Fluid Catalytic Cracking (FCC)
delivering Predictable Results
Wood Group Mustang brings vast process plants experience to your project. Our process engineers and project managers average more than 20 years in the process industry, with extensive knowledge of all project execution aspects of the refining, chemicals, petrochemicals, and polymers industries. Our quality designs are backed by a strong support team and the latest in project control and 3D design tools.

Our proven track record of providing solutions that minimize expenditures and optimize production contributes significantly to our high level of repeat business. Our focus on the front-end ensures your project is executed successfully, on schedule and on budget.

**Fluid Catalytic Cracking (FCC) Technology**

Fluid Catalytic Cracking (FCC) technology involves feed nozzles, riser termination device, cyclones and the catalyst stripper. Each technology provider has unique designs for these components. Wood Group Mustang has worked with all of the major FCC Technology Providers and is familiar with their designs, design packages, proprietary equipment components and their unique technology delivery methods.

**FCC Equipment Fabricators and Suppliers**

There are a limited number of qualified fabricators and suppliers for FCC equipment components. Each of these fabricators have capabilities and limitations that need to be taken into consideration during the selection process. For example:

1. Do they have adequate engineering capabilities?
2. Do they have FEA capabilities?
3. Do they self-perform the fabrication?
4. Do they self-perform refractory installation?
5. Do they have PWHT and refractory curing facilities?
6. Do they have access to a waterway to allow barge shipment of large vessels?
7. Do they have a history of assembling complete vessels including all internals and what is their shop load relative to specific project schedule requirements?

Wood Group Mustang has worked with all of the FCC qualified fabricators and suppliers and is familiar with their engineering competencies, their shop strengths and weaknesses, barge loading capabilities, refractory installation capabilities and their shop load relative to a specific project schedule.
**FCC Specialty Construction Contractors**

There are a limited number of construction contractors that are qualified to execute FCC construction projects. Each of these contractors have capabilities and limitations that need to be considered. For example:

1. Are they limited to boilermaker work scope or can they act as the general contractor?
2. What are their scheduling capabilities, what are their turnaround qualifications?
3. Do they have adequate procurement and engineering capabilities to support their construction work scope?
4. Do they self perform refractory installation?
5. What are their capabilities to support the heavy lift and heavy haul studies?

Additionally the client’s contractor preferences need to be considered. Wood Group Mustang has worked with most of the FCC qualified construction contractors and is familiar with their construction capabilities, engineering and scheduling competences, refractory installation qualifications and ability to support heavy lift and heavy haul studies.

**Refractory Materials and Installation**

Refractory is a major element of all FCC components. Without proper selection, specification, testing and installation the process unit is risking a costly unscheduled unit shutdown. FCC vessels are designed with a hot wall (external insulation) or cold wall (internal insulating refractory). The internals that are exposed to catalyst erosion are protected with abrasion resistant refractory. The insulating refractory can be installed by casting, gunning (pneumatic application) or pneumatic ramming. The abrasion resistant refractory installation involves a very critical anchor system (hexmesh or equivalent). It is very important that all areas of refractory installation are examined carefully to ensure proper selection, specification, testing and installation methods are employed.

Wood Group Mustang has worked with FCC refractory specialist consultants and is familiar with the critical refractory issues associated with FCC component applications.
Wood Group Mustang FCC History and Expertise

Wood Group Mustang has substantial experience with FCC projects and provides significant value to our clients. We have established our reputation by successfully executing more than 60 FCC projects within the past eight years.

We have a core team solely focused on FCC projects. As a result, our team has excellent working relationships with FCC specialty fabricators, construction contractors, technology providers and component & material suppliers.

This familiarity with all of the elements unique to FCC units allows us to work with preliminary information and develop early designs and component configurations that permit timely feasibility studies and early rough order of magnitude cost estimates. These relationships allow for shorter procurement cycles on long delivery components.

If the project involves increased capacity/conversion we have process design resources that can perform evaluations to identify the revamp scope in the raw oil charge and product recovery sections of the facility.
FCCU projects vary in scope, but primarily involve the following elements:

- Licensor Technology Evaluation
- Reactor Vessel
- Reactor Cyclones
- Riser Termination Device
- Feed Nozzles (Licensor proprietary design)
- Catalyst Stripper
- Catalyst Standpipes and associated slide valves and expansion joints
- Regenerator Vessel
- Regenerator Cyclones
- Regenerator Air Grid
- Main Air Blower
- Air Pre-Heater
- Orifice Chamber
- Flue Gas Slide Valve
- Flue Gas Expansion Joint(s)
- CO Boiler or Flue Gas Cooler
- SCR
- Wet Gas Scrubber
- Wet Gas Compressor
- Main Fractionator
- Slurry Pumps (Main Fractionator Bottoms Pumps)
- Third Stage Separators

The various FCC projects Wood Group Mustang has executed included all of the above to some degree depending on the specific client requirements for each project.
Experience The Difference

Wood Group Mustang has established a global reputation for quality engineering design, project management, procurement and inspection services. We take your project from concept to completion and beyond. Our focus is serving all segments of the worldwide oil and gas industry - upstream, midstream, pipelines, downstream, and automation and control.

Our philosophy is simple: deliver the highest quality, highest value project on time, within budget, with consistency no matter where it is located, and with no surprises. Wood Group Mustang’s energy and innovation has turned that philosophical goal into an industry reputation.

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Mexico

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Peru
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Europe & Africa
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