Marcus Whitfield

Senior Chemical Process Engineer

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SUMMARY

Senior chemical process engineer with 8 years in olefins and refining units, covering unit monitoring, energy optimization and turnaround planning. Leads root cause analysis and debottleneck studies with Aspen HYSYS and PI Historian data, and has delivered over $12M in documented margin gains.

SKILLS

- **Aspen HYSYS**
- **PI Historian**
- **Root Cause Analysis**
- **Energy Optimization**
- **Turnaround Planning**
- **Management of Change**
- **Process Safety Management**
- **Heat Exchanger Fouling**
- **Microsoft Excel**
- **Mentoring**

EXPERIENCE

Senior Chemical Process Engineer 05/2023 - Present

Calcasieu Olefins Company Lake Charles, LA

Area engineer for the hot section of a 1.2-billion-pound-per-year ethylene cracker.

- Monitor 9 cracking furnaces daily and tune coil outlet temperatures, adding **$4.1M** a year in yield.
- Lead a debottleneck study of the quench water tower using Aspen HYSYS and 3 years of PI Historian data.
- Plan process scope for a 42-day turnaround, writing 160 work packages with maintenance planners.
- Mentor 2 process engineers and review their management of change packages and test run reports.

Chemical Process Engineer 08/2020 - 04/2023

Neches River Refining Port Arthur, TX

Unit engineer for a 70,000-barrel-per-day fluid catalytic cracking complex.

- Raised FCC gasoline yield **1.8 vol%** through a feed preheat and catalyst addition test run.
- Cut fired heater fuel gas 6% by adjusting excess oxygen targets and repairing 3 analyzers.
- Investigated 11 process upsets with root cause analysis and wrote corrective actions for unit management.
- Trained 25 board operators on new alarm limits and startup steps after a control system upgrade.

Process Engineer I 06/2018 - 07/2020

Neches River Refining Port Arthur, TX

Rotational program across the crude, hydrotreating and sulfur units.

- Calculated fouling factors for **40** crude preheat exchangers to schedule cleanings by lost duty.
- Updated 3 unit operating envelopes for process safety management (PSM) compliance.
- Compiled monthly energy and yield reports in Microsoft Excel for the technical services manager.

EDUCATION

Bachelor of Science 05/2018

Lamar University Beaumont, TX

Chemical Engineering

CERTIFICATES

Professional Engineer (PE)

Louisiana Professional Engineering and Land Surveying Board

09/2023