

PROJECT EXECUTION

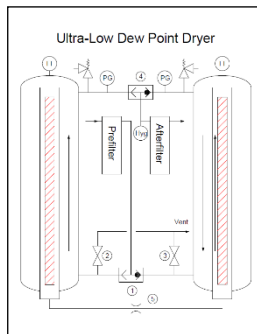
PEDCO possesses broad capabilities to develop industrial products and processes requiring thermal-hydraulic expertise and process control. The development process starts by identifying process/product requirements and ends with commissioning or product delivery. The development process is basically the same irrespective of project size. PEDCO has the ability to independently complete smaller projects or work with engineering companies, civil, mechanical, electrical, and I&C contractors to execute larger projects. The development process is customized based on client needs, project complexity and time allocation. Client participation is based on availability of the client's staff, unique capabilities and facilities of the client, and specific project issues. An example project execution is described below.

PROJECT REQUIREMENTS

- Define operating conditions including minimum, maximum and design
- Define performance requirements: pressure drop, allowable power consumption, temperature, etc.
- Develop scope, budget and schedule

PROCESS DESIGN AND COMPONENT SPECIFICATIONS

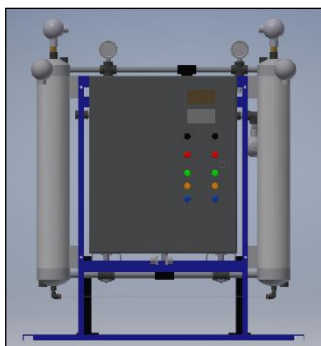
- Prepare Process Flow Diagram (PFD) and Stream Tables
- Prepare Piping and Instrumentation Diagram (P&ID)
- Determine utility requirements
- Define maintenance specifications
- Specify material and component requirements for fabrication



Process Flow Diagram

GENERAL ARRANGEMENT

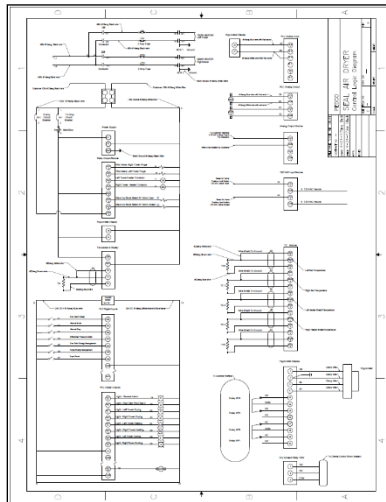
- Create 3-D model of components and total system
- Create a detailed Bill of Material
- Integrate project specific requirements into design



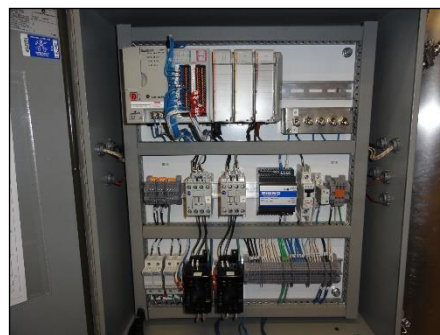
3D Model

ELECTRICAL AND INSTRUMENTATION & CONTROL DESIGN

- Develop control logic and I/O count
- Create electrical and logic diagrams
- Specify electrical components, instrumentation and control hardware
- Develop panel layout
- Assure compliance with NEC, NEMA, NFPA and customer specific electrical codes



Control Logic Diagram



Automated Process Control Enclosure

PROCURE AND FABRICATE

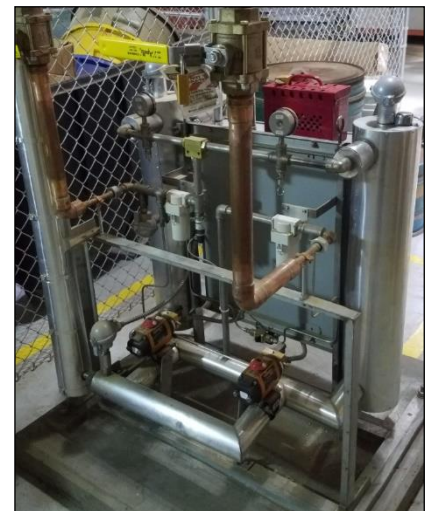
- Select specific components for final design based on cost-benefit analysis
- Prepare fabrication drawings from 3D model
- Finalize Bill of Material
- Fabricate in-house or outsource fabrication



Unit Fabricated in PEDCO's Shop

COMMISSIONING AND STARTUP

- Prepare installation and startup manual
- Technical support during installation
- Visual check of system installation
- Operator training
- Startup and system tuning
- Verify performance requirements satisfied



Commissioning at Customer's Facility

TECHNICAL SUPPORT

- Preventative maintenance support
- Remote troubleshooting and diagnosis
- Technician support

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