Crude Unit Overhead
Automated Corrosion Control
• Start with ovhd water analysis
Its all about

90/10

“Corrosion Window”

90% of the corrosion in a crude overhead circuit occurs in 10% of the time
Overhead Corrosion Automation

Undetected excursions result in annual exchanger failures.

KPI in spec 100% of time?

KPI Cl 25ppm
Undetected excursions resulting in annual exchanger failures

KPI CI 25ppm
Alpha analyzer data
5-Months

NALCO Analyzer Alpha Test Data

Date & Time
Weekend Upset

NALCO Analyzer Beta Test Data

Estimated 2-6 mils lost over 2 days

Saturday evenings upset takes until Monday midnight to correct

Data not captured in operators log
Crude Related Transient Corrosion Excursion Identified

Data allows troubleshooting ... 90/10
Impact of Continuous Monitoring on Corrosion

- In manual mode: with more frequent data, corrosion was reduced by 60%.
Automation Project Objectives

Use Analyzer for continuous monitoring and **REAL TIME** process chemical control

Neutralizer based on pH

Filmer based on iron

Control caustic in crude based on chloride, or customer-set limit

**Targets**
- pH: 6.5
- Chloride: 25 ppm
- Iron: 0.5 ppm

Nalco On-Line Analyzer
Anticipated Value

- Improved Reliability
- Reduce Total Cost Operation
- Improved corrosion performance
- True picture of actual unit performance
- In-depth interrogation of upset conditions
- Real time caustic/chloride control
Anticipated Value

- Predictive analysis of chloride based on crude diet and rates
- Improved control (tighter control of KPI’s)
- Better understanding of system limits
- Improved control and safer operation at the limits
- 24/7/365 reporting thru real time Dashboard