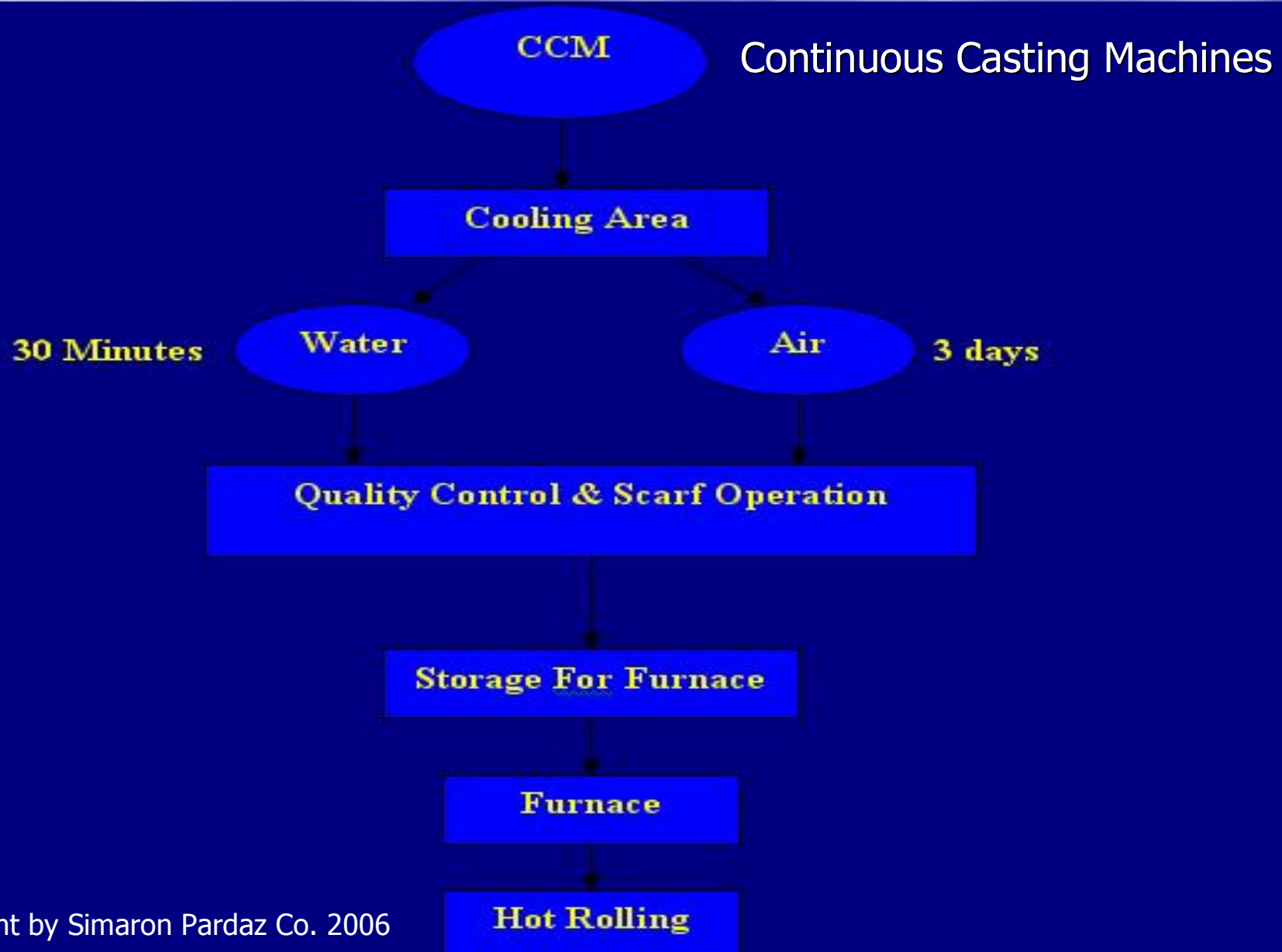


Evaluating Increasing Capacity of Steel Hot Rolling Line to 4.2 Million Ton per Year in Mobarakeh Steel Complex

What is currently being done there



First building model of the situation which the capacity was 3.8 Million Ton

The screenshot displays the ShowFlow simulation software interface. The main window shows a 3D perspective view of a hot rolling plant layout. The layout includes several key components labeled in large, bold, black text: "HOT ROLLING" at the top right, "FURNACE" in the upper middle, "STORAGE FOR FURNACE" below the furnace, "WATER COOLING" in the center, "CCM" (Continuous Casting Machine) at the bottom left, "AIR COLLING" at the bottom, and "SCARF OPERATION" at the bottom right. The plant is represented by a series of parallel lines and structures on a brown ground plane. In the top right corner, there is a "Simulation control" panel with a "Speed" dropdown set to "9", an "Animation" dropdown set to "Full", and buttons for "TLI", "User", "Step", and "STOP". The top left of the window shows the title "ShowFlow - [m28]" and a menu bar with "File", "Model", "Simulate", "Results", "View", "Settings", "Tools", "Window", and "Help". Below the menu bar is a toolbar with various icons. At the bottom left, there is a status bar with the text "Esc: Stop, 1..9: Speed". In the bottom center, there is a small clock window showing "00:00:00:12:..." and a clock face. At the bottom left, there is a data panel with four colored bars: blue for "Total production: 127.00", green for "Production Per Year: 1854200.00", cyan for "DAY: 0.50", and red for "exit: 503.00".

Simulation control

Speed: 9

Animation: Full

TLI User Step

STOP

Esc: Stop, 1..9: Speed

HOT ROLLING

FURNACE

STORAGE FOR FURNACE

WATER COOLING

CCM

AIR COLLING

SCARF OPERATION

00:00:00:12:...

Total production: 127.00

Production Per Year: 1854200.00

DAY: 0.50

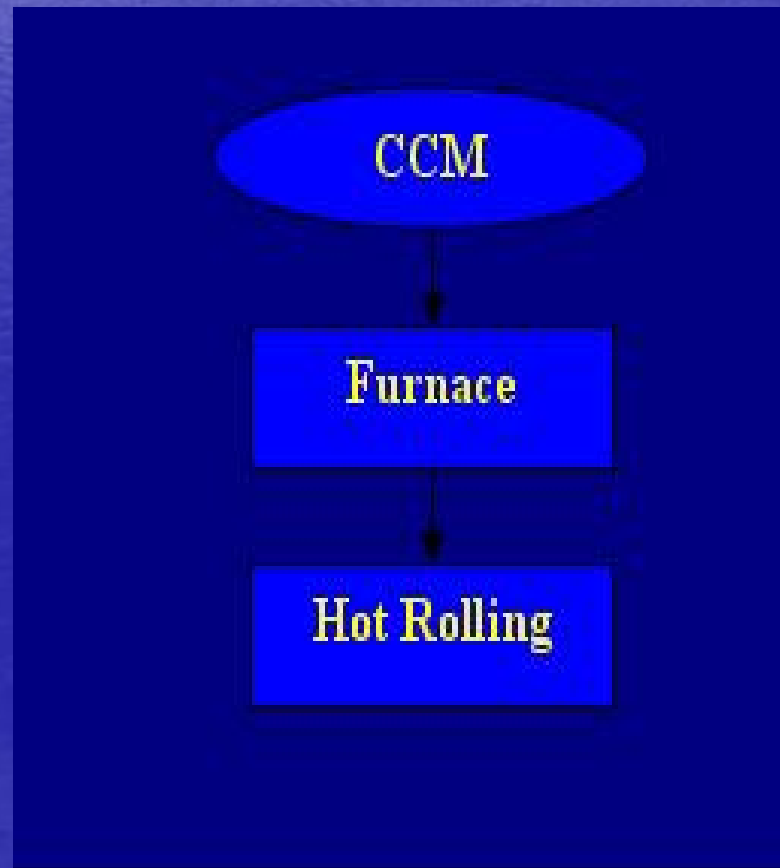
exit: 503.00

Finding Bottleneck

- The model shows the conveyor which is being used to transfer the slabs to warehouse of furnace is bottleneck
- First the model get evaluated the impact of adding a parallel conveyor
- But the warehouse of furnace get bottleneck & capacity does not get increased

Hot Charge New Technology

- By use of better quality of slabs there is no need to cool down the slabs & then again making them hot for environment temperature.



Advantages of Hot Charge

- Increasing the total capacity to 4.2 Million Ton
- Decreasing the work in process
- Avoid to loosing the temperature
- Energy Saving

Finally the required facilities
& the layout for the Hot
Charge Technology get
evaluated with Simulation
model to get 4.2 Million Ton
per year capacity