Modernization of Furnace Tending Machines

Overview of Long Travel Trolley upgrade

ANTI-COLLISION SYSTEM
- Upgrade for compliance to the last standards for enhanced safety

CONTROL SYSTEM UPGRADE
- Electrical refit to manage equipment obsolescence
- Latest control and PLC systems, HMI and Wifi for remote maintenance, performance upgrade, cables and connections, reduction, improved flexibility and networking capabilities, and increased reliability

MAINTENANCE AND RENEWABLES
Multiple levels of services and overhauling to improve asset utilisation, reduce costs and use capital more efficiently:
- FTA tool servicing
- Pressure filtration unit repair
- Compressor servicing
- Other mechanical and electrical equipment maintenance on demand

AUXILIARY EQUIPMENT DEDICATED TO ABF MAINTENANCE
- New brushing machine to optimize cleaning
- Fluewall straightener to keep pits geometry
- Demolition grab with collecting bin to ease and fast wall demolition
- Fluewall lifting beam to ease and fast maintenance

CUSTOMIZED UPGRADES ON DEMAND
- Crane heightening to meet production requirements
- Varactor installation on the Assembly to get a more accurate and smooth motion
- Laser positioning assistance to optimize cycle time
- Hopper continuous level monitoring to enhance operation management
- Work availability rate calculation

AUXILIARY HOISTS
- Increased lifting capacity to meet production requirements

CABLE CHAINS
- New plastic chains to replace existing steel chain:
  - Easier maintenance
  - OPEX optimization

LONG-TRAVEL MOTION
- Upgrade to VFD to control speed and protect mechanical equipment
- Increased speed to meet production requirements
- New braking system to reduce maintenance costs
- Widened wheels to compensate building deformation

The most valuable alternatives to valorize your existing asset as an alternative to its replacement

- Optimize productivity and costs
- Extend the lifetime of your Furnace Tending Machine

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Overview of Tools’ Trolley upgrade

FILLING
- Lifting unit modernization with slack rope compensation to reduce operating and maintenance costs
- Sleeves modernization with new dust extraction sleeves to improve both operator’s visibility and tool reliability
- Proportional valves to enhance dosing of the filling product and to get regular packing coke flow
- Dual filling pipe to improve cycle time
- Tool tilting limitation system to limit tool damages

REMOTE-CONTROLLER
- A wireless communication tool designed to operate any crane from the ground
- Ease of mobility for the operator to increase operation flexibility and safety

AIR CONDITIONING
- New A/C kits for compliance with the last environmental regulations and gas obsolescence
- New semi-hermetic compressor to reduce maintenance costs
- A/C booster to meet HSEQ requirements

INTELLIGENT SOLUTIONS
- Process safety modules:
  - Communication between FTA and control room
  - Skill2perf module to adapt your crane configuration to operator’s skills
  - Crane automation modules:
    - Transfer & cycles for optimized trajectory to avoid contact with furnace equipment
- Crane modernization to improve performance and increase safety

SMARTCRANE
Through remote data monitoring, Fives’ SMARTCrane service allows to monitor the performance of your crane fleet in real time:
- Optimization of operations by analyzing past operational data
- Real-time visibility through remote monitoring
- Predict danger-points on specific functions

WINCHES, HOISTS AND PULLEY TACKLE
- Over-speed system
- Anti-overlapping system
- Balanced lifting beam
- New generation brakes to increase safety and reduce maintenance costs
- Increased lifting capacity to meet production requirements

CODE BENEFITS
- Improve Performance
- Increase Reliability and maintenance
- Process evolution/creeping
- Increase Safety and Ergonomics

GRAB
- Self-tightening to increase safety and reduce maintenance costs
- Anode size-change analysis system to adapt equipment when creeping or process upgrading
- Eccentric guiding wheel to compensate wear over the life cycle in order to keep an efficient guiding
- Multi-format anode grab, a flexible tool to meet various anode geometries
- New generation guiding system to increase production flexibility and reduce maintenance costs
- Grab locking device in upper position to increase safety during maintenance operations
- New guiding mast with removable rail to reduce maintenance costs
- Pre-positioning system to optimize trajectory while avoiding FTA tool damages
- Tool tilting limitation system to limit tool damages

CROSS TRAVEL MOTION
- Upgrade to VFD to control speed and protect mechanisms
- Increased speed to meet production requirements
- New braking system to reduce maintenance costs

PNEUMATIC CIRCUIT
- Declogging modernisation to guarantee sucking performances at any time
- Increased sucking capacity to optimise cycle time
- Lifting modernisation with slack rope compensation to reduce operating and maintenance costs
- New upper elbow design to improve life span
- Tool tilting limitation system to limit tool damages

VISIO+ CABIN
- Advanced air control system
- New cabin structure to improve visibility
- Ergonomic seat for better operator comfort
- Terminal operator with simplified functions

CONCEPTS
- Code Benefits
- SMARTCRANE
- INTELLIGENT SOLUTIONS
- WINCHES, HOISTS AND PULLEY TACKLE
- CROSS TRAVEL MOTION
- AIR CONDITIONING
- GRAB