



## CCR™ Platforming™ Regenerator Revamps

### Equipment and Systems

#### CCR Platforming experience

As the market demand for gasoline has changed, so have UOP's CCR Platforming units. These state-of-the-art units are designed to use today's more active, higher yield catalysts. Compared to those designed 20 to 30 years ago, modern units typically operate at higher capacity, lower pressure, and higher severity. A key component of the CCR Platforming unit is the catalyst regenerator.

#### Evolution of the CCR Regenerator

Over the years, UOP has gained a wealth of experience in Platforming technology by close monitoring of our 600+ operating units. The design of the CCR regenerator section has evolved from the original atmospheric design, to the pressurized design, to the current state-of-the-art CycleMax™ regenerator. The CycleMax regenerator facilitates increased coke burning while maximizing performance and catalyst life. This evolution has been made possible by UOP's continuing dedication to catalyst regeneration and catalyst transfer technology, enhanced by experience gained from 150+ operating CCR Platforming units.

#### CCR Regenerator revamps

During this same period, UOP has been actively involved in the revamp engineering of more than 50 earlier CCR Platforming units. UOP's yield estimating, process modeling capability, and equipment expertise provide UOP with the unique ability to evaluate existing equipment at new process conditions to determine the most economical solution to meet the client's processing objectives. UOP's CCR Platforming unit revamps have been successful in increasing throughput up to 50% and/or raising product octane as high as six numbers.

#### One low-cost revamp solution

UOP designs CCR regenerator revamps to meet both budget and processing needs. One of UOP's low-cost solutions provides for a coke-burn capacity increase typically of 10 to 50%, often at a cost only a little more than in-kind screens replacement. This option is particularly attractive to the refiner that needs new



regeneration screens due to age and condition, and that could benefit from a moderate increase in capacity.

Optimization of CCR regenerator internals offers rapid payback:

- Optimized process performance by redesigning the reactor internals for enhanced operation
- Increased CCR Platforming regenerator coke-burn capacity and catalyst circulation rate
- Increased CCR Platforming unit throughput and/or severity
- Improved product quality and octane number
- Increased flexibility in recovering from process upsets
- Quality equipment delivered on time
- UOP support from start (process study) to finish (unit is on-stream)



Special techniques are employed in UOP's fabrication facilities to ensure that CCR regenerator screens meet UOP's stringent specifications.

### UOP's revamp package

UOP offers a comprehensive package combining revamp engineering and equipment supply through UOP's Modular and Equipment Technology group.

UOP's revamp package includes:

- **Process study** of existing and new operations
- **Mechanical design review** of existing configuration
- **New design** includes UOP's detailed Schedule A specifications and drawing package
- **Equipment supply** includes new inner and outer screens, and mounting hardware
- **Project kick-off meeting** with both the purchaser and UOP's fabrication partner
- **Shop and site inspection** services to ensure quality fabrication and installation
- **Product data book** offers complete project documentation, including as-built drawings and quality documents
- **Project management** by UOP from start to finish

### For more information

For more information, contact your local UOP representative or our Des Plaines sales office:

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