



RECONNECT

SYMPOSIUM 2022

KNOWLEDGE • OPTIMIZATION • INNOVATION

Operations and Inspections Services

Advance Business line

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Agenda

- Introduction
- Process Services – Technology support
- Mechanical Services
- Replacement of Safurex® HP Equipment
- Spares parts
- Development products and materials
- Concluding remarks

Introduction

- Stamicarbon Advance Services Team
- Leveraging on vast experiences build-up over 75 years
- Open innovation with several strategic partners

Stamcarbon Advance Services Team

- Process
- Process Control
- Digital services
- Mechanical
- Materials & Corrosion
- Inspection and Welding
- Project Managers
- Spare Part Team
- Logistics



Process Services – Technology support

- Troubleshooting and Plant Surveys.
- Products.
- Process Trainings.
- Digital Services.

Process Trouble shooting and Plant Surveys

- Troubleshooting on:
 - Process upsets,
 - Plant performance,
 - Emission reductions,
- Plant performance assessments.



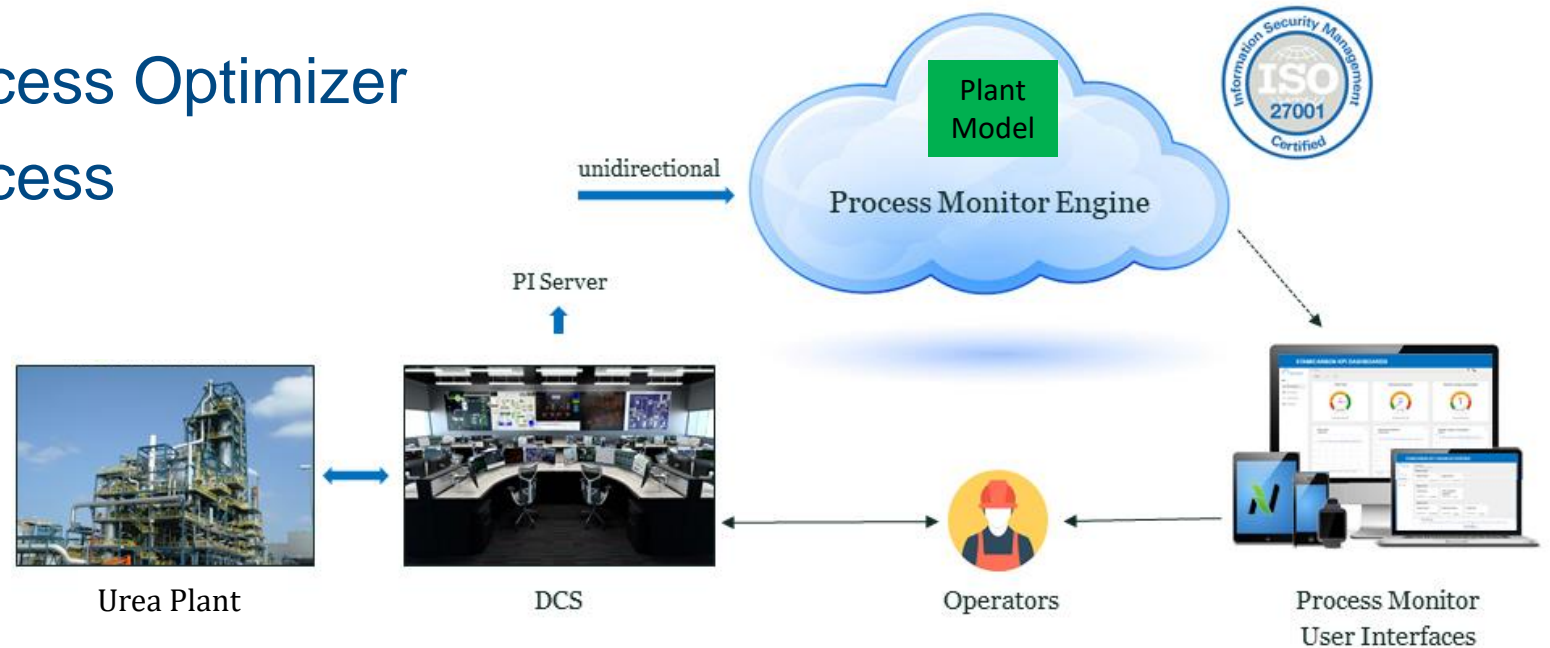
Process Products and Trainings

- Products:
 - Hardware.
 - Service Agreements.
- Process trainings:
 - Theoretical trainings.
 - Practical – on site trainings.



Digital Services

- STAMI Digital™ Process Monitor
- Advance Consult™
- STAMI Digital™ Process Optimizer
- STAMI Digital™ Process Simulator (OTS)

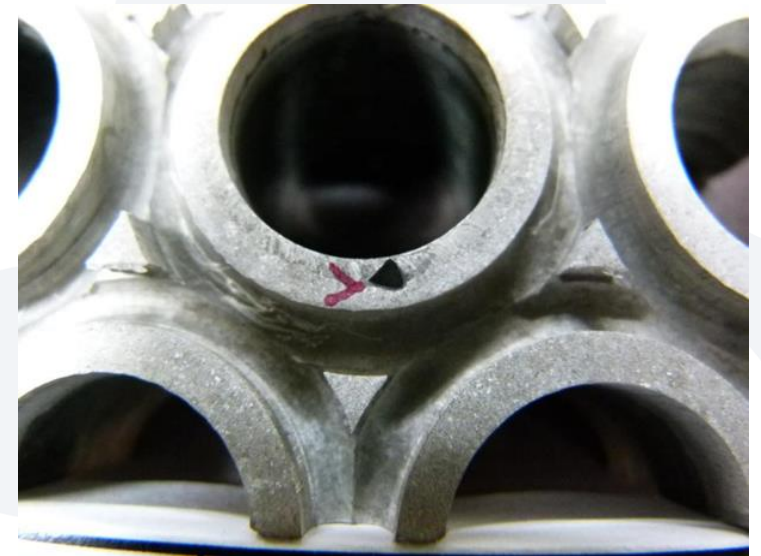


Mechanical Services

- Inspection services/ Troubleshooting/ Repairs.
- Life-Time Assessment studies.
- Life-Time Extension Studies.
- Mechanical and Corrosion Trainings.

Mechanical Inspection Services

- Quality Control during manufacturing on:
 - Critical HP Urea Equipment
 - Piping and Valves
 - LP and downstream equipment



Corrosion inspections during planned and unplanned Turnarounds

- Identifying corrosion damages
- Advice on remaining lifetime
- Advice on Operations optimization
- Prevent unplanned shutdowns
- Opportunity to improve technology and reliability



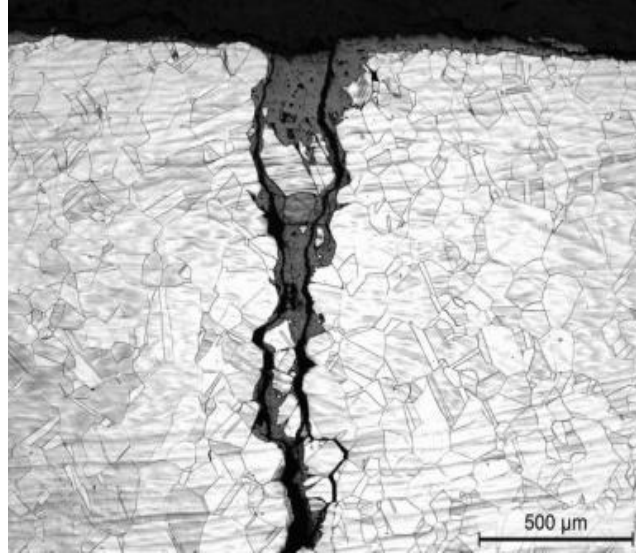
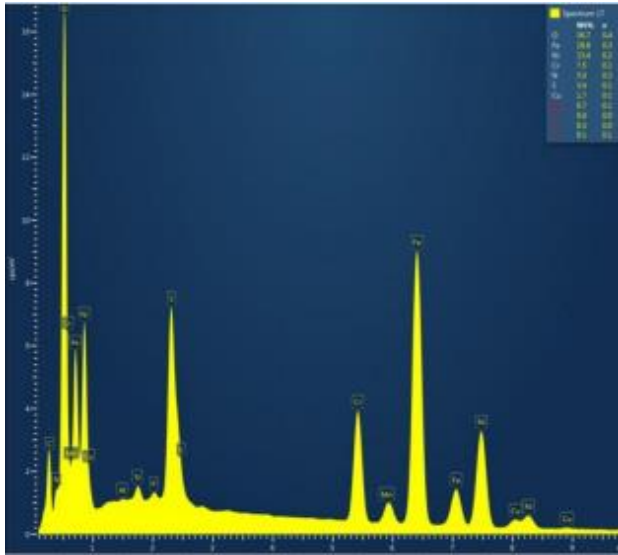
Mechanical Troubleshooting and In-Situ repairs



- Support on upcoming issues
- Preparing repair procedures
- Relining of urea reactors
- Supervision of repairs
 - Tubesheets
 - Pressure shell
 - Heat exchanger tube plugging
- 24/7 availability and fast response for all UREA Plants/ technologies

Mechanical Root Cause Analysis / Fitness For Service

- Metallographic investigations
- Corrosion testing
- Defect assessment and Finite Element Analysis (FEA)



Life-Time Assessment and Extension studies

- Critical urea equipment and downstream equipment
- Piping systems
- Urea and ammonia plants
- Ammonia tanks



Mechanical Training

- Safurex[®] welding training
- Mechanical and corrosion training
- Training in Manufacturing of HP Equipment
- Custom made



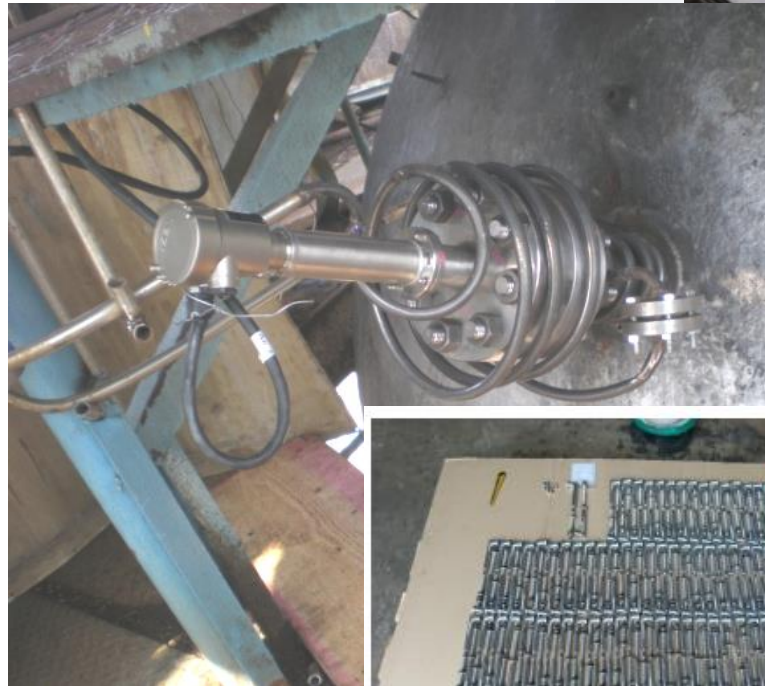
Replacement HP Equipment

- Stamicarbon support replacement project
- Opportunity to upgrade equipment to latest technology
- Debottlenecking
- Supervision installation and commissioning



Delivery of materials and spares

- Materials for relining jobs
- Welding consumables
- Liquid dividers
- Piping spools
- J-bolts, trays
- (control) valves
- Radar, N/C meters
- LDS systems



New developments

- Premium grades of Safurex ®
- Improved welding technologies
- Improved design liquid dividers
- Improved design (control) valves
- Improved inspection technologies
- Remote inspections



Concluding remarks

- Advance Service Team
 - Provides full package of services to our customers
 - Plant optimization by
 - Improved process operations
 - Mechanical support
 - Leveraging on vast experiences and know-how
 - Highly motivated -, proactive - and flexible team of specialists

Thank you!