

Project: Renewal of the First Pellets Line CVG Ferrominera Orinoco C.A. (FMO)



Project Synopsis

Entities Government	CVG Ferrominera Orinoco C.A. Ministry of Popular Power of Industries and Domestic Production		
Contractor Company	Undefined		
Objective	Increase and sustain estimated production by 2,700,000 tons of Pellets per year.		
Reach	Adapt the different areas that make up the First Line of Pellets. In this sense, it is important to mention that line I of Pellets Plant, presents numerous complications for the achievement of production, such as greater damage at the equipment level: hardening and lack of spare parts for the rest of the areas, which decreases the availability and reliability of the plant. Therefore, the execution of the corresponding annual scheduled maintenance stops since 2008, as stated above, has led to pronounced wear and tear of all its equipment and structures. In this regard, it is important to mention that since 2015 there has been a stop plan, however, the passing of time and non-execution of these, have led to the scope of repairs being resized in successive opportunities.		
Funding Source	Undefined	General Physical Advancement	
Start Date	Undefined	Financial Advancement	



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Flujograma Planta de Pellas

PELLETS PLANT - LINE I:

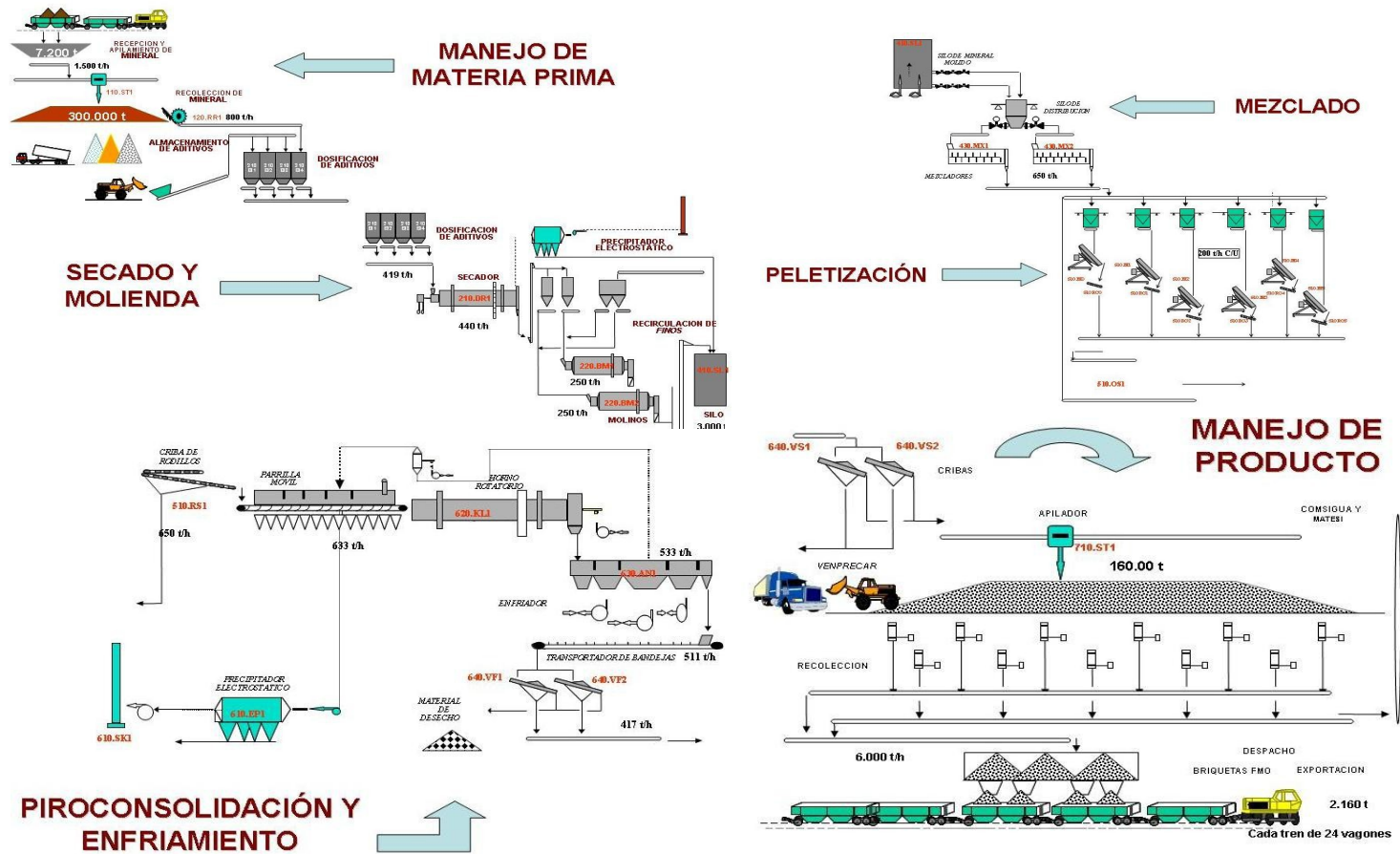
- DESIGNER:** KOBE STEEL LTD. (KSL)
- TECHNOLOGY:** Grill Oven Process (Allis Chalmers)
- INVESTMENT:** 380 millions dollars
- START OF OPERATION:** october of 1994.
- NOMINAL CAPACITY:** 3,3 millions tons/year, 330 days of operation. Equivalent to 10.000 t/day.
- PLANT DESIGN DATA:** Silica's expected rank: 0,5 ~ 1,2%.

INSTALLED CAPACITY EXPANSION – LINE I

- DESIGN:** KOBE STEEL LTD. (KSL)
- INVESTMENT:** 20,8 millones de dólares
- START OF OPERATION:** january of 2008
- NOMINAL CAPACITY:** 4,0 millions tons/year, 330 days of operation. Equivalent to 12.000 t/day.

Flujograma Planta de Pellas

GENERAL FLOWCHART OF THE PELLETS PLANT PRODUCTION PROCESS



Detalle de Actividades

INCREASE AND SUSTAIN ESTIMATED PRODUCTION BY 2,700,000 TONS OF PELLETS PER YEAR		
AREA	DESCRIPTION OF SYSTEM TO NORMALIZE	TECHNICAL SPECIFICATION REQUESTED
AREA 100 RECEPTION AND STACKING OF RAW MATERIAL	RECEPTION PIT	ACQUISITION AND TECHNOLOGICAL ADEQUACY OF THE MINERAL RECEPTION PIT. MANUFACTURE ACQUISITION AND INSTALLATION OF EQUIPMENT AND MATERIALS TO STANDARDIZE SHRINK SYSTEMS RECONSTRUCTION OF THE WALK OF THE UNLOADING AREA OF THE WAGONS ACQUISITION AND INSTALLATION AIR CANNONS IN THE CENTRAL HOPPERS.
	DEFLECTING FEEDER	INCREASE OF THE CAPACITY AND TECHNOLOGICAL FITNESS OF THE PLOWS IN A RANGE OF 1100 t/h to 1500 t/h ADAPTING THE DIMENSIONS OF THE EQUIPMENT TO THE CURRENT HOPPER
	MINERAL STACKER	THE ACQUISITION AND INSTALLATION OF A NEW ORE STACKER SHOULD BE CONSIDERED RADIO COMMUNICATION WITH THE CONTROL ROOM INCLUDE LANE RAILS
	SLEEVE FILTER	ACQUISITION AND INSTALLATION OF DUST COLLECTORS TO ACTIVATE 110BF1/2
	SAMPLER	ACQUISITION AND INSTALLATION OF A SAMPLER
	MINERAL RECOVERY	ACQUISITION AND INSTALLATION OF A NEW ORE RECUPERATOR SHOULD BE CONTEMPLATED RADIO COMMUNICATION WITH THE CONTROL ROOM
	TRANSFER CART	INSTALLATION OF A NEW TRANSFER CART, ADAPTED TO THE CART
	ADDITIVE HOPPER	MODERNIZATION AND COMMISSIONING OF THE ADDITIVE INDICATION SYSTEM _REPOWER OF ADDITIVE LOAD CHUTE AND TRANSPORT
	MAGNETIC SEPARATOR	ACQUISITION AND INSTALLATION OF THE MAGNETIC SEPARATOR.
	FOUR-WAY GATE	MODERNIZATION AND CHANGE OF THE ORE GATE DRIVE SYSTEM.

INCREASE AND SUSTAIN ESTIMATED PRODUCTION BY 2,700,000 TONS OF PELLETS PER YEAR

	ROTARY DRYER	ACQUISITION AND INSTALLATION OF A ROTARY DRYER WITH NEW TECHNOLOGY SHOULD BE CONTEMPLATED TWO-YEAR SPARE PARTS START-UP DISASSEMBLY OF THE DRYER IN EXISTING PELLETS PLANT
	DUST COLLECTOR	PERFORM MODERNIZATION OF THE DUST COLLECTOR SYSTEM IN THE DRYING AREA.
	HOIST	ACQUISITION AND INSTALLATION OF HOIST.
	MAIN ENGINES	MAINTENANCE SERVICE TO MAIN ENGINES.
AREA 200 DRYING AND GRINDING	ARTICULATED BAND FEEDER WITH BALANCE	REPOWERING THE MINERAL AND ADDITIVE DOSING SYSTEM TO THE DRYER ACQUISITION AND INSTALLATION OF THE DOSING SYSTEM TO MILLS WITH NEW TECHNOLOGY
	ANTI-CONTAMINANT SYSTEM	ACQUISITION AND INSTALLATION OF THE NECESSARY COMPONENTS TO INCREASE THE SUCTION CAPACITY IN THE SLEEVE FILTER.
	BALL MILL	MODERNIZATION OF THE FAN CONTROL SYSTEM ACQUISITION AND INSTALLATION OF COMPONENTS FOR BALL MILLS ROTATOR ON THE LOADING, UNLOADING, CROWNING SIDE LUBRICATION SYSTEM, INTERNAL SHIELDING PURCHASE OF SPARE PARTS
AREA 400 MIXED	MIXER	UPDATE OR MODERNIZE BLOWER SYSTEMS.
	BLOWER	ACQUISITION AND INSTALLATION OF MIXERS WITH NEW TECHNOLOGY AND DUST TREATMENT SYSTEMS

AREA 500 PELLETIZING	SCREENING OF ROLLERS AND PELLETIZING DISCS	ACQUISITION AND INSTALLATION OF CRIBA METAL DESIGN 7 PURCHASE OF SPARE PARTS REPOWERING PELLETIZING DISCS.
	MOBILE GRILL	ACQUISITION AND INSTALLATION OF COMPONENTS AND SPARE PARTS TO REPOWER THE MOBILE GRID
AREA 600 HARDENING AND COOLING	ROTARY OVEN	ACQUISITION AND INSTALLATION OF COMPONENTS AND SPARE PARTS TO REPLACE THE ROTARY FURNACE
	ANNULAR COOLER	ACQUISITION AND INSTALLATION OF COMPONENTS AND SPARE PARTS FOR THE COOLER
ÁREA 700 STACKING	STACKER	ACQUISITION AND INSTALLATION OF A NEW ORE STACKER SHOULD BE CONTEMPLATED RADIO COMMUNICATION WITH THE CONTROL ROOM INCLUDE LANE RAILS
PRODUCT	SAMPLER	SERVICE FOR THE ACQUISITION AND INSTALLATION OF A SAMPLER
	SLEEVE FILTER	MODERNIZE OR ADAPT THE DUST COLLECTOR SYSTEM
AREA 800	WATER PUMP	ACQUISITION AND INSTALLATION OF EQUIPMENT SYSTEMS FROM PROCESS SYSTEMS
	SEWAGE TREATMENT PLANT	RECOVER THE SYSTEM
	INDUSTRIAL AIR COMPRESSORS	ACQUISITION AND CHANGE OF 3 INDUSTRIAL AIR COMPRESSORS
AREA 1300	AIR COMPRESSOR INCLUDED AIR DRYER	ACQUISITION AND CHANGE OF 1 INSTRUMENTATION AIR COMPRESSORS.

Detalle de Actividades

INCREASE AND SUSTAIN ESTIMATED PRODUCTION BY 2,700,000 TONS OF PELLETS PER YEAR		
AREA 1400		MODERNIZATION AND CONDITIONING SERVICE OF THE FIRE CONTROL SYSTEM.
GENERAL	MUD SYSTEM PUMPS	ACQUISITION AND INSTALLATIONS OF MUD AND SINK SYSTEM PUMPS. ACQUISITION AND CHANGE OF MUD PIPES
	CONVEYOR TAPES.	PURCHASE OF ROLLERS AND REPLACEMENT TAPES.
CONTROL AND POWER SYSTEM	CONTROL	UPDATING THE PLANT CONTROL SYSTEM AND INSTALLING THE RE-CONSTRUCTION. ACQUISITION AND INSTALLATION FOR THE ADEQUACY OF LOCAL PELLETIZATION (BLP) AND HARDENING PANELS (KLP).
	VIDEO SYSTEM FOR PROCESS CONTROL	SUPPLY, MANUFACTURE AND COMMISSIONING OF VIDEO SYSTEMS FOR PROCESS CONTROL
	POWER BOXES AND UPS	PERFORM A PROCESS OF MODERNIZATION AND UPDATING OF THE DIFFERENT COMPONENTS OF MEDIUM AND HIGH VOLTAGE MEASUREMENT SYSTEMS, FOR THEIR RECOVERY
	MOTORS	ACQUISITION OF HIGH, MEDIUM AND LOW VOLTAGE ELECTRIC MOTORS.
	SCALES	SUPPLY OF EQUIPMENT FOR ADEQUACY SYSTEMS OF LOAD CELLS FOR AREA 500 WEIGHERS
INFRASTRUCTURE	ELECTRIC ROOMS	NORMALIZE THE CONDITIONS OF ELECTRICAL ROOMS. NORMALIZE VENTILATION AND AIR EXTRACTION SYSTEMS FROM BASEMENTS, BUILDINGS AND GALLERIES OF THE PLANT.
	COMPRESSOR ROOM	NORMALIZE AND CONDITION THE COMPRESSOR ROOM - CONSTRUCTION OF THE NEW THICKENER TANK DRAIN NETWORK. CONSTRUCTION OF DISCHARGE FOR THE LAGOON OF SEDIMENTATION IN MAIN CHANNEL. SUPPLY, MANUFACTURE AND ASSEMBLY OF LOAD ELEVATOR FOR MOBILE GRILL. RECONSTRUCTION OF BASES AND STRUCTURES OF TORRES SUPPORTS OF THE PLANT TAPES.



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AREA	DESCRIPTION OF SYSTEM TO NORMALIZE	TECHNICAL SPECIFICATION REQUESTED
FANS	NON-PROCESS FANS MEDIUM AND LARGE COMPLETE	RECOVERY AND ACQUISITION OF SPARE PARTS FROM NON-PROCESS FANS
	FULL SMALL NON-PROCESS FANS	ACQUISITION AND INSTALLATION OF EQUIPMENT AND SPARE PARTS OF NON-PROCESS FANS
	PROCESS FANS	ACQUISITION AND INSTALLATION OF EQUIPMENT AND SPARE PARTS OF AREA 600 PROCESS FANS
SECURITY	INTERCOM SYSTEM ON THE PLANT	