CASE STUDY:

EXCESSIVE WEAR OF HEARTH BOTTOM REFRACTORIES

EQUIPMENT

- Blast Furnace Hearth Design

PROCESS

1. Identify the root cause of the problem
2. Develop and propose technical solutions
3. Evaluate all technical solutions
4. Develop an implementation plan
5. Follow up on implemented solution

PROBLEM

- The diagnostic result indicated that the hearth bottom refractory had worn excessively within 2 years. A solution was required to slow the rate of wear and help the customer achieve their target reline date.

PROPOSED SOLUTIONS

- Charge titanium ore (Ilmenite)
- Add additional cooling
- Improve cooling system monitoring
- Implement refractory wear monitoring

IMPLEMENTED ACTIONS:

- Model and install cigar coolers to the hearth bottom
- Add instrumentation to improve the cooling system monitoring (flow meters and temperature sensors).
- Develop alarm strategy to react to increases in refractory temperatures.

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