AVIDUS ENGINEERING PRIVATE LIMITED (AEPL)

Unfolding Technology

AEPL-T-003

PROCESS INSTRUMENTATION AND CONTROL

(DETAILED ENGINEERING)

TRAINING PROGRAMME

ELIGIBILITY : EIE, ECE, EEE

DURATION : 2 WEEKS

DAILY : 4 HOURS

1. Introduction to Training Courses
- Process Instrumentation & Automation
- Process Industries
- Different Fields of Activities
- Design/Engineering & Construction
- Commissioning, Operation & Maintenance
- Instrumentation – Inter Disciplinarian Course

2. Engineering - Types of Drawings-P&ID
- Drawings Types, Size, Scale, Number, Sheet, Revision
- Drawings Notes, Legend, Symbols, References
- Drawing Control-Drawing Index
- Piping and Instrumentation Diagram (P&ID)

3. Engineering - Wiring Drawings-(ILDs)
- Drawings Notes, Legend, Symbols, References
- Wiring Drawings
- Elementary Drawings
- Instrument Loop Diagrams (ILDs)

4. Engineering - Instrumentation Cable Drawings.
- Cable Block Diagram
- Cable Conduit Schedules (CCS)
- Cable/Conduit Layout Drawings
- Cable/Conduit Selection and Sizing

5. Engineering - Instrument Installation Drawings
- Installation/Hook-up Drawings
- Material Take-Off (MTO)
- Impulse Tubes-Fittings-Selection
- Conduit-Fittings-Selections
- Purchase Requisitions/Technical Evaluation/NMR Review

6. Engineering–Instrument Specifications Instrument Specification Sheets(ISS)
- ISS-Local Instruments
- ISS-Transmitter
- ISS-Valves
- ISS-Actuators
- I/O List-Data base

7. Field and System Enclosures
- Enclosure Ratings
- Area Classification and Enclosures
- Terminations and Equipment Layout
- Power and Heat Rise Calculations
- Cable/Conduit Entries, Earthing

8. Logic Development
- Basic Phylosophy
- Types of Logic
- Drawings Notes, Legend, Symbols, References
- Control Phylosophy / Logic Narratives

9. Control Laboratory-PLC Trainer
- PLC Engineering Study
- Application Logic Study
- PLC Programming
- Simulator with PLC on Batch Process Reactor

10. Construction/Commissioning
- Construction Scope of Work
- JBs, Instrument Enclosure Installation
- Impuse Tubes, Cable/Conduit Routing
- Loop checking, Hydro Test
- Pre-Commissioning/Commissioning

11. Automation Systems – Common Features
- General Block Diagram
- Definitions DCS/ESD/PLC/RTU/SCADA
- Differences in DCS/ESD/PLC/RTU/SCADA
- Applications of DCS/ESD/PLC/RTU/SCADA
- Automation System Architecture

12. Control Valves/Relief Valves
- Study of Different Types and Applications
- Selection and Sizing

13. Valve Actuators
- Pneumatic/Electric/Hydraulic
- Selection and Sizing

14. Foundation Field Bus
- Serial / Ethernet Communication
- Foundation Field Bus/HART
- FF Segment Drawings
- FF Calculations

15. New Developments-SPI (INtools) / SPPID (Smart Plant P&ID)
- Smart Plant Instrumentation – SPI (INtools) Overview
- Smart Plant P&ID Overview

16. Instrumentation Standards
- ISA (Instrument Society of America)/ISO
- PIP (Process Industry Practices)
- API/NEMA/NEC/NFPA/EIA

17. Test and Feedback
- Job Consultancy
- Advance Training Certificate Distribution
- CV Development
- Mock Interview

Visit website for more details :
www.avidus.in

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