



api raffineria di ancona and ABB working together

Since 2006 apiso service has operated as the maintenance department of the refinery as a result of a complete merge of refinery/apiso structure. The merge was executed due to clear mutual understanding and sharing of refinery business objectives.

api raffineria di ancona and ABB – THINKING MAINTENANCE

api raffineria di ancona is an Italian oil and gas refinery company that functions in Falconara Marittima, Italy. It refines oil into numerous different products from LPG (Liquefied Petroleum Gas) to bitumen and to visbreaking TAR. api refinery is also one of the largest privately owned oil companies in Italy and belongs to the group of Italy's biggest companies in general.

Joint Venture apiso between api raffineria di ancona and ABB

The co-operation between ABB and api started in 1999 when the Full Service contract supplied by apiso service company began. The two companies had decided to work through a Joint Venture called apiso service, owned by ABB and api refinery with the share of ownership 50% each.

apiso, a small and flexible company with access to high quality skilled professionals from shareholders, started providing Maintenance Global Services to api refinery for both refinery cycle and IGCC (Integrated Gasification Combined Cycle) plant. The contract type was Maintenance Full Service Contract and its scope was to provide services of maintenance and modifications.

api's IGCC power plant produces energy by TAR in a process licensed by Chevron Texaco, now GE (General Electric). It is able to produce 280 MW of electric power.

The partnership objectives were (i) to increase plant availability via reliability improvement and (ii) to reduce maintenance costs.

The Services Provided by the Joint Venture apiso:

- Reliability Engineering
- Preventive & Predictive Maintenance: RCM (Reliability Centered Maintenance) approach
- Turn Around Management
- Corrective Maintenance: repairs and RCA (Root Cause Analysis) implementation
- Proactive Maintenance
- Inspections Management: RBI (Reliability Based Inspections) approach
- Production Support
- Spare parts Warehouse Management
- KPI's (Key Performance Indicators) definition and calculation: Availability, MTBF (Mean Time Between Failures), MTTR (Mean Time To Repair)



api refinery site in Falconara Marittima, Italy.

ABB Services



Plant Performance Highlights

Refinery Cycle:

- Availability improvement along the years
- Significant increase of MTBF in 3 categories of equipments (pumps, electric motors, airfins)
- Strong decrease (from 18% to 8%) of unexpected/unplanned tasks during Turn Around in 4 years
- Environment analyzers availability increased and maintained above 99,7%

IGCC Cycle:

- Plant availability around 90%
- Process analyzers availability increased and maintained above 99,6%

Whole site:

- SRUs operating at designed efficiency
- Environmental protection at high performance
- Soil contamination drastically reduced in the last years

The Guiding Principles of Co-operation

- **Efficiency**
- **Reliability**
 - ◆ Safety/environment protection
 - ◆ Quality
 - ◆ Sustainability

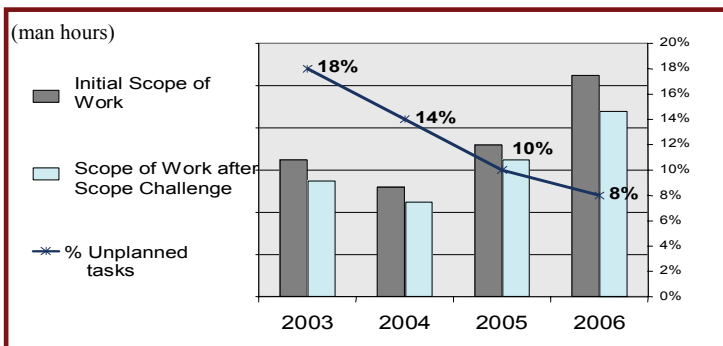
Achieving Good Results:

MEAN TIME BETWEEN FAILURES

MTBF (%)	2002	2003	2004	2005	2006
Centrifugal Pumps	100	133	126	137	153
Airfins	-	-	100	108	139
Electric Motors	-	-	-	100	120

: Note: MTBF= 100 at first meaningful year of data collection

TURN AROUND MANAGEMENT RESULTS



CUSTOMER SATISFACTION

