# CASE HISTORY

Refining

## RECORDED BENEFITS

- Improved predictability of process reliability
- Increased cooling water system performance
- Millions of dollars in increased refinery revenue
- Refinery reliability department able to trend operation and reliability improvements

# Innovative Approach Improves Refinery Performance

## HexEval Heat Exchanger Predictive Modeling

### Improvement Opportunity

A large, North American refinery maintains hundreds of process heat exchangers. Due to the extensive size of the facility and the multiple process design and operational parameters, the maintenance schedule became very complex and unwieldy. The traditional method used to rank the exchangers by most critical need of maintenance and/or replacement was not effective in identifying critical exchangers that required immediate attention. The plant desired to implement a more reliable process to achieve improved plant operations.

### Recommended Solution

A team of Solenis consultants utilized HexEval, a predictive modeling tool developed by Solenis, to catalogue every heat exchanger incorporating extensive design and operational data. This modeling tool allowed cooling waterside flow velocities and hydrothermal stress coefficients to be determined and ranked. As a result, a focused list of nearly 70 problematic heat exchangers was developed which were the highest risk from cooling waterside performance-related problems.

### Results Achieved

The innovative program has led to more efficient process heat exchanger operation. The continuation of this program approach in conjunction with excellent cooling water treatment performance and more exacting refinery maintenance has led to millions of dollars in gained revenue associated with improved plant performance, effective maintenance scheduling and reliability of critical equipment.

HexEval improves heat exchanger maintenance