

TECHNICAL SERVICES PORTFOLIO

www.ffc.com.pk



“

Fauji Fertilizer Company incorporated in 1978, has experience in operating three highly efficient ammonia and urea plants. Demonstrated urea production capacity is nearly 2.5 million tons per annum. Service & Capacity factors surpass international standards. Process licensors regard FFC plants as role model for their clients from all over the world.

FFC also holds pride in winning various international awards in production and safety. FFC is ISO 9001, ISO 14001, OHSAS 18001 and IFA Protect and Sustain Certified.. Based on our expertise, we are offering various services to petrochemical plants worldwide.

”

PREAMBLE

FFC has over four decades of experience and our technical manpower has developed a high degree of expertise. We offer miscellaneous services in petrochemical and oil & gas sectors. These include studies for plant optimization which can boost a plant's annual production through Capacity & Service Factors' improvement, energy conservation, & turnaround cycle optimization. As a testament of our operational skills, we can quote various fertilizer plants that we have commissioned around the world in Far East and Middle East under sub-contracts with well-known EPC Contractors (Saipem, Mitsubishi, Techint).

We also offer specialist maintenance and inspection services during annual plant shutdowns, HAZOP reviews, equipment replacement plans, and troubleshooting of plant problems. Technical training is also our strong area. We offer standard and customized courses for skill enhancement of your team. Our Goth Machhi training center caters to training needs of major industries in the country.

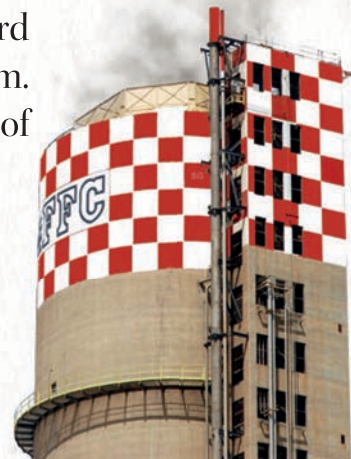


TABLE OF CONTENTS

1	Start-up and Commissioning	01
2	Optimization and Efficiency Improvement	02
3	Turnaround and Maintenance Services	03
4	Training Services	05
5	Engineering Services	06
6	Health, Safety & Environment (HSE)	07
7	Specialized Services: IT and SAP	08
8	Specialized Services: Wind Power Plants	09

START-UP & COMMISSIONING

FFC takes pride in spearheading the commissioning of many major fertilizer projects worldwide in conjunction with well know EPC Contractors like Saipem, Mitsubishi, etc. We have successfully commissioned plants in many countries in North Africa, Middle East and Far East Asia. Our commissioning teams have high expertise in following areas:

1

IMPLEMENTATION OF SAFE OPERATIONS
& GENERAL WORK PROCEDURES

2

PERFORMANCE TEST PROTOCOLS & EVALUATIONS

3

CATALYST LOADING & ACTIVATION

4

CONTROL LOOP TESTING & VERIFICATION OF PLANT
SAFETY INTERLOCKS

5

BOILERS BOIL OUT & REFRACTORY DRY OUT

6

BLOWING, FLUSHING, CHEMICAL CLEANING /
DEGREASING OF PIPING

7

OVER SPEED TEST OF MACHINES

8

PLANT START UP & RESOLUTION OF INITIAL 'TEETHING'
PROBLEMS

OPTIMIZATION AND EFFICIENCY IMPROVEMENT

FFC operates 03 fertilizer plants with a cumulative capacity of 6200 MTPD. Being in business since 04 decades and having won many international awards and accolades, our plants are quoted as 'Role Models' by our Ammonia and Urea licensors (Haldor Topsoe A/S, Denmark and Saipem S.p.A, Italy). Our Plant's Capacity Factor and Service Factor are one of best in the world. We are now offering services to boost the production and energy efficiency of fertilizer plants through :

1

PROCESS QUALITY CONTROL & BENCHMARK SURVEY

2

IDENTIFICATION OF LOAD LIMITING FACTORS

3

PLANT ENERGY AUDITS. ENERGY CONSERVATION MEASURES WITH IMPACT OF LOSSES, INEFFICIENCIES & LEAKAGES

4

TECHNICAL MONITORING PROGRAM (TMP)

5

PERFORMANCE OF CARBON & NITROGEN BALANCE FOR FERTILIZER PLANTS TO IDENTIFY VENT LOSSES AND VERIFY FLOW METERS ACCURACY

6

CONDUCTING STEAM & CONDENSATE BALANCE TO IDENTIFY ENERGY DRAINS

7

AUDIT OF PASSING STEAM TRAPS USING PORTABLE EQUIPMENT

TURNAROUND AND MAINTENANCE SERVICES

FFC is one of world's few fertilizer companies who have highly optimized their plants turnaround cycle. We now have a planned T/A cycle of above 2 years with an outage of less than a month. We offer clients following turnaround services :



INSPECTION SERVICES

1. Inspection of high pressure vessels, columns, and heat exchangers
2. Non-destructive Flaw Identification (Magnetic-particle Testing, Ultrasonic Testing, Dye-penetrant Testing, and Radiographic Testing)
3. Leakage Detection (Ammonia Leak Test, Helium Leak Test)
4. Corrosion Monitoring (Hydrogen Attack Survey, Cathodic Protection, and Thickness monitoring)
5. Infra-red Thermography analysis of high temperature equipment & refractory



MAINTENANCE SERVICES (MECH, E&I)

Our Plant Maintenance team has gained decades of experience by in-house repairs and overhaul of critical equipment and machines, reducing dependence on OEM's. Scope of offered services to clients is as below:

1. Critical stationary equipment (furnaces / reformers, reactors, urea HP loop, heat exchangers, and columns etc.)
2. Rotary equipment overhauling and troubleshooting (pumps, compressors and turbines)
3. Refractory repair
4. Supervision of catalyst replacement & activation
5. Calibration of PSV's / Control Valves and Instruments
6. Repair of Electric Motors

TRAINING SERVICES

FFC has a world class well equipped industrial Technical Training Center (TTC) at its plant site. Established in 1985, it has over the past decades emerged as a Centre of Excellence in the country for training. Our clients include Fertilizer, Oil & Gas and Petrochemical Industry.

1

Experienced professionals and managers at our plants, who are actively engaged in plant operation and maintenance impart vital practical knowledge

2

High quality 3-star boarding / lodging facility is available for trainees with various recreational facilities including sports, pool, library, etc.

3

In addition to local man power, our training center has also hosted personnel of foreign companies from Iraq, Bangladesh, China, Bahrain and Denmark

4

Our standard courses cover all areas of plant like Safety, Operations, Maintenance, Inspection, Turnaround Planning, etc. Customized courses are also offered to clients as per their needs. We can also conduct a Training Needs Assessment to develop a need based training plan for your personnel

ENGINEERING SERVICES

Our Engineering team plays a key role in monitoring the performance of the plants and its major equipment. We also carry out troubleshooting of process problems and optimization of plants productivity. FFC team possesses state of the art software. We undertake engineering studies / projects for our clients utilizing internationally acceptable codes and standards along with industrially established good engineering practices. Following services are offered to clients in this area:

1

PERFORMANCE MONITORING OF ROTARY AS WELL AS STATIONARY EQUIPMENT LIKE COLUMNS AND REACTORS ETC.

2

CATALYST PERFORMANCE EVALUATION AND ITS REMAINING LIFE ASSESSMENT

3

HEAT EXCHANGERS THERMAL / MECHANICAL DESIGN

4

HEAT INTEGRATION STUDIES FOR ENERGY RECOVERY

5

GAS / LIQUID PIPING NETWORK SIMULATION, ANALYSIS / TROUBLESHOOTING AND DESIGN

6

PHA (HAZOP, FMEA, WHAT-IF ETC.) STUDIES

7

PLANT MODIFICATION PACKAGE WITH DETAILED ENGINEERING

8

MECHANICAL DESIGNING OF PRESSURE VESSELS, PIPING AND STRUCTURES

9

PIPING DESIGN INCLUDING FLEXIBILITY ANALYSIS

10

PREPARATION OF TECHNICAL SPECIFICATIONS FOR ORDERING OF EQUIPMENT, INSTRUMENTATION, PIPING AND STRUCTURE

HEALTH, SAFETY & ENVIRONMENT

(HSE)

“

Safety comes above everything else. It is evident from numerous awards won by FFC from National Safety Council, USA during past many years. We can improve the safety records of your plants by an end-to-end implementation of HSE management systems and plant safety audits. This includes Risk and Change Management, Incident Investigation, Emergency Preparedness, Occupational Health, Environmental Management checks & audits. FFC also provides Comprehensive and Customized Safety Trainings.

”

SPECIALIZED SERVICES: IT AND SAP

Being part of a fertilizer plant, FFC SAP & IT teams have rich exposure to business and technology which makes them suitable for any sort of such applications and projects in the petrochemical industry.



1

We can deliver turn-key IT projects, develop end user competency programs for industry

2

We offer 3rd party advice by SAP certified experts on the implementation of SAP and post Go-Live consultancy. FFC is the only company in SAP MENA region who with its own SAP team deployed the latest version of SAP i.e S4HANA- 1610

3

We have a pool of certified Oracle developers, Dot Net / Java / UI5 / FIORI developers, certified IT security and audit consultants, and design consultants for all sorts of data centers and NOCs. FFC is running all of its IT operations on private cloud and also offers cloud hosting to local clients

SPECIALIZED SERVICES: WIND POWER PLANTS

FFCEL is pioneering in Wind Industry of Pakistan. Our wind farm is in fifth year of O&M. Our team generated project development documents are considered as roadmap to Wind Sector of Pakistan

WIND TURBINE GENERATOR (WTG) EXPERTISE

Mechanical completion, Pre-Commissioning and Commissioning Performance Analysis (SCADA, Power curve etc.)

Gearbox inspection / maintenance / diagnostics

Boroscopic inspections and gearbox HSS replacement, manual / laser alignment, tower manufacturing and installation, and WTG foundation settlement checking

End of warranty, analysis of PAC and TCO, routine inspections

WTG SCADA, Generator Vibration and Power Curve Data analysis

Training on wind turbine operation

EBOP EXPERTISE

MV switchgear O&M of ACB, VCB, GIS based hardware

M&R of distribution transformers. Specialized tests on power transformer and switchyards

Engineering, testing, commissioning and maintenance of SCADA / substation automation systems. Verification of relay settings

O&M of 8 to 30 MVA generators, battery backup and UPS system

O&M of 132 kV switchyard, power transformers and VAR compensation system at WPP

ADDITIONAL SERVICES

EPC and O&M contractor and team selection

WTG model selection, micrositting, environmental study in line SEPA, rigging and transportation studies

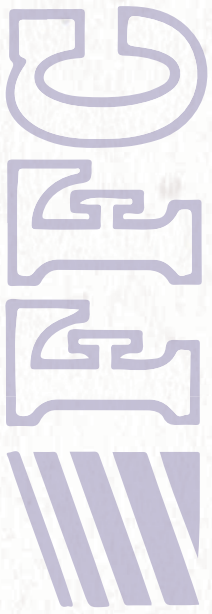
Project development and project management

FOREIGN CLIENTS



LOCAL CLIENTS





FAUJI FERTILIZER COMPANY LTD
Sona Tower, 156 - The Mall, Rawalpindi - 46000, PAKISTAN

Contact Person: Muhammad Amer Shiraz (DM – Technical Services)

Landline: +92 (51) 8454810

PABX: +92 (51) 111-FFC-111 Ext: 4810

Email: amer_shiraz@ffc.com.pk

www.ffc.com.pk