Monalco Problem Statement [Mandana Hajizadehmotlagh]

How should Monalco Mining company reduce ore crusher annual maintenance expenditure by at least 20% for the next year by reducing manufacturer's maintenance events?

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1 Context

Monalco Mining, the world's largest iron ore mining company, recently upgraded its ore crushers to new models with high maintenance costs. Due to high iron supply, the price of iron has dropped from $110 to $55 per ton which is close to the break-even value of $50/ton. Management has requested cutting the annual maintenance cost to accommodate this price drop. Preventing excess wear on ore crushers and reducing the number of required maintenance orders can cut costs by at least 20%.

2 Criteria for success

Annual ore crusher maintenance expenditure will be reduced by at least 20% for 2019.

3 Scope of solution space

The number of maintenance events by the equipment manufacturer will be reduced to drop the maintenance cost by 20%. Specifically, excess wear to ore crushers will be prevented to reduce the frequency of required maintenance by the manufacturer.

4 Constraints within solution space

The reliability engineering team might disagree with reducing the maintenance events.

The maintenance events can't be cut more than the recommended OEM limit of one maintenance event per 50,000 tons of iron ore processed.

5 Stakeholders to provide key insight

Chanel Adams - Reliability Engineer
Jonas Richards - Asset Integrity Manager
Bruce Banner - Maintenance SME
Jane Steere - Principal Maintenance
Fargo Williams - Change Manager
Tara Starr - Maintenance SME
Chris Hui - Team Lead

6 Key data sources

Data historian: amount of iron processed by the ore crushers.

Ellipse maintenance database: old work orders for maintenance.

SAP maintenance database: recent work orders raised for maintenance.

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