Potential Fatal Event: Flying Metal – Compressor Coupler

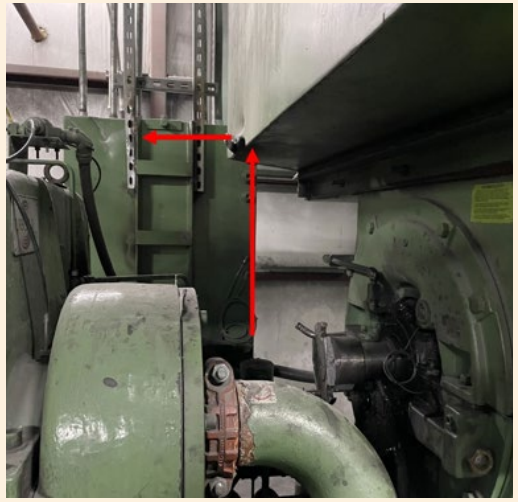
FREEPORT-McMoRan

PFE # 2023-5
Event ID # 20005175

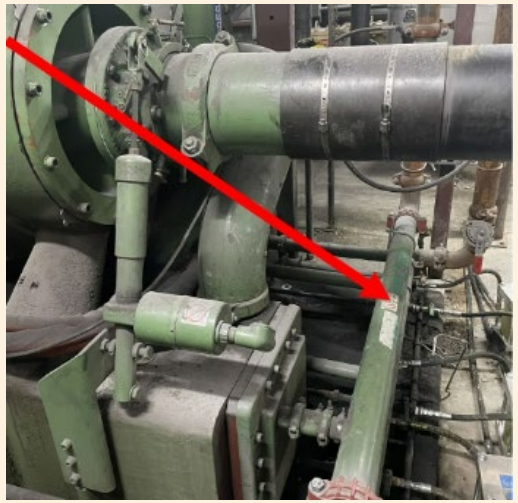
SAFE PRODUCTION MATTERS

Preliminary Incident Details	
Operation	Bagdad
Date / Time	March 14, 2023 / 11:14 a.m.
Type	Near Miss
Summary	Employees were troubleshooting a compressor due to surging issues. While testing the motor and compressor, one electrician was watching the protective relay from an adjacent room while another electrician and a mechanic were behind the control panel. When the compressor started and as the motor ramped up, the employees heard a loud clang and found the shaft with broken coupler on the ground nearby.
Fatal Risk	Uncontrolled Release of Energy
Risk Category	Actionable
Pre / Post Rating	Significant (3) Likely (3)
Absent / Insufficient Controls	• No Standard Operating Procedure in place • Failure to use Fatal Risk Management • Inadequate Job Risk Assessment
Applicable Policies / Procedures	• Barricading and Flagging
Employee Condition	No Injury
Contact	Chris Svenson, Manager-Health and Safety

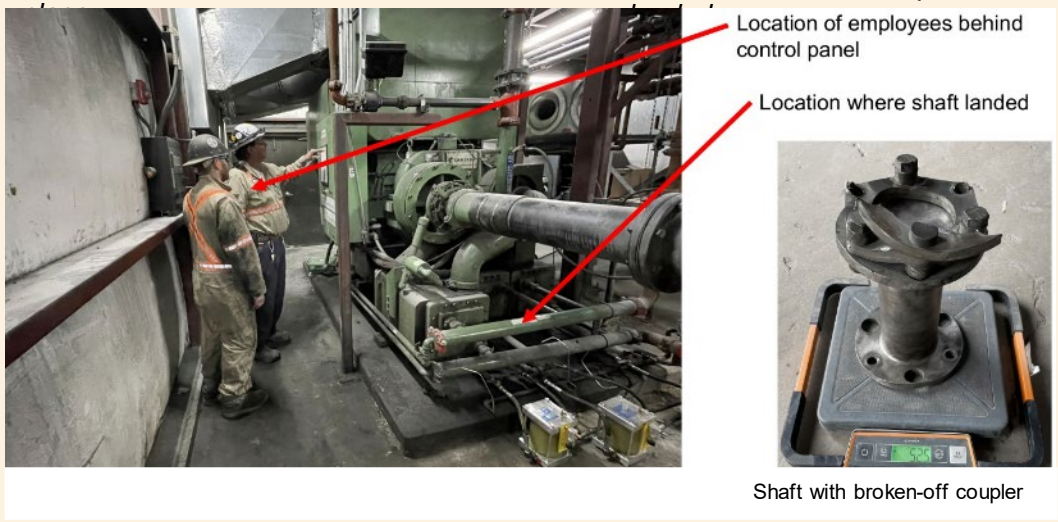
Photos / Links



- *The coupler's route as it flew out of*



- *Location where the coupler*



Potential Fatal Event Learnings: Flying Metal – Compressor Coupler

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Causal Factors

- Mechanic was inadequately trained and had no task-specific training.
- To uncouple compressor, mechanic disconnected the shaft on the compressor but left it connected to the motor side.

Action Items	Hierarchy of Controls
Relocate compressor room control panel to allow start-up from control room. This will eliminate the employee from having to be in the compressor room to start or stop equipment.	CA-1 Elimination/ Engineering
Explore use of camera-assisted positioning tool to prevent the need for employee to enter the compressor room to observe the equipment while it's running.	CA-2 Substitution/ Engineering
Create Standard Operating Procedure for this specific process that includes how to start, stop and troubleshoot equipment.	CA-3 Administrative
Train supervisors and employees on proper motor and compressor troubleshooting protocols. Senior supervisors will conduct a GAP analysis on what training might be necessary for the tasks they are expected to perform.	CA-4 Administrative

Failed Safeguards / Additional Learnings

- Supervisors will conduct weekly verification of JSAs and make sure FRMs are being reviewed for high-risk tasks before work begins.
- Senior supervisors will conduct monthly review of JSAs and FRM completion.
- Reinforce the use of emergency stop (E-stop) training.

Fatal Risk Management Insufficient Controls

Guards, Barriers and Barricades – INSUFFICIENT

- Are guards, barriers and barricades properly installed to protect personnel from uncontrolled energy release?
- Note about this incident: Guard was removed to troubleshoot equipment. Control panel acted as barrier, but this is not its intended use. No proper control was in place to safeguard employees when troubleshooting motor.

Hose Coupling Lock System – SUFFICIENT

Energy Isolation/LOTOTO – SUFFICIENT

Piping Hoses/Equipment Mechanical Integrity – SUFFICIENT

Relief Valves – SUFFICIENT

Tensioned Lines Management – SUFFICIENT

Pipe Management – SUFFICIENT

Tire Management – SUFFICIENT