ABID MAHMOOD

INSTRUMENT & CONTROL ENGINEERING PROFESSIONAL



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PROFILE

13+ years of hands-on experience in Detail Design, FEED, Execution & Commissioning of green field & brown field projects with Oil & Gas, Petrochemicals (Polymers & Urea Fertilizers).

- Experienced in executing the Projects from **Proposal to Handover Stage** including Scope Extraction, Detailed Design, Procurement Support, Construction Co-ordination, Commissioning & Startup.
- Experienced in execution of **Green-Field and Brown-Field** Oil & Gas / Petrochemicals EPC projects.
- Experienced in handling of **multiple interfaces** (with disciplines, vendors, EPC contractor and main client / end user).
- Experienced in handling of **Control Systems and Package Equipment** for I&C scope.
- **Extracted scope & technical requirements** from project specifications, performed instrumentation calculations for sizing, verified manufacturer's calculations & selected instruments while keeping in view of technical optimization.
- **Prepared & reviewed all kind of engineering deliverable** (Instrumentation & Package Equipment Specifications, Data Sheets, Master Index, IO Lists for DCS / ESD / F&G, BOQ - for instrumentation, Bulk MTO, Cables & Junction Box Schedules, Material Requisitions, Technical Clarifications & Bid Evaluation, DCS / ESD tag assignments during field engineering, wiring diagrams, instrument loop diagrams, hookup detail drawings and method statements for installation & commissioning).
- Supported Other Disciplines (Electrical & Telecom) for interfaces, System Architecture, Load Lists, Clash Review in 3D Model etc.
- Participated and presented I&C scope in **30%, 60% and 90% 3D model review sessions.**
- **Negotiated the technical aspects of equipment with vendors** to optimize function & cost of machinery / instrumentation during **technical bid evaluation**.
- Performed configuration, calibration & commissioning activities by myself. Hence, **reduced the cost to ZERO for "OEM support during commissioning of field instruments at site"** during commissioning & startup phases.
- Additional experience in Operation & Maintenance and Commissioning. Hence, taking care for real time challenges to be faced during plant operation.
- **Recovered lag times** by debottlenecking, follow-up with the stake holders & planned the allocation of resources.
- Experienced in ADNOC standards and good knowledge of industry standards (ADNOC Gas Processing – Design General Specifications, ADNOC Refining – Design General Specifications, Borouge General Specifications, SHELL DEPs, ISA, ANSI, NFPA.
- **Worked as in-house PMC Engineer** with Penspen International Limited at ADNOC projects.
- **Built and led a team** which successfully executed control systems modification work at Abu Dhabi Polymers Company.
- **Trained a team of fresh engineers & technicians** by delivering classroom & workshop lectures and by giving them practical exposure to industry break down problems at Pak-American Urea Fertilizer Limited.

ENGINEERING SKILLS

- Extraction of Scope of Work
- FEED & Detailed Design Engineering
- Preparation of Deliverables & Inter Disciplinary Check
- Sizing Calculations (Valves, Venturi, Orifice)
- Cables Sizing, Instrument Air & Hydraulic Oil Calculation
- Instrumentation Metallurgy Selection
- Instrument Type & Range Selection
- Site Survey, Field Engineering & Data Collection
- Participation in HAZOP & SIL
- Man Hours Estimation
- Technical Bid Evaluation
- Participation in Scheduling, Planning & Costing
- Participation in Design Review & Constructability Workshop
- Instrument Installation Procedures
- Loop & Function Test Procedures
- Inspections (FAT, IFAT, SAT)
- Construction Support & Commissioning
- Calibration, Configuration & Loop Integration
- Control Systems Testing & Modifications
- Troubleshooting During Startup
- Manpower & Inventory Control
- Coordination with Client, Sub-Contractors & Vendors

INSTRUMENTATION & CONTROL SYSTEMS HANDLED

Practically handled, **installed and tested** following equipment & **prepared engineering documents** for;

- **DCS (Honeywell Experion PKS R400.3 with Series C IO's)** at Abu Dhabi Polymers Company Limited (Borouge).
- **ESD Safety Manager R151** installation at Abu Dhabi Polymers Company Limited (Borouge).
- **DCS (TDC 3000), PLC (GE Fanuc, Siemens S7 -400)**, PID Controllers, Indicators, hardware installation, maintenance & troubleshooting at Pak-American Fertilizer Limited.
- Design and loop integration of instrumentation at **Well-Head Control Panels, Process Skids, Compressor Skids, Blowers Skids, Injection & Metering Skids, Custody Transfer Skids**.
- ON-OFF / Shutdown Valves with Partial Stroke Testing (PST) Devices **(Fisher DVC 6200, METSO).**
- Control Valves with Pneumatic & SMART Positioners (Flowserve, Fisher), Motorized Control Actuators (Rotork, Bernard Control), Pressure Regulating Valves, Pressure Safety Valves.
- Vibration Monitoring System / Sensors – Bentley Nevada 3500 for Rotary Equipment (Compressors & Blowers) installation at Abu Dhabi Polymers Company Limited (Borouge).
- Field instruments (Rosemount - Emerson, Endress+Hauser, Yokogawa, ABB) selection, evaluation, calibration, configuration & loop integration with control systems.
- Almost all kind of Level, Flow, Temperature, Pressure and Differential Pressure instruments handling.
- Analyzers (pH Analyzer, Conductivity Analyzers, Moisture Analyzer, Dissolved Oxygen Analyzer, Gas Chromatographs).
- Participated in testing and commissioning of ABB analyzer shelter (Gas Chromatographs, Hydrocarbon Gas Detectors).
- Fire & Gas Detectors (Flame, Hydrocarbon & Toxic Gas, Linear & Spot Heat Detectors, Deluge / Fire Spray Sprinkler System).
- Instrumentation at HRSG (Heat Recovery Steam Generator) at Pak American Fertilizers Ltd.

EMPLOYMENT HISTORY

DISCIPLINE ENGINEER (INSTRUMENTATION & CONTROL)

PENSPEN INTERNATIONAL LIMITED – United Arab Emirates
June 2019 → Present

PROJECTS

- **RUWAIS TRAIN 3 PLC REPLACEMENT Project**
  Client: ADNOC Gas Processing
  Role: Assistant Lead (I&C)
- **Fire Water Network Upgrade in Asab – 0**
  Client: ADNOC Gas Processing
  Role: Shadow Lead / Acting Lead (I&C)
- **Jet Fuel Pumping Station at Dhafra Air Base**
  Client: Combined Military Works - Abu Dhabi
  Role: Design Engineer (I&C) / Commissioning Engineer
- **Upgrade EGA Facility for Continuous Gas Supply**
  Client: Dolphin Energy Limited
  Role: Assistant Lead (I&C)
- **Crude Receiving Facilities at Jebel Dhanna**
  Client: ADNOC Onshore
  Role: Design Engineer (I&C)

LEAD ENGINEER (ELECTRICAL & INSTRUMENTATION)

Consolidated Contractors Company – United Arab Emirates
Jan 2017 → May 2019

RESPONSIBILITIES

- Leading the team, Review & Preparation of engineering deliverables, material requisitions, technical review of vendor documents, comparison sheets & material submittals.
- Review of preliminary and final design documents & drawings with other disciplines for function and final design selection.
- To conduct site visits for data collection for ensuring conformance to design and specifications and compliance with operational and safety standards.
- Follow up with construction team, schedule & progress monitoring, commissioning support, loop & function testing, integration & troubleshooting of field instruments.
- Inspection, quality check, monitoring of site work progress, resolving technical clashes & removing bottlenecks with other dept.
- Clearing of punch points, handling and resolving of client's complaints regarding functionality of equipment.

PROJECTS

- **Lowe Fars Heavy Oil Development Program**
  Client: Kuwait Oil Company
  Role: Design Engineer (E&I)
- **Jizan Sewage Treatment Plant – KSA**
  Client: Saudi Aramco
  Role: Project Engineer (E&I)
- **New DOHA Port Project – Qatar**
  Client: Government of Qatar
  Role: Commissioning Engineer

DESIGN ENGINEER (INSTRUMENTATION & CONTROL) WITH ADDITIONAL ROLE OF COMMISSIONING

DESCON ENGINEERING Limited – United Arab Emirates
March 2013 → Dec 2016

RESPONSIBILITIES & ACHIEVEMENTS

- Coordinated with Project Manager / Engineering Manager in developing project **execution schedule**, planning of resources.
- Evaluated & extracted **scope of work** from ITB / FEED and prepared **engineering documents / deliverables.**
- Provided input in **design review meetings** & conducted site visits for **collection of data required for optimized design.**
- **Resolved design clashes with other disciplines** (Electrical, Piping, Civil, Process) & reviewed their documents as per inter disciplinary check practice.
- Technical bid evaluation of all field instruments with **ZERO error**, reviewed & approved **VENDOR documents for manufacturing clearance.**
- **Headed kick off meetings with vendors** during bid award, finalized technical clarification responses & MOM.
- **Meetings with client** for presentation of alternative solutions, **technical negotiation with vendors** to ensure cost control.
- Prepared interface queries & technical queries for client & coordinated with interface manager, sub-contractors & vendors.
- Coordinated with client & vendor for **commissioning & operational spares & SPIR recording**.
- Carried out inspections **(FAT, IFAT & SAT)** and followed up with the **punch lists** for field instruments loop & function testing, Honeywell DCS & ESD / FGD Systems, ABB Gas Chromatograph (Analyzer Shelter), control & shutdown valves with partial stroke testing devices.
- **Developed loop & function test procedures**, **Participated in preparation of handover dossiers**.

INSTRUMENTATION WORK

- **Technically optimized preparation & review of basic design documents** (BOQ / MTO for bulk material, specification & data sheets for field instruments and F&G equipment, sizing / calculations / selection of control & shut down valves, orifice plates, venturi tube & annubar).
- **Preparation of procurement documents** (Material Requisitions, Technical Clarifications & Technical Bid Evaluation Reports).
- **Preparation & review of construction documents** (Cable Schedule, JB Schedule, Cable Layout, Instrument Location Layout, Typical Installation / Hookup Diagrams, Wiring Diagrams).
- Review of P&IDs and Control Narratives for interlock representations. Development of technical specifications.
- Evaluation of validity of **client's technical comments** on submitted I&C documents. **Coordination & justification for validity and incorporation of agreed comments.**
- **Pre commissioning activities** (Loop integration with control system, calibration, process parameters configuration & troubleshooting of field instruments, shut down valves with partial stroke test and Fire & Gas equipment).

CONTROL SYSTEM WORK

- **Integration of HART instruments with Honeywell Asset Manager (FDM)**.

- Preparation & review of Master Index, Equipment List, I/O List, Loop Diagrams, input to process team for logic diagrams.
- Contribution in **HAZOP & SIL studies.**
- **Handling & segregation of DCS / ESD cabinet components** with respect to analogue, digital, I.S. & non I.S I/O's.
- Installation, troubleshooting & commissioning of DCS / ESD / F&G control system components (Honeywell Experion PKS R400.3, TDC 3000, IO Cards, RTPs / FTAs, Barriers).
- Review of Alarm & Trip Set Point List, Cause & Effect Matrix, Logic Diagrams & configuration of instruments accordingly.
- Coordination for interfaces between package units control system and main control system.

PROJECTS

- **PO Flare Gas Recovery Project, Abu Dhabi**
  Client: Abu Dhabi Polymers Company Limited (Borouge)
  Role: Design Engineer with Additional Role of Commissioning
- **ADCO Tie-Ins Works at Southeast, Abu Dhabi**
  Client: Abu Dhabi Company for Onshore Oil Operations
  Role: Design Engineer
- **Makori Field Surface Development Facilities, Pakistan**
  Client: MOL Pakistan Oil & Gas Co. B.V
  Role: Design Engineer

INSTRUMENTATION & CONTROL ENGINEER

PAK-AMERICAN UREA FERTILIZER LIMITED (AGRITECH Limited) - Pakistan
January 2009 → March 2013

RESPONSIBILITIES & ACHIEVEMENTS

- **Worked as discipline engineer in IN-HOUSE project team,** have been responsible for all Instrumentation & Control SOW of allocated in-house projects.
- Preparation of detailed engineering documents (specification sheets, BOQ, typical installation, cable & JB schedules, block diagrams etc.) for in-house projects. Maintained all engineering files & modification work.
- Review of technical offers, preparation of technical clarifications & TBE, review of V-Docs & providing manufacturing clearance.
- **Presented capital & spares budgets, daily & monthly progress reports**, BOQs & BOCs for installations & modifications.
- **Developed preventive maintenance schedule** & implemented maintenance programs in coordination with planning team.
- **Planned annual turn around** / shut down activities & arranged spares / consumables in advance.
- **Ensured full compliance to work permit procedures** & safe work execution practices as per task risk assessment.
- **Delivered lectures for instrumentation working principles & maintenance procedures** to fresh hires at in-house technical training center of Plant.

PROJECTS

- **PACE (Pak-American Capacity Enhancement) Revamp Project – 100M USD Project**
  Role: Design Engineer (Fully Responsible for I&C)
- **Power House (Gas Engines CAT G 3516 A)**
  Role: Fully Responsible for I&C activities
- **Energy Optimization Project (HRSG at Downstream of GT)**
  Role: Fully Responsible for I&C activities

SOFTWARE

- Smart Plant Instrumentation SPI- 9
- Navis Works & SPR – Smart Plant Review
- Plant Design System – PDS
- Microsoft Word, Excel

TRAININGS

• Work Permit Procedures	Abu Dhabi Polymers Company Ltd. UAE	2015
• Strategic Time Management	DESCON Engineering Ltd.	2014
• Running Effective Meetings	DESCON Engineering Ltd.	2014
• Work Place Stress Management	DESCON Engineering Ltd.	2014
• Navis Works & SPR 3D Review	DESCON Engineering Ltd.	2013
• Smart Plant Instrumentation SPI- 9	DESCON Engineering Ltd.	2013
• Instrumentation Maintenance Procedures	Pak American Fertilizers Ltd.	2009

EDUCATION

B.Sc. Electronics, Communication & Instrumentation Engineering (2004 - 2008)
Pakistan Engineering Council License # ELECTRO/ 13370
College of Engineering & Technology, The Islamia University of Bahawalpur.

PERSONAL INFORMATION

Passport PU0151563