



## COMMENTARY

# THE TWO MILLION TON MILESTONE HADEED'S MODULE E SURPASSES 2.0 MTPY

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**L**ast year Hadeed's MIDREX® Module E accomplished a truly noteworthy feat by becoming the first ever single module DR plant to produce more than two million metric tons of DRI product in a single calendar year.

Hadeed's Module E at Al Jubail, Kingdom of Saudi Arabia was commissioned in late 2007 as a 1.76 million ton per year (Mtpy) combination plant, making both HDRI and CDRI. The plant is the newest of five DRI modules on site and incorporates the newest hot charging technologies available. By name plate capacity, Module E is one of the largest DRI facilities in the world, but its true production over the past few years has made it the largest annual producing plant to date.

We congratulate Hadeed and their operation and maintenance people through-



out their organization that have pushed the MIDREX® technology through optimum operation and minimizing unscheduled downtime.

This was an incredible milestone not only for Hadeed and its maintenance and operations staff, but for the entire industry as it has made rhetoric a reality. The idea of production at such a large scale from a single DR plant is no longer hypothetical.

The earliest DRI Plants built more than three to four decades ago were designed to produce nominally 400,000 to 600,000 tons per year. At this capacity multiple DRI modules were needed to match the capacity of even a small blast furnace (BF). At the same time, the technology of the era required multiple electric arc furnaces (EAFs) to match the capacity of even a comparably sized integrated steel mill. In the 1960's most EAFs were designed to tap 30 to 60 tons; typically producing 100,000 to 200,000 tons per year. Over the past few decades many things have changed.

A modern DRI Plant coupled with a modern EAF can now produce steel on both a quantity and quality basis than can replace conventional BE/BOF

integrated steelmaking operations. Today's modern EAFs can tap 150 tons and produce 1,500,000 tons per year when operating with 100% HDRI feed.

Using nominal values common for today's DRI and EAF processes, 1,500,000 tons of molten steel will require 1.75 million tons of DRI if no scrap or pig iron were used. If the same productivity values are scaled to a 2.0 Mtpy year HDRI Plant, the EAF capacity should be approximately 1.7 million tons.

Surpassing the two million ton per year milestone means that not only is it feasible to reliably produce a large consistent supply of virgin iron for EAF steelmaking, but it also shows that continued responsible scale up will no doubt make 2.5 Mtpy and larger DRI modules a reality as well.

One thing is certain, there has been and will continue to be growing interest for DRI products in EAF production. DRI products have shown their increasing value as virgin iron units to provide metallics for EAF steelmaking. Charging DRI as a supplement to scrap to dilute tramp elements in EAF steelmaking has allowed EAFs to produce high quality steels that compete with or replace those made by the conventional integrated steel mills. DRI products can supplement scrap at any quantity up to 100% of the charge. Larger DRI module sizes will help the EAF industry be more and more competitive as larger production capacity becomes reality. ■

