





The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at *wvOASIS.gov*. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at *WVPurchasing.gov* with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header  [List View](#)**General Information**[Contact](#)[Default Values](#)[Discount](#)[Document Information](#)[Clarification Request](#)**Procurement Folder:** 929712**Procurement Type:** Central Purchase Order**Vendor ID:** 000000229419 **Legal Name:** MILLER ENGINEERING INC**Alias/DBA:****Total Bid:** \$0.00**Response Date:** 09/08/2021 **Response Time:** 15:30**Responded By User ID:** MillerEngineer1 **First Name:** Travis**Last Name:** Taylor**Email:** ttaylor@millereng.net**Phone:** 304-291-2234**SO Doc Code:** CEOI**SO Dept:** 0603**SO Doc ID:** ADJ2200000004**Published Date:** 8/26/21**Close Date:** 9/9/21**Close Time:** 13:30**Status:** Closed**Solicitation Description:** Transfer Switch Gear Design
Camp Dawson  **Total of Header Attachments:** 1**Total of All Attachments:** 1



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Solicitation Response**

Proc Folder: 929712
Solicitation Description: Transfer Switch Gear Design Camp Dawson
Proc Type: Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2021-09-09 13:30	SR 0603 ESR09082100000001703	1

VENDOR
 000000229419
 MILLER ENGINEERING INC

Solicitation Number: CEOI 0603 ADJ2200000004
Total Bid: 0
Response Date: 2021-09-08
Response Time: 15:30:35
Comments:

FOR INFORMATION CONTACT THE BUYER
 Tara Lyle
 (304) 558-2544
 tara.l.lyle@wv.gov

Vendor Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Transfer Switch Gear Design Camp Dawson				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments:

Extended Description:

Provide professional architectural and engineering design services per the attached documentation.



Expression of Interest
West Virginia – Army National Guard
Camp Dawson Electrical Transfer Switch Gear Design
Kingwood, WV
CEOI ADJ2200000004
September 9, 2021



Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Table of Contents

A Letter from Our Owner

TAB 1:	Firm Qualifications Miller Engineering, Inc. Firm Profile Craig Miller, PE Travis Taylor, PE Joseph Machnik Jack Jamison Eaton Electrical Services & Systems (EESS) Jeff Brode Mahesh Chandak, PE Tom Dionise, PE Certifications and Degrees Applicable to This Project
TAB 2:	Project Organization Staffing Plan Organization Chart
TAB 3:	Experience Capitol Chiller Plant WVDA Ripley Warehouse Electrical Upgrades Advanced Surgical Dominion Post Electrical Upgrades Cacapon Lodge Addition & Renovation Huntington Floodwall Station Automation Similar Projects Budget Delivery History Similar Projects Deadline Delivery History References
TAB 4:	Methodology Project Approach & Methodology
TAB 5:	Project Forms Signed EOI Forms Purchasing Affidavit

The Miller Engineering Difference



We are very pleased to submit our response for the Camp Dawson Electrical Transfer Switch Gear Design project. We have elected to submit as prime as our understanding from the Expression of Interest is that the project is focused on electrical design. MEI has operated in this role many times before, including on the recent Mill Point Canopy and Camp Dawson FMS 4 Fire Protection Projects. We have also served as the prime consultant on many other projects for various clients and state agencies.

We're not your typical MEP firm; we ensure our designs meet very specific, time-tested criteria, including but not limited to being constructible, operable and maintainable. We want to set up our clients to be self-sufficient, but we work to be available every step of the way.

Most every project we do requires either a phased approach, or a detailed and sequenced scope of work to keep the facility in operations and minimize outages. We routinely deliver such projects for educational, institutional, commercial, and government facilities. Every project we do has a particular set of standards which we must apply, and this is no exception. We see our diversity of previous work as an advantage as we do not use "cookie cutter" design or presume we have all the answers when we start.

Our hands-on staff takes great pride in their construction and operations backgrounds, which help us visualize the project as it would be built instead of just lines on paper. We don't sit clients down and lecture to them about what they're going to get; we listen to them so we can strive to deliver exactly what they want and need. It costs too much time and money (for both our clients and us) to not deliver exceptional service every single time, and we work tirelessly to keep projects on time and on budget. We're proud to say that our change order percentage over the last 10 years is less than 0.1%, and that's not just a statistic; it's a proclamation of our commitment and determination to make sure things are done right the first time, every time.

A review of the project goals from the EOI resemble projects that MEI has completed both in the past and currently under construction. We have designed electrical upgrade projects for various private owners and state agencies including WV General Services Division, WV Department of Agriculture, WV Division of Natural Resources, and Greer Industries. Many of these upgrades involve the integration of emergency backup power. In the instance of the Capitol Chiller Plant, the generators installed will service both backup power and also to reduce peak electrical demand, through the use of transfer switches and switchgear with interlocks.

To assist with the coordination study, MEI will utilize the services of Eaton Electrical Services & Systems (EESS). We have worked with EESS in the past, serving as a design support and also through contractor support once a project is under construction. MEI will use EESS's vast experience with electrical switchgear operations to evaluate the existing electrical distribution and support the completion of the coordination study.

We encourage you to contact any of our references to gauge our level of commitment, not only through design but continuing through construction administration, and beyond the warranty period.

I would like to personally thank you for affording Miller Engineering the opportunity to propose on the Camp Dawson Electrical Transfer Switch Gear Design project and we look forward to the chance to discuss the project in an interview.

Best Regards and Good Luck on the Project,

A handwritten signature in blue ink, appearing to read 'Craig Miller', with a horizontal line extending to the right.

Craig Miller, PE
President/Owner
Miller Engineering, Inc.



TAB 1 –FIRM QUALIFICATIONS





Firm Profile

MILLER ENGINEERING is a solely held (S) corporation owned by Craig Miller PE, President. The corporation maintains a Certificate of Authority with the WV State PE Board and has carried professional liability insurance since its inception. Neither the firm nor its professional engineers have ever faced disciplinary action in any form from the states in which they are registered.

Our engineered solutions involve a detailed assessment process: investigation, observation, communication with stakeholders, system analysis, building modeling and engagement from our entire team. We approach each and every project with this process and the guiding principle that buildings are designed to be livable and function in their intended purpose.

Over the past 14 years Miller Engineering, Inc. (MEI) has engineered solutions for over \$23.2M in MEP system upgrades, repairs and renovations for projects of all scopes and sizes, with clients ranging from private owners to local and state governments. With a strict attention to detail and commitment to delivering a job done well and done right the first time, every time, **MEI has accumulated a change order percentage of less than 0.1% over the past 8 years.**

Our team has unique skill-sets regarding engineered renovation solutions. Each member of the team has hands-on mechanical system experience including installation, construction, design and maintenance.

Miller Engineering takes pride in being **different by design**, and that difference shines through in all phases of our work and continued relationships with our clients.

- Experienced and Licensed Professional Engineers
- Quality, Value-Engineered Project Delivery
- Qualified Construction Representative on Staff
 - LEED-AP Certified
 - Below Industry Change Order Status
 - Building Information Modeling
 - Emergency Facility Response

Engineering Design and Consultation

- Mechanical
- Electrical
- Plumbing
- HVAC Design
- Renovation
- New Construction
- Building Information Modeling

Aquatic Facility Design

- Public Pools & Areas
- ADA Compliance
- Indoor & Outdoor (air flow)
- Chlorination/Filtration

Construction Administration

- Maintenance/Facility Improvement Plans
- Contract Administration
- Code Observation

Communication System

- Intercomm & Public
- Address/Voice/Data/CATV
- Urgent Response

Energy

- Power Supply (main & backup)
- Green & Renewable Consulting
- Systems Utilization & Upgrades
- Sustainable Solutions

Facility Utilization

- Systems Assessment & Solutions
- Adaptive Re-use
- Planning/Life-Cycle Control
- Engineered Replacement

Life Safety Inspection/Design

- Fire Protection & Alarm Systems
- Access Control
- Fire & Electrical Investigation

Industry Experience

- Education
- Local & State Government
- Commercial Development
- Healthcare





B. Craig Miller, PE

Craig founded Miller Engineering in 2003, and serves as President and Principal Engineer. He has more than 20 years experience in design, specification, operations and project management. During his employment with WVU, Craig was directly involved with approximately \$130 million in new capital construction. His experience with a wide range of projects including HVAC, electrical, plumbing, infrastructure upgrades, building automation, energy efficiency and maintenance/renovation, among others, allows him to serve in multiple capacities within a given project. Craig will serve as the "Relationship Manager" for Miller Engineering as the main communication interface between the Owner, the design team, contractors and end users.

Project Role: Relationship Manager – Primary Point of Contact

- *Engineer in Responsible Charge*
- *Design and Project Management of Mechanical, Electrical, Plumbing Projects*
- *Concept and Construction Design*
- *Business Operations and Financial Management Oversight*
- *Quality Assurance and Control*

Professional Project Highlights

- Morgantown High School Area 4 HVAC Renovations
- WVU Life Sciences Building and Student Recreation Center – Owner’s Engineer
- Hawks Nest/Twin Falls HVAC
- Mapletown High School HVAC Replacement Phase I & II
- Advanced Surgical Hospital
- Pipestem McKeever Lodge HVAC Piping Replacement
- Beech Fork State Park – MEP New Construction Design
- Cheat Lake Elementary & Middle School Renovations

Professional History

2003- Present	Miller Engineering, Inc.	President, Relationship Manager
2002-2003	Casto Technical Services	Existing Building Services Staff Engineer
2001-2002	Uniontown Hospital	Supervisor of Engineering
1995-2001	West Virginia University	Staff Engineer
1990-1995	BOPARC	Caretaker – Krepps Park
1983-1988	University of Charleston	Electrician/HVAC Mechanic

Education

1995	West Virginia University	BS- Mechanical Engineering
1988	University of Charleston	BA- Mass Communications

Licenses and Certifications

- Professional Engineer (West Virginia, Pennsylvania, Maryland, and Ohio)
- Licensed Master Plumber
- LEED-AP Certified



Travis Taylor, PE

Experience in project management facilitates Travis’s ability to create and design constructible projects. Prior to joining the Miller Engineering team he was directly responsible for managing \$10 million in electrical construction budgets. His experiences encompass both new construction and renovation. Travis maintains professional competencies by attending seminars and continuing education classes. These include local ASHRAE classes in addition to classes on electrical systems, and also steam systems through Shippenburg Pump Company. As lead engineer he provides HVAC, mechanical, plumbing, and electrical design solutions and services for our clients. In addition, he is part of our team’s complete assessment process in both planning and MEP design through construction administration.

Project Role: Lead MEP Engineer

- *Design of Mechanical, Electrical, and Plumbing Systems*
- *Building Information Modeling - Revit*
- *Constructible Materials Evaluation*
- *Site Evaluation and Mechanical System Review*
- *Submittal and RFP Review*
- *RFI Coordination, Review, and Response*
- *Construction Observation*

Professional Project Highlights

- Blackwater Falls Lodge Boiler Replacement
- MTEC Welding Shop
- Camp Dawson FMS4 Fire Protection
- WV State Building 22 2nd Floor Renovations
- WV State Building 25 HVAC Piping Replacement
- Morgantown High School Area 4 HVAC Renovation
- Bobtown Elementary School HVAC Upgrades
- Holly River State Park Primary Electric Service Replacements Phase I & II
- Pipestem Lodge McKeever Lodge HVAC Piping Replacement

Professional History

2011-Present	Miller Engineering, Inc.	Staff Engineer
2006-2011	Tri-County Electric, Co.	Project Manager
2006-2006	Schlumberger	Field Engineer Trainee - MWD

Education

2006 West Virginia University, BS – Mechanical Engineering

Licenses and Certifications

- Professional Engineer - State of West Virginia
- OSHA 10-hour Course: Construction Safety & Health



Joseph Machnik

Joe has experience with AutoCAD, MEP and Revit MEP. He provides design modeling, drafting and supervised design services and construction support for Miller Engineering.

Project Role: MEP Designer

- *Revit/CADD Coordination of New Construction and Renovation Designs*
- *Building Information Modeling Specialist*

Professional Project Highlights

- Bobtown Elementary HVAC
- WV State Building 25 HVAC Piping Replacement
- Blackwater Falls Boiler Replacement
- Suncrest Middle Gym HVAC
- North Elementary Gym HVAC
- Graftek Steam Systems Evaluations and Modifications
- WV State Building 25 HVAC Piping
- Pipestem Lodge HVAC Piping Replacement
- Westwood Middle Cooling Tower

Professional History

2010 – Present Miller Engineering, Inc. MEP Designer

Education

2008 Penn State – Fayette, AS - Building Engineering Systems Technology: *Building Environmental Systems Technology*

2007 Penn State – Fayette, AS - Building Engineering Systems Technology: *Architectural Engineering Technology*

Additional Training

2016 – Shippenburg Pump Company – Steam Systems Training

Staff – Qualifications and Experience



Jack Jamison

Jack brings 20 years as an electrical/building inspector and over 25 years of experience in the commercial electrical construction industry. His knowledge and experience are valuable resources to Miller's complete assessment process.

Project Role: Master Code Official

- *Facility Review, Code Research, Field Observations, Issue Resolutions, and Project Evaluation*

Professional History

2010- Present	Miller Engineering, Inc.	Code and Construction Specialist
1999-2010	Megco Inspections	Chief Inspector
1972-1998	Jamison Electrical Construction	Master Electrician

Education

1971 Fairmont State College, BS-Engineering Technology-Electronics

Licenses and Certifications

- Master Code Professional, IAEL Master Electrical Inspector, Class C Electrical Inspector – WV, PA, MD, & OH
- ICC Commercial Building, Building Plans, Commercial Plumbing, Residential Energy, and Accessibility Inspector/Examiner
- WV Master Electricians License
- NCPCCI-2B, 2C, 4B, 4C: Electrical & Mechanical General/Plan Review
- OSHA 30 Hour Course: General Industry
- NFPA Code Making Panel 14 – NEC 2014 Edition

ABOUT EATON – Electrical Engineering Services & Systems (EESS)

Eaton Corporation is one of the largest and most experienced industrial service organizations in North America. With more than 650 highly trained professionals in 80 engineering service locations throughout the U.S. and Canada, Eaton Corporation Electrical Engineering Services & Systems (EESS) division has complete local, national, and international capabilities, to provide a full range of electrical and mechanical equipment services. This broad range of service capabilities has established EESS as the leader in the engineering service industry.

EESS provides a unique capability when you are faced with a large project or engineering / evaluation of electrical power systems at multiple sites. Our division organization, with technical and professional experts on utility and industrial power systems, provides a vast resource from which to draw on in staffing your project. Years of division experience as an electrical equipment manufacturer and engineering service provider in commercial, industrial, data center, healthcare, and utility plant environments uniquely qualify EESS to handle engineering studies, power system assessments, load flow studies, and preventative maintenance services. EESS provides thorough engineering studies, accurate system analysis, and comprehensive recommendations to enable the customer to choose the best solution to achieve their project goal(s).

Electrical Engineering Services and Systems – Field Service Capabilities:

Eaton's Electrical Services and Systems (EESS) division has field service engineers and power systems engineers stationed in our local District Service Offices (i.e. Eaton service offices) which are distributed throughout the United States. Eaton's field service engineers have the training and experience to perform preventative maintenance and testing services on low voltage, medium voltage, and high voltage substation equipment – air and vacuum circuit breakers, electro-mechanical and solid state relays, transfer schemes, battery systems, meters, etc. – of any manufacturer's equipment. Equipment repairs, upgrades, and modifications can be accomplished as an individual job or as part of a larger project. Eaton's field service engineers can perform setting / programming of relays and control system wiring modifications in support of Eaton's Power System Engineering group's short-circuit, coordination, and arc flash studies.

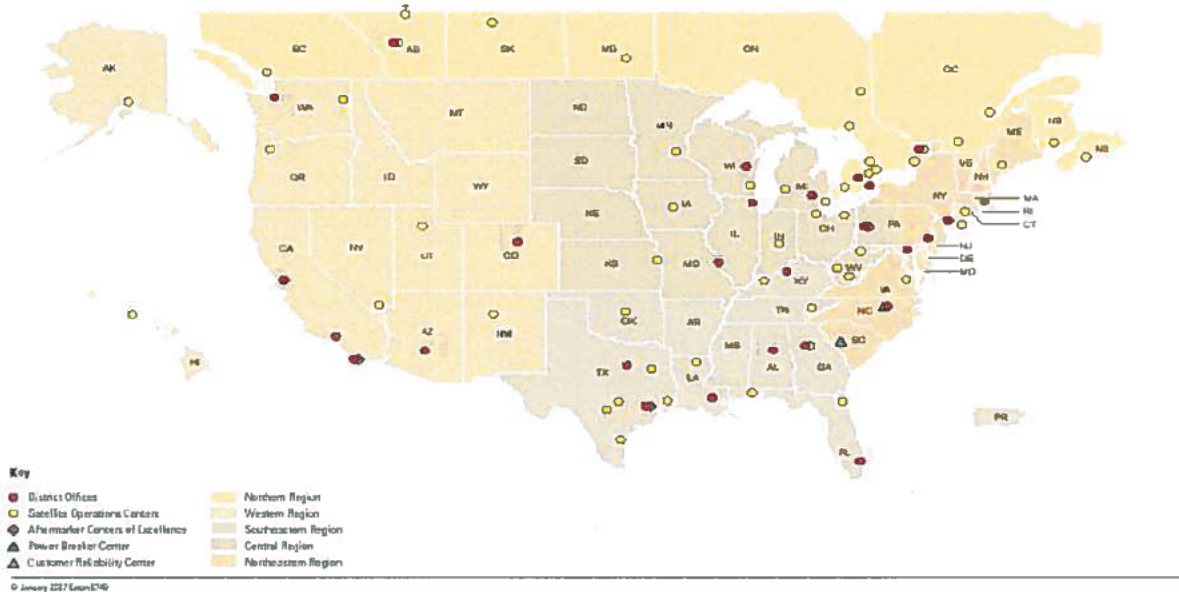
All Eaton field service personnel receive training to comply with OSHA CFR1910.269 Electrical Safety Standard with annual refresher training, as well as CPR/First Aid training, Arc Flash training, and are issued a full set of PPE and safety apparel. In our Field Engineering work force, we have an average of 15 years' experience covering all areas and aspects of the power system and associated equipment.

Shown below is our national coverage map.

Strength in Numbers



The right people in the right places
The Eaton Electrical Systems & Services team includes more than 1000 engineers, specialists, and technicians organized around a combination of national resource centers and local operations centers.



Power System Engineering (PSE) Center of Excellence

The Power System Engineering (PSE) group is Eaton's in-house consulting engineering unit that provides the full range of power system and substation design, engineering studies, power system analysis, systems integration, and automation design services. Consisting of Electrical Engineers based in local and regional offices, this team has in-house drafting capabilities, and extensive design and system evaluation experience. Many have helped to author the IEEE Color book series and are experts in their respective fields.

- Average 15 years' experience - multiple manufacturers experience
- Greater than 50% have EE Master's degree
- Licensed Professional Engineers – USA (50 states) and Canada
- Use state-of-the-art software tools
- Centralized core group with field deployed resources / engineers
- Active on standards committees / recognized industry experts

Eaton's Power Systems Engineering group can offer solutions for greater reliability, increased production, and significant cost savings. We are proud to contribute to Eaton's ability to service its customers a single source supplier and industry leader of microprocessor-based industrial control, power distribution equipment components, and power engineering. We offer:

- Power Quality Analysis and Products
- Power System Studies and Training
- Protection and Coordination Studies and Products
- Testing and Life Extension Services
- Installation Services
- Industrial System Services and Communication Systems
- Energy Monitoring Products and Services
- Predictive and Preventative Maintenance
- Energy Solutions and Facility Optimizations Services
- Alternative Energy Products and Services

Large Project Experience Examples:

Short-Circuit, Coordination Study, and Arc Flash Risk Assessment:

Caterpillar - Decatur, IL:

- Heavy industrial manufacturing facilities for diesel engines and earth-moving equipment.
- Scope: Eaton performed data collection, short-circuit, coordination, arc flash hazard analysis, arc flash mitigation, arc flash label application, arc flash / electrical safety training for 100+ electricians/engineers.
- Timeline: 2006 to present.
- Total Project Value: approximately \$475k.

Lehigh-Hanson Cement – Allentown, PA

- Quarries and processing facilities for the manufacturing of various types / forms of cement.
- Scope: Eaton performed data collection, short-circuit, coordination, arc flash hazard analysis, arc flash mitigation, arc flash label application, arc flash / electrical safety training for 200+ employees across 31 plants in North America.
- Timeline: 2010 to present.
- Total Project Value: approximately \$500k.

The Boeing Company – Seattle, WA

- Heavy industrial facilities for the manufacturing of commercial jet-liners.
- Scope: Eaton performed data collection, short-circuit, coordination, arc flash hazard analysis, arc flash mitigation, arc flash label application.
- Timeline: 2004 to present.
- Total Project Value: approximately \$1M.

Large Data Centers – Portland, OR

- Data center facilities with redundant power distribution systems and significant AC generation and UPS systems.
- Scope: Eaton performed data collection, short-circuit, coordination, arc flash hazard analysis, arc flash mitigation, arc flash label application.
- Timeline: 2016 to present.
- Total Project Value: approximately \$1.1M.

**Jeffery A. Brode
Lead Power Systems Engineer
Power Systems Engineering**

EDUCATION

BS in Electrical Engineering obtained from Penn State University in 2006.

EXPERIENCE

Mr. Brode began his power system engineering career with Eaton in 2007. His primary duties included providing quotations for power system studies and performing power system studies utilizing SKM and ETAP software. He has been involved preparing studies and performing data collection for schools, hospitals, water treatment plants, industrial facilities, and many other varied applications.

Within his time at Eaton he has been involved with multiple major national accounts and many reoccurring customers that include Georgia Pacific, Cargill, Corning Incorporated, Wal-Mart, and many others. He has also been involved with numerous new construction studies that provide critical data for first time power system start-ups.

Mr. Brode has also acted as an arc flash safety trainer. This involved teaching 4-8 hour class sessions to industrial and commercial customers based on the latest NFPA 70E standard.

Over the years, Mr. Brode has pursued more advanced types of power system analysis such as calculating resistor settings for the Hybrid High Resistance Grounding (HHRG) by using

multiple methods for verification and accuracy. He has also completed many studies involving bus bracing analysis, load flow & harmonic analysis, duct bank load capacity analysis, and most recently switching transient analysis. These advanced studies often lead to custom solutions such as (but not limited to) the design of glastic bus bar braces, tuned harmonic filters, or RC snubbers that require Mr. Brode to specify components to develop a suitable design.

Mr. Brode has also participated in varied power quality and grounding investigations. These investigations have often led to utilizing advanced power quality meters to reveal system deficiencies both due to internal and external disturbances on customer's distribution systems.

In 2020, Mr. Brode continues to complete all these types of power system analysis and gain experience in these technical fields on a day to day basis.

Training includes:

- OSHA Certification
- EFC level 2 (Mentor)
- Arc Flash Safety
- SKM Power Tools for Windows
- ETAP Software
- Alternative Transients Program (ATP)

Mahesh Chandak
Senior Power Systems Engineer
Power Systems Engineering

EDUCATION:

BS in Electrical Engineering
Shivaji University, Kolhapur, India

Master of Business Administration – MBA
Kennedy Western University, WY.

PROFESSIONAL ACTIVITIES:

Registered Professional Engineer (P.E.) in New York and West Virginia – Active as of 06/2020.

EXPERIENCE:

Mr. Chandak graduated from Shivaji University Kolhapur, India in October 1989. In October 1989, Indian Rayon and Industries Ltd employed him as a Graduate Engineer Trainee in their various maintenance projects. He was responsible for supervising preventive and corrective maintenance of medium voltage substations, low voltage distribution system and in house power generating plants for continuous process yarn manufacturing process.

In March 1991 to Nov 1992, Mr. Chandak joined Atic Industries Ltd, a Chemical dye manufacturer as Plant Engineer responsible for Co-generation plant, medium and low voltage substations and distribution systems.

In November 1991 to April 2018, Mr. Chandak worked as Senior Project Engineer for Guardian Industries Corp, USA a float and coated glass manufacturer.

As a Project Engineer, he was responsible for specifying, procuring, installing, commissioning, testing of MV/LV switchgear, power generation and distribution equipment.

He was also responsible for specifying, procuring, installing, commissioning, debugging, programming of control and automation equipment consisting of DCS systems, PLC systems, SCADA systems, Robotic and automatic inspection and quality control systems.

In April of 2018, Mr. Chandak joined Eaton Corp As Senior Power System Engineer. He performs various MV and LV power system studies including short circuit, protective device coordination, and selective coordination studies and arc flash incident energy analysis for broad spectrum of industries including arc flash mitigation solutions. He also provides technical support to local field service personnel. He has performed studies using SKM, and ETAP analysis programs.

**Thomas J. Dionise, P.E.
Advisory Engineer
Power Systems Engineering**

EDUCATION

BS in Electrical Engineering (with high distinction)
-The Pennsylvania State University

MS in Electrical Engineering (Power Systems)
-Carnegie-Mellon University

PROFESSIONAL ACTIVITIES

Institute of Electrical and Electronics Engineers
- Senior Member
- Power Engineering Society
- Industry Applications Society
- Metal Industry Committee Chairman
- Generator Grounding Working Group
- Pittsburgh Section Past Chairman

Registered Professional Engineer, PA

EXPERIENCE

Mr. Dionise has 33 years of power system experience involving analytical studies and power quality investigations of industrial and commercial power systems. He regularly teaches classes and seminars on topics related to power quality, harmonics and transient analysis. He has co-authored over 30 technical papers on various power quality topics, including a paper on harmonic filter design for an electric arc furnace that received the 2011 IEEE Transactions on Industry Applications 2nd Prize Paper Award. He is a Senior Member of the IEEE, Chair of the Metal Industry Committee, and member of the Generator Grounding Working Group. Tom has served in local IEEE positions, and had an active role in the committee that planned the IAS 2002 Annual Meeting in Pittsburgh, PA.

2000 – Present: Tom is presently an Advisory Engineer for Power Quality for Eaton's Electrical Services & Systems. He is responsible for the performance of industrial power systems studies

of all types. He has been involved in data center audits, power quality field measurements, and power quality problem solving. In 2002, he helped create Eaton Cutler-Hammer's PQHotline to offer power quality consulting, and regularly trouble-shoots callers power quality related questions. He is an instructor for Eaton's Power Quality Monitoring Class and Harmonic Analysis Class, teaching these in the US as well as Central and South America.

In the metals industry, he has specialized in power quality investigations, harmonic analysis and harmonic filter design for electric arc furnaces, rectifiers and VFD applications. He has specified SVCs for flicker and harmonic mitigation for electric arc furnace projects.

In the area of transient analysis, he has focused on investigations of equipment failures, simulation of switching transients and specification of transient mitigation such as RC snubbers. Additionally, he conducts field measurements to quantify transient overvoltages imposed on electrical equipment with and without RC snubbers and surge arresters.

1994-2000: Tom rejoined Westinghouse (which later became Siemens Westinghouse) in Power System Services. His assignments involved stability, load flow, and transient analysis of industrial power systems. Such diverse systems included steel mills, oil refineries, paper mills, and mine power systems. He conducted EMTP simulations of custom power devices such as DVR, DSATCOM, and SSB. He specialized in the modeling of synchronous and induction machines, including wound rotor induction motors. He also designed a high-resistance grounding scheme for a paper mill.

1988-1994: Tom joined Power Technologies, Inc. where he performed utility and industrial studies. He determined the impact of a new hydro installation and associated 800-kV transmission lines on the existing system. He

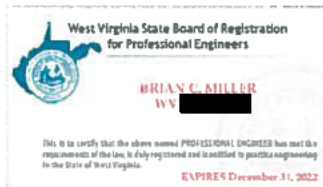
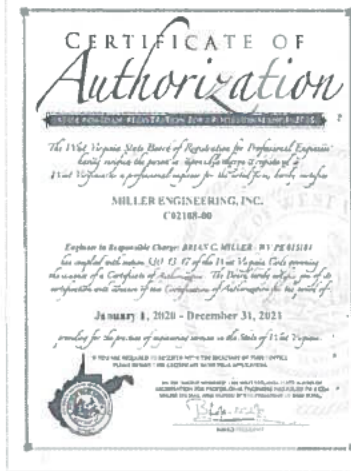
analyzed the stability and load shedding requirements for the upgrade of a mg-set frequency changer in a steel mill. He developed and taught a course in power system dynamics to power system operators. He specified a dynamic performance monitoring system and also supported EPRI projects.

1986-1998: Tom became involved in engineering studies. He conducted various power system studies including assessment of reactor overvoltages, evaluation of a prototype current limiter for naval power systems, and analysis of the effect of an electromagnetic pulse on power system stability. He assisted other divisions by recommending a feasible interconnection of a 20MW cogeneration facility,

predicting test transformer overvoltages, and modeling low voltage surges on distribution transformers. He taught training programs on transmission planning, transient stability, and loadflow. He also instructed in the Advanced School Stability Course and the Insulation Coordination course.

1982-1986: Tom joined the Westinghouse Advanced Systems Technology group. Initially, he supported the transmission system analysis software. He coordinated 50 utility and industrial time sharing customers in the application of load flow, short circuit, and stability software. He conducted training courses on the software.

Staff – Proposed Staffing Plan





TAB 2 – PROJECT ORGANIZATON



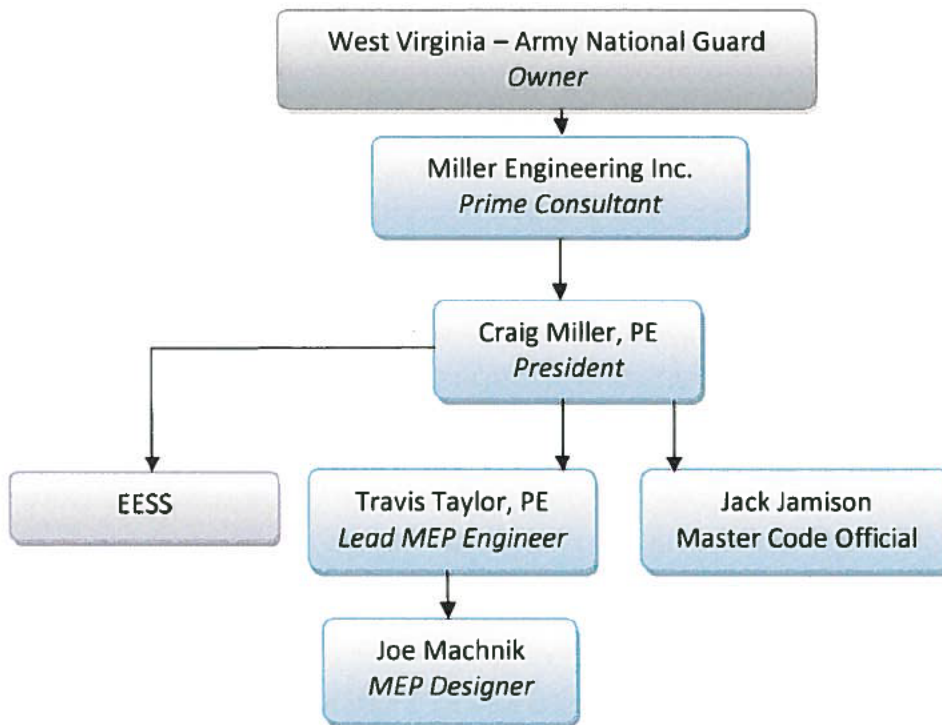
MILLER ENGINEERING

<u>Craig Miller, PE</u>	President, Principal in Charge
<u>Travis Taylor, PE</u>	Lead MEP Engineer
<u>Joseph Machnik</u>	Designer / BIM Coordinator
<u>Jack Jamison</u>	Master Code Official

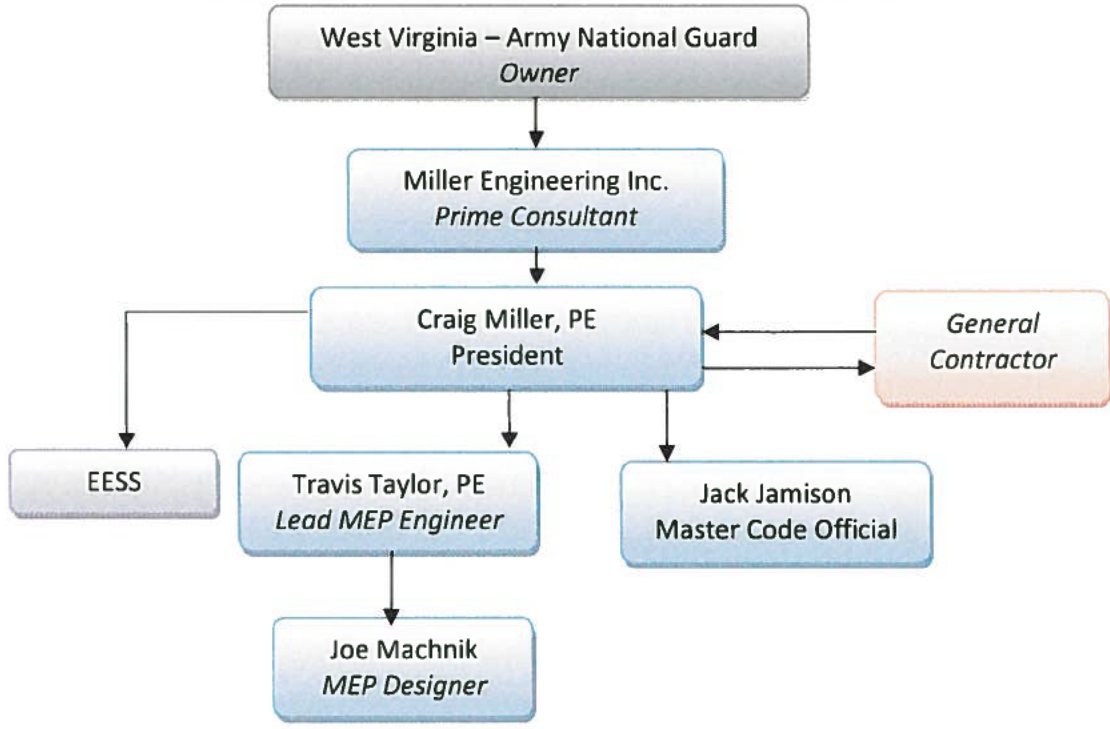
Eaton Electrical Services & Systems (EESS)

<u>Jeff Brode</u>	Lead Power Systems Engineer
<u>Mahesh Chandak, PE</u>	Sr Power Systems Engineer
<u>Tom Dionise, PE</u>	Advisory Engineer

Organization Chart -Design



Organization Chart – Construction



Experience –Electrical & Mechanical

Capital Complex Chiller Plant Evaluation and Modifications

Services Provided:

- Evaluation – Study
- Electrical
- Mechanical
- Plumbing

Project Cost: \$7.26 mil

Facility Area: Approx. 7,500 ft²

Owner: WV GSD



The existing chiller plant serving the WV State Capital Complex is 20 years old. The

Owner wishes to reduce energy costs associated with the peak electrical demand metering applied to the plant's electrical service. MEI was retained to evaluate multiple options to reduce electrical demand, and thereby the operating costs. The determined optimal solution is to use

large, medium voltage, natural gas generators which could operate select chillers during peak demand to reduce electrical peak demand. A 5kV switchgear will allow the select chillers and their respective pumps to operate under generator load when they are required to come online. A new 2,300 ft² building will be constructed to house the new switchgear, pumps, and heat exchangers to allow the chillers to still operate as a plant. The project is currently in construction and anticipated to be completed in January 2022.

Project Contact:
Dave Parsons
Energy Manager
WV GSD
112 California Ave.
Charleston, WV
304-957-7122

Descriptions of Past Projects Completed – Electrical

Ripley Warehouse Electrical Upgrades

Ripley, WV

Services Provided:

- Backup Power
- Electrical

Bid Amount: \$935K

Facility Area: Approx 42,000 sq ft

Owner: WV Dept. Of Agriculture



The West Virginia Department of Agriculture (WVDA) Ripley Warehouse houses the food distribution program, primarily for WV K-12 schools. The facility consists of office space, commodity warehouse, and approximately 20,000 square feet of cooler & freezer space for storing food. The WVDA is looking to expand its cooler / freezer space, thus requiring an electrical service upgrade to handle the additional cooler / freezer compressor loads.

MEI performed a thorough evaluation of the existing electrical service and distribution system. After reviewing the system, performing load calculations, and coordinating with the refrigeration vendors, determined the service should be increased from 1,200 amps to 3,000 amps allowing for future expansion. As there is no space in the warehouse or compressor buildings for equipment, MEI has proposed to house the new service equipment in a pre-fabricated building. The new service equipment will allow the building distribution to be "split" allowing the existing generator to be re-used. A second generator will be installed to handle the remaining loads. This approach will allow a phased approach to installation preventing any long duration outages. The proposed solution also allows partial building operation in the event of a generator failure. The project was completed during the summer of 2020.

Project Contact:
Alan Clemans
WV Dept. of Agriculture
(304) 558-2221

Descriptions of Past Projects Completed – New Construction

Advanced Surgical Rehabilitation Hospital

Services Provided:

- Mechanical
- Electrical
- Plumbing
- Nurse Call
- Fire Protection/Alarm

Estimated Budget: \$17M
Facility Area: 67,000 ft²
Owner: AOR Group



Interactive collaboration with the physician owners and contractor was the guiding principle behind the success of this project. Each and every system within the hospital was designed for and met precise health care compliance standards. Specifications for ventilation, electric, plumbing, HVAC and medical gas safety were all applied to the constructible design. Quality assurance and design aspects were satisfied by many intensive site visits as well as consistent communication with the contractor. Real time answers and coordination enabled the client to meet a fast-paced construction deadline which if missed would have had severe government regulatory repercussions and detrimental business outcomes.

Project Contact:
Rick Briggs
Lutz Myers & Associates, Inc.
(724) 758-5455

Project Experience – Electrical Upgrade and HVAC Renovation

Dominion Post – Greer Building

Morgantown, WV

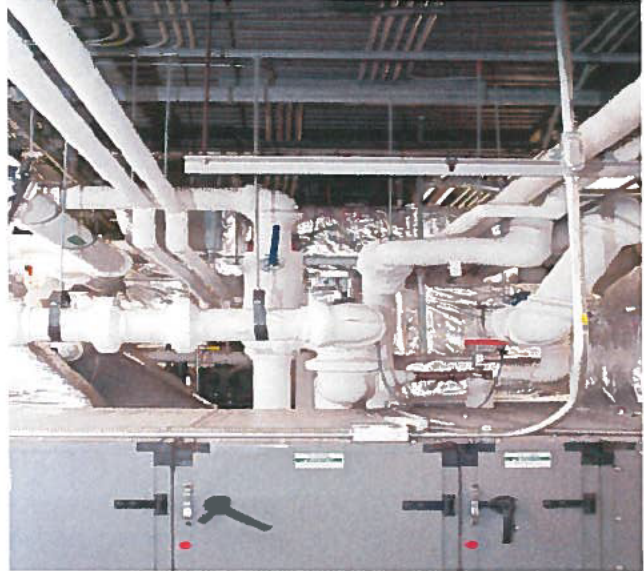
Services Provided:

- Field Study
- HVAC Upgrade
- Electrical Upgrade
- Construction Administration

Estimated Budget: \$1.8M

Facility Area: 18,000 ft²

Owner: Greer Industries, Inc.



MEI was asked to evaluate the HVAC systems and report our findings. During the field study, Miller Engineering learned of HVAC system disintegration, air quality concerns, and interconnection of air systems between two levels of the building. Our study revealed the need for a complete HVAC upgrade but also for the need to upgrade the power prior to the HVAC work. MEI design an electrical upgrade and implemented that while completing the HVAC design work. Our study included an evaluation of the existing backup generator, which we determined could be re-used. The goal of the project was to be a phased approach that integrated, updated and stabilized temperatures throughout the current floor plan, building levels and pending office reconfigurations. The main air handling systems, piping and ductwork were replaced and reconfigured as a necessity to serve the building's multiple levels and floor plan. The project was a success as a newly designed system was implemented into the existing floor plan and designed as scalable for future needs of the building's owner. Temperature control issues were resolved and the residents of the building could enjoy a more hospitable, consistent working environment. The Greer Building also serves as an emergency broadcast center for north central WV. MEI coordinated all aspects of construction with the owner to ensure there were no issues preventing the operation of the facility during construction.

Project Contact:

Chris Halterman, Director of Operations

The Dominion Post

Greer Industries, Inc.

Phone: (304) 376-2642

Project Experience: MEP

Cacapon Lodge Addition & Renovation

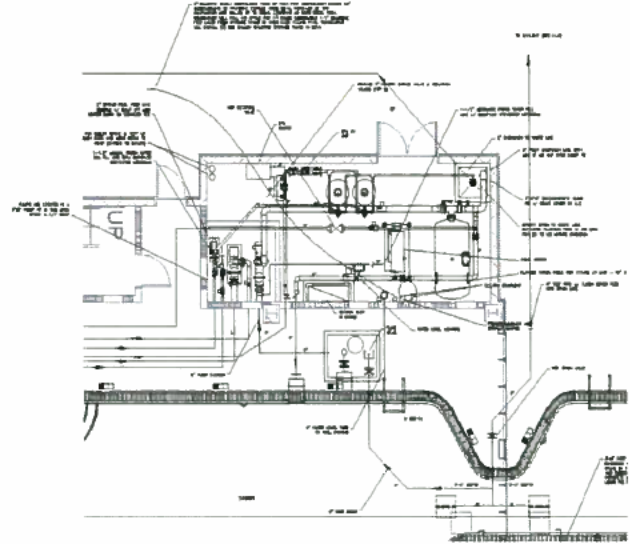
Services Provided:

- Electrical
- Plumbing
- HVAC
- Fire Alarm
- Fire Protection
- Pool

Estimated Budget: \$26M

Facility Area: 113,000 sq ft

Owner: WV Department of Natural Resources



Miller Engineering teamed with Paradigm Architecture to design the addition to the lodge at Cacapon State Park. The addition includes approximately 80 guest rooms, new kitchen and dining areas, a spa, indoor/outdoor pool, and support spaces. All of the utilities were upgraded. A new boiler / chiller plant will be installed with distribution to local air handling units. The electrical service includes an upgrade to 480V while using the existing distribution panels where possible as local branch panels. The project is currently under construction.

Project Contact:
Bradley S. Leslie, PE, Assistant Chief
WVDNR State Parks Section
(304) 558-2764 ext. 51826

Descriptions of Past Projects Completed – Electrical

Huntington Floodwall Pump Station Automation

Huntington, WV

Services Provided:

- Backup Power
- Electrical
- Controls

Budget: \$780K

**Owner: Huntington Stormwater
Utility**



Miller Engineering worked with Potesta and Associates to design upgrades to the automation of the seventeen floodwall pump stations which serve the city of Huntington, WV. These stations consist of both storm water and sewage pumps. The pump stations will utilize SCADA units with cellular capability to monitor and transmit alarms to a central station. The pumps are large, belt-driven pumps which require an oiling system to lubricate the belts. MEI worked with Potesta to allow the SCADA system to monitor the status of both the large pumps and the oiler pumps for the belts along with tracking run time. The original mercury float system will be replaced with a transducer float system which will communicate the water level at each pump station in addition to turning off the storm water pumps whenever the water level returns to normal levels. The automation system along with branch power and lighting is served via a separate 120/240V service at each station. The existing 120/240V services will be upgraded with new electrical panels and a service rated manual transfer switch. The transfer switch will allow the Stormwater Utility staff to connect a portable generator at each facility to keep the automation and monitoring online. The project has been bid and is under construction.

Project Contact:
Mark Sankoff, PE
Potesta & Associates
(304) 342-1400

Budget and Timeline History

Project Name	Project Type	Budget	Cost	Notes
Bluestone State Park	Pool Replacement	\$1,000,000	\$935,600	On budget
West Virginia State Building 25	HVAC Piping Renovation	\$650,000	\$533,400	On budget
Canaan Valley Resort	Emergency Electrical Repairs	\$225,000	\$129,829	On budget
Holly Grove Manor	Renovation	\$885,000	N/A	On hold
Mapletown Jr/Sr High School	HVAC Renovation	\$1,050,000	\$1,105,900	5.19% over budget
Pipestem – McKeever Lodge	HVAC Piping Replacement	\$1,600,000	\$1,776,000	10.43% over budget
Tygart Lake State Park	Beach and Bathhouse	\$750,000	\$695,000	On budget

 = Delivered on budget/on time

Budget and Timeline History

Project Name	Project Type	Contract Length	Contract Delivery	Notes
Blackwater Falls State Park	Boiler Replacement	120 days	180 days*	*Extended 60 days due to equipment delivery issues
Bluestone State Park	Pool Replacement	180 days	180 days	Delivered on time
Canaan Valley Resort	Construction Administration	3.5 years	3.5 years	Long-term project with varying facets – no direct schedule
Twin Falls/Hawks Nest Lodge	HVAC Renovation	90 days	90 days*	*Expedited delivery
Mapletown Jr/Sr High School	Boiler/ HVAC Renovation	180 days	180 days	Delivered on time
Pipestem – McKeever Lodge	HVAC Piping Replacement	365 days	365 days	Delivered on time
Tygart Lake State Park	Beach and Bathhouse	270 days	270 days	Delivered on time

What our satisfied customers have to say...

“Hard working, do-whatever-it-takes, diligent team that provides excellent customer service is what you can expect from Miller Engineering.”

--Chris Halterman, Dominion Post, Morgantown

“As a design/build team, working with Miller Engineering, our project involving a private surgical hospital together was a success – completed ahead of schedule and on budget. Miller worked with us throughout the project to consult, engineer and inspect the mechanical systems. Craig Miller, PE and his staff are working with us again, and are very important members of our design/build team. I highly recommend their services.

--Richard J. Briggs

<p>Brad Leslie, PE <i>Assistant Chief WV Division of Natural Resources State Parks Section 324 4th Avenue South Charleston, WV 25303 (304) 289-7663 Bradley.S.Leslie@wv.gov</i></p>	<p>Paul Braham <i>Associate Director of Maintenance & Engineering Mylan Pharmaceuticals 781 Chestnut Ridge Road Morgantown, WV 256505 412-519-9846 304-554-5626 Paul.Braham@mylan.com</i></p>	<p>Gregory L. Melton <i>Director WV General Services Div. 401 California Ave. Building 4, 5th Floor Charleston, WV 25305 (304) 558-1808 304-965-1219 Gregory.L.Melton@wv.gov</i></p>
<p>Bob Ashcraft <i>Safety and Ancillary Projects Monongalia County Schools 533 East Brockway Street Morgantown, WV 26501 (304) 276-0152 rbashcraft@access.k12.wv.us</i></p>	<p>Dave Parsons <i>Energy Program Manager WV General Services 112 California Avenue Building 4, 5th Floor Charleston, WV 25305 (304) 957-7122 David.K.Parsons@wv.gov</i></p>	<p>Richard J. Briggs <i>Vice President Lutz Briggs Schultz & Assoc. Inc. 239 Country Club Drive Ellwood City, PA 16117-5007 (724) 651-4406 lbsa@zoominternet.net</i></p>

From Jonathan Miller, Mechanical Project Manager, Nitro Mechanical:

“Miller Engineering is not your average engineering company; they work with the owner AND the contractor to solve all issues that arise throughout the project to make the process as fluid as possible”



TAB 4 – METHODOLOGY & APPROACH



Project Methodology & Approach

Evaluation

Miller Engineering will begin the design process by reviewing all existing documentation related to the site normal and emergency power distribution related to Camp Dawson. Reviewing documents will give MEI an initial understanding of the facilities which will be confirmed or adjusted through an extensive on site evaluation of the facilities. Evaluations of both existing documents and site visits will allow the design team to create initial building models and one-lines of the electrical distribution. MEI will utilize building information modeling (BIM) via Autodesk REVIT to create models and therefore drawings of the facilities' areas of impact.

Schematic

After reviewing all documentation and site evaluation notes and developing an initial approach method, MEI will meet with the owner. The meeting will involve all stakeholders to gain an understanding of the intended project outcomes. Items of discussion will involve prioritization of systems for load shedding, automation and controls of the transfer switches and generators, and phasing of the construction including utility outages. Miller Engineering's staff has backgrounds in construction, maintenance, and operations which provide a unique perspective as we do not just think "Will it work?" but also consider "How will it be installed?" and "How well can it be maintained to work as intended?" A majority of MEI's past projects include renovations which must be phased as the owner still occupies the facility. MEI will work with the owner to determine the maximum amount of facilities can be taken out of service at one time and the duration of these outages. These ramifications, in addition to any occupancy disruptions anticipated, would be discussed with the owner. The initial schematic design will be the basis of the 35% documents. MEI will provide cost estimates using real material quotes and take-offs to convey projected costs to the owner.

Design Development

MEI will take input from the owners based upon review of the 35% design documents and proceed. While the requirements of the EOI give specific milestones for progress sets (35%, 65%, 95%, & 100%), MEI will not wait until the next progress set to speak with the stakeholders if questions arise. Our philosophy is that the sooner issues are brought forward and addressed, the less they cost the project in time and money. During design development is when MEI anticipates the initial coordination study to occur. MEI will use the assistance of EESS to perform this coordination study. Any results of this study which affect the design and budget will be relayed to the owner with a feeling of the magnitude of the result. The estimate will also be updated regularly as MEI treats the estimate as a "living document." Any changes or inputs from the owner, as well as other changes made during proceeding with design development, will be reflected in the estimate. MEI believes in giving the owner the information necessary, including budgetary effects, to make informed decisions regarding the design. The 65% and 95% progress sets will reflect the outcomes of the formal and informal discussions with the owners.



Construction Documents

The construction documents will be completed using both the results of the progress set reviews and internal peer review. MEI understands that while working on a project, engineers and designers can get "tunnel vision", meaning they see what they want to see reflected in the documents. All drawings and specifications issued by Miller Engineering go through a three step peer review internally to ensure the intent of the document is clearly transmitted. The final 100% construction document set will be issued to the owner for bidding, along with our best estimate of probable cost.

Bidding

During bidding, Miller Engineering will assist the owner to successfully procure bids for the upgrades. MEI will be present during the pre-bid meeting to discuss the technical scope of work for the project. Any technical questions from contractors or vendors to the owner during bidding will be answered by MEI. MEI will provide addendum documents as needed. MEI will also assist in reviewing bids and making recommendations to the owner. We have completed many projects through WV State Purchasing, and understand the requirements to successfully bid a project with the state of West Virginia.

Construction Administration

After bids are received and the contract awarded, MEI is not a firm that disappears until the final punch list. MEI will provide thorough construction administration (CA) services as agreed upon with the owner. We will be present for a construction kick-off meeting to make sure the project gets off on the right foot. MEI believes in being present at construction progress meetings and making informal site visits to keep the project on track. Our background in construction and operations allows us to understand the sequencing of construction in the field to better aid the contractors when questions arise. One of MEI's main beliefs is that any requests for information (RFIs) submitted by the contractor should be reviewed and answered within one business day if possible. This is because we understand that delays in RFI responses can lead to additional costs and construction days. If necessary, we will provide an informal answer and follow up with the formal response to keep the project rolling. During progress meetings and site visits, any issues discovered by MEI will be relayed to the owner and contractor immediately to prevent delays. Another company standard is for our staff to be present for testing and balancing (TAB), equipment start-up, and owner training. While these events occur at the very end of the project, they are critical to ensure the new systems operate as designed. MEI will be on hand for these activities to quickly answer any questions and confirm these items are performed properly in accordance with the construction documents.



TAB 5 – PROJECT FORMS





Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Expression of Interest
 Architect/Engr

Proc Folder: 929712			Reason for Modification:
Doc Description: Transfer Switch Gear Design Camp Dawson			
Proc Type: Central Purchase Order			Version
Date Issued	Solicitation Closes	Solicitation No	
2021-08-26	2021-09-09 13:30	CEOI 0603 ADJ2200000004	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

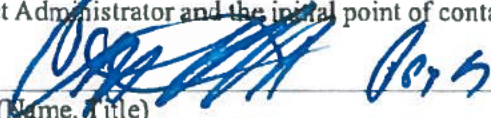
Vendor Customer Code:
 Vendor Name :
 Address :
 Street :
 City :
 State : Country : Zip :
 Principal Contact :
 Vendor Contact Phone: Extension:

FOR INFORMATION CONTACT THE BUYER
 Tara Lyle
 (304) 558-2544
 tara.l.lyle@wv.gov

Vendor Signature X  FEIN# -1386 DATE 9/8/2021

All offers subject to all terms and conditions contained in this solicitation

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.



(Name, Title)
Craig Miller, PE - President

(Printed Name and Title)
54 West Run Rd. Morgentown, WV 26508

(Address)
(304) 291-2234

(Phone Number) / (Fax Number)
cmiller@millereng.net

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

Miller Engineering, Inc.

(Company)



(Authorized Signature) (Representative Name, Title)

Craig Miller, PE - President

(Printed Name and Title of Authorized Representative)

9/8/2021

(Date)

(304) 291-2234

(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Miller Engineering, Inc

Authorized Signature: [Signature] Date: 9/8/2021

State of West Virginia

County of Monongalia, to-wit:

Taken, subscribed, and sworn to before me this 8th day of September, 2021

My Commission expires September 16, 2024.

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature]

