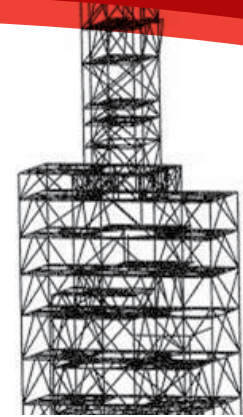


COMSIGUA HOT BRIQUETTED IRON PRODUCTION FACILITY



PROJECT: New Facility Designed To Process One Million Metric Tons of Hot Briquetted Iron (HBI)

CLIENT: Comsigua (Complejo de Guayana, C.A.)

LOCATION: Puerto Ordaz, Venezuela

SERVICES: Preliminary and Final Design Engineering

DESCRIPTION

River Consulting was selected to provide preliminary and final design engineering for a facility to process one million metric tons per year of Hot Briquetted Iron (HBI) using Midrex direct reduction technology.

Services provided for the client included multidiscipline design services and specification and selection of utility, process, material handling and electrical and instrumentation equipment. Specifically, structural, foundation, electrical and control systems, piping/duct, architectural and HVAC design was provided for the new facility.

Construction was completed 25 months from contract signing. Plant constructed value exceeded \$250 million and achieved a five year performance milestone in 2003, producing more than six million metric tons of high quality HBI (93.5% metallization, 1.0 to 1.2% carbon).

PRINCIPAL FEATURES

- Structural design:
 - 100 mile high reduction furnace support structure
 - Reformer structure
 - Water treatment
 - Product handling and loadout (material handling bins, chutes, hoppers, etc)
- Piping/duct design (orthographics and isometrics):
 - Fuel gas to reformer burners
 - Diesel fuel to emergency generators
 - Combustion air to reformer
 - Process gas (refractory lined)
 - Hydraulic piping to briquetting machines
 - Process water to cooling tower and water treatment
- Architectural and HVAC design for a multi-story CCR building including:
 - MCC
 - Offices
 - Laboratories (physical, wet, electronics)
 - Main control room
 - Workshops
- Preparation of drawings in both English and Spanish

