



Universal Compressed Air
3001 Emrick Blvd., Suite 320
Bethlehem, PA 18020 USA
Phone 610-559-7967 Fax: 610-515-0945

JOB DESCRIPTION

Electrical Power System Engineer

Title/Scope:	Electrical Power System Engineer/Full-time
Department:	Engineering & Technology
Reports to:	Sr. Manager of Engineering & Technology
Location:	Bethlehem, PA
Date:	September 2022

Universal Compressed Air is a privately-owned and thriving high-technology business in Pennsylvania's Lehigh Valley focused on compressed air systems for industry. UCA brings decades of Industrial Gas expertise to Compressed Air Supply Systems (CAS). Our PIPELINE AIR™ CAS are designed, engineered, built, operated, and maintained to deliver compressed air as a utility and, in every case, an efficient, reliable, and application-tailored solution to maximize savings and optimize the end user's success.

POSITION SUMMARY

The Electrical Power System Engineer is responsible for overall execution of CAS electrical engineering activity during proposal development, project execution, construction and ongoing plant operations. The incumbent will also interact with the customer representatives on a periodic basis along with developing a positive, productive working relationships with vendors and UCA's Operating and Maintenance team.

Travel will be necessary to build and maintain relationships with UCA personnel, vendors and customer representatives. Support will also be needed during system checkout and commissioning that will require dedicated focus remotely or at location.

PRINCIPAL ACCOUNTABILITIES

1. Electrical Engineering and Design

- Ensure overall electrical design is national, regional and industry code compliant and meets all required safety standards.
- Analyze customer available power systems, assess/recommend optimal electrical substation and distribution design for new opportunities, and provide electrical system input to proposal and estimate development.
- Create power and distribution system models using industry standard tools (e.g., SKM Power Tools, ETAP, etc.) and maintain the models throughout the project and into ongoing plant operations.



- Engineer and design MV substations and MV/LV power distribution systems. Typical system includes 13.8 KV/4160 V Transformers, 13.8 KV/480V Transformers, Neutral Grounding Resistors, 15 KV Switchgear, 5 KV Switchgear, 5 KV Motor Control Centers, 480V Switchgear, 480V Switchboard, 480V Panel Boards, 4160V and 480V Induction Motors, 480V VFDs, and 208V/120V power and lighting distribution.
- Perform Short Circuit and Arc Flash Analysis.
- Interface with customer engineer and inspection authorities on all electrical issues.
- Write electrical equipment technical specs for procurement, provide technical evaluation of electrical equipment bids and participate in final vendor selection.
- Review and approve drawing submittals from electrical equipment suppliers, local utilities and customer's engineer.
- Determine protective relay settings (transformer, feeder and motor protective relays) and program relays as required.
- Perform motor starting studies and review and approve all electrical system information provided by packaged equipment suppliers (dryer, compressors, cooling towers, etc.).
- Interface with Controls Engineer, Systems Engineer and SCADA system supplier to ensure all electrical system I/O is properly accounted for and reflected appropriately on the Process and Instrument Diagram.
- Develop and maintain detailed cable schedules required to support fabrication and construction.
- Inspect and checkout electrical distribution equipment at the vendor shop and in the field during commissioning.
- Develop and maintain MV and LV Electrical Single Lines to support proposals, projects and ongoing operations.
- Develop electrical physical and schematic drawings from 3D model to indicate wiring, conduit and cable tray required to connect equipment.
- Review and approve contractor and fabricator electrical submittals.
- Develop detailed design/fabrication packages for specialty panels (e.g. Remote Breaker Control Panel) and special control schematics for equipment (e.g. Glycol pumps with Hand/Off/Auto mode)
- Troubleshoot and resolve electrical issues encountered during fabrication, construction, commissioning and ongoing plant operations.
- Interface with utility companies as required on electrical supply, incentives, etc.

2. Other:

- Support commissioning and startup of new facilities
- Provide operator training on Electrical Distribution Systems
- Develop or contribute to development of, engineering work processes and operating procedures
- Provide technical support and input to sales, business development and new technology development



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JOB REQUIREMENTS

1. 5+ years demonstrated experience in electrical power system engineering. Experience on utility electrical power system projects or distributed energy resource projects is strongly preferred.
2. BS in Electrical Engineering or related electrical power systems field with 5+ years of direct engineering experience within an electric utility or MS in Electrical Engineering or related electrical power systems field with 2+ years of direct engineering experience.
3. Very strong knowledge of NEC, NFPA, and other industry related codes.
4. Experience with power system modelling and analysis tools (e.g., SKM Power Tools, ETAP, etc.)
5. Experience with 2D and 3D CAD tools
6. Certification as an Engineer in Training (EIT) or Professional Engineer (PE) in any state desired.
7. Strong verbal and written communication skills along with ability to effectively interface with customers and vendors.
8. Travel up to 20% of time with extended time at site possible during staging, commissioning and startup.

COMPENSATION & BENEFITS

Along with an exciting, growth-oriented work environment, we offer the following:

- Competitive compensation
- 401K with match
- Medical & Dental
- PTO and paid holidays
- Flexible spending account