welding and assembly method for liner. Designed leak detection system as part of new liner.

Alfred University:

High Temperature/High Pressure Water Loop Modifications. Project involved designing new method of installing underground piping along with sizing and routing of the main campus distribution loop and building connection taps taking into account the new campus requirements.

Alfred University:

Ceramics Laboratory Fume Control Modifications. Design and installation of ventilation and fume control improvements for the ceramic high temperature kilns.

Sharon Steel Corp.:

Conceptual and preliminary engineering of a Continuous Caster along with a Ladle Arc Furnace and a new fume scrubber system. The emission control system included two (2) 30ft diameter close capture hoods, a particulate scrubber, a 120ft diameter settling tank, and a 10 ton/day vacuum filter de-watering sub-system.

American Iron and Steel Institute's Direct Steelmaking Initiative Pilot Plant (\$21.5 million):

Design of a continuous "AOD" iron ore to steel process system. Responsible for the design of proprietary shaped vessel, drive mechanism, and ancillary material handling systems. Also included a suppressed combustion hood with scrubber and wastewater recovery/recycling system.

Armco, Kansas City:

Preliminary engineering for the rebuilding a 19" Bar Mill. Project included the detailed analysis of the existing mills, shafts, drives, and pass design. The pass design analysis required the development of a new model for the grain shape change caused in the metal by the rolling operation.

Armco Advanced Materials, Butler:

Preliminary engineering of a 170,000 tons per year stainless steel cold mill. Included all buildings, equipment, and plant infrastructure for a "green field site" construction.

Closure of hazardous effluent ground impoundment lagoons:

Reduced closure bonding for project by \$1.5 million by working with EPA to categorize clean up effort to Superfund level. This is the only industrial lagoon site in Western New York that has a FINAL monitoring requirement, after which no further action by the owners is required.

Distributed Digital Control (DDC) System:

Engineering support for a 500,000 pound per hour steam and 3.16MW (25Hz) electrical production facility. Installed first Distributed Digital Control (DDC) System for a steam plant in Western New York. System was used to monitor, control, and coordinate the activities of four (4) high-pressure boilers, an electrical power plant, and a desuperheating station. The plant distributed steam at three (3) different pressures and could burn two (2) different fuels: reduced fuel costs by \$3.5 million.

Project:

Replacement of a 1200 ton centralized brine system with three (3) local, refrigerated glycol plants. Install new controllers and control logic on all affected production systems.

Project:

Replaced a 100,000 pound per hour, high-pressure steam boiler and changed system from 900 PSIG superheated to 500 PSIG saturated steam. Install new control logic on steam production plant and on production systems affected by steam quality change.

Project:

Engineered, planned, and supervised the upgraded replacement of all structural steel in a 5 story, 12,000 SQFT (ea.) chemical production facility. Actual construction time was limited to 336 hrs and production equipment could not be removed from the building during construction.

Project:

Engineered, designed and constructed the first EPA licensed site for the disposal by neutralization of reactive metals, particularly high energy density lithium batteries. Included the design of all custom machinery and the mechanical, electrical, and environmental protection systems. Environmental concerns included hydrogen cyanide gas, various metallic hydroxides, organic heavy metals, and hydrogen gas generation.

Project:

Redesigned gear drives for 6 major mills in a continuous ball milling operation to increase life and durability: size ranged from 8' to 12' diameter on the main gears.

Heat Stress Study:

Performed a heat-stress study on the cast iron, electric arc furnace bottoms used in a high volume zirconium oxide production plant. These bottoms were not only structural in nature but were also the ground leg of the arc and were therefore electrically active. Used metallographic and spectrometric analysis to determine mode and reason for repeated failures. Recommended new alloy and design, which improved median service life by 125%.