

The Second Direct Reduction Plant

Client

KOBE Steel Ltd, Japan

Scope of Work

Preliminary design
Detailed design
Shop drawings
Bill of quantities (for the piping package)

Location

Alexandria, Egypt

Types of Activities

Electrical
Instrumentation
Piping

KOBE Steel Ltd supplied the Second Direct Reduction Plant (SDRP) Project in Egypt on a turnkey basis. Owned by Alexandria National and Steel Company S.A.E (ANSDK), the plant is a duplicate of the First Direct Production Plant supplied in 1986.

ECG was awarded the design services for all the piping works of the SDRP which covers the core area and the rack yard. The piping design package included the piping route plan; steel structure arrangement plan; outline foundation and anchors plan; piping layouts arrangement drawings; piping isometrics; piping support drawings; operating support drawings; operating platform drawings; piping stress analysis and material take off for piping, supports, insulation, site painting and site welding.

The plant includes a MIDREX type iron manufacturing plant with an annual capacity of 830,000 tons (core area), a water treatment system and a material handling system. Based on improvement in available technology,

some modifications were included in the SDRP to improve production and maintenance performance from the original Direct Production Plant.

The plant is divided into three areas: the core area where the main process takes place comprises the furnace area, compressor area, reformer area and stack area; area for raw material (iron oxide) handling & finished product handling and rack yard area includes the overhead piping on the pipe rack within the Direct Reduction Plant battery limit, which consist mainly of utility fluid distribution pipes with large sizes up to 2,200 mm diameter, weighting approximately 900 tons and inter-connecting pipes between the water treatment area and the core area. Piping end points with other area or buildings are located in the vicinity of the pipe rack.

With a construction cost of US\$125,000,000, the plant was successfully commissioned and the first production was accomplished in September 1997.

