

# Expression of Interest

## Multiple UPS & Generator Replacements

For  
WV Department of  
Administration  
Purchasing Division  
EBAr70938\_EOI

Charleston, WV

08/10/22 09:54:27  
WV Purchasing Division

August 11, 2022



Prepared by:

**H.F. LENZ  
COMPANY**

*Engineering*

1407 Scalp Ave  
Johnstown, PA 15904

HFL File: 2022-8006.58

Johnstown, Pittsburgh, Lancaster, PA | Conneaut OH | Middletown CT



**H.F. LENZ  
COMPANY**

*Engineering*

1407 Scalp Avenue  
Johnstown, PA 15904  
Phone: 814-269-9300

August 9, 2022

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

Subject: Expression of Interest  
EBAr70938\_EOI, Multiple UPS and Generator Replacements  
SOL NO. CEOI EBA2300000001

Purchasing Division:

H.F. Lenz Company (HFL) is enthusiastic about the opportunity to provide the Engineering Services required for the replacement of UPS and generators at multiple WV Educational Broadcasting Authority sites in West Virginia. The analytical skills, design capability, creativity, and overall knowledge possessed by our Team will enable us to successfully complete all aspects of the work within the allotted budget and timeframe. Our Team is fully prepared to bring the following strengths and benefits to this project:

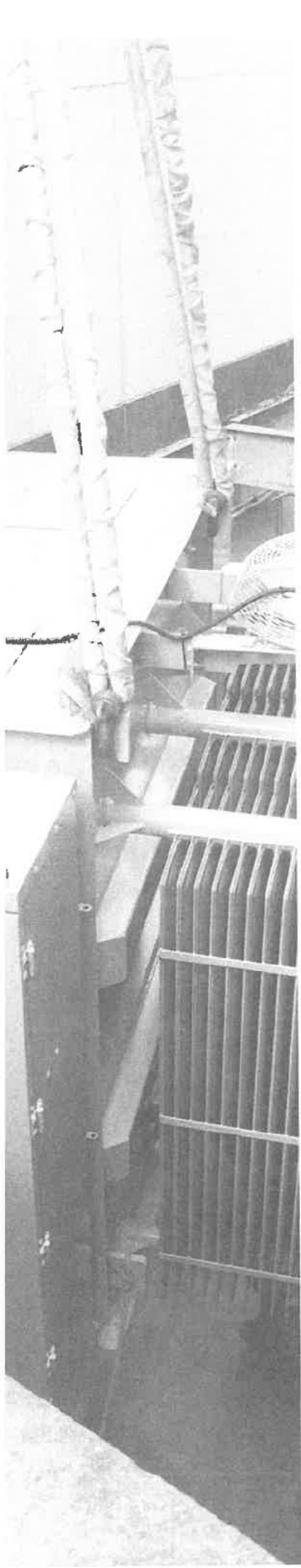
- Extensive experience with UPS and standby generator projects gained through our four decades of designing highly reliable electrical systems for mission critical facilities.
- 30 years' experience working throughout the state of West Virginia for state and federal agencies, universities, healthcare facilities, and private industry.
- Senior-Level Personnel. Our Team consists of senior-level professionals who will remain involved with the project throughout its duration.
- Depth of qualified personnel to quickly add staff to the project to meet increased project demands or accelerated schedules.
- Firm Stability. This is our 76th year in business. We have one of the lowest rates of employee turnover in our industry.
- Proven ability to work in collaboration with Owners and other consultants throughout the project while placing the Owner's interests first.

Thank you for the opportunity to submit this Expression of Interest. We look forward to the next steps in the selection process, including a possible oral presentation. In the meantime, we will be happy to answer any questions you may have regarding our submission.

Sincerely,

H.F. LENZ COMPANY

Joel C. Shumaker, P.E., LEED AP  
Principal



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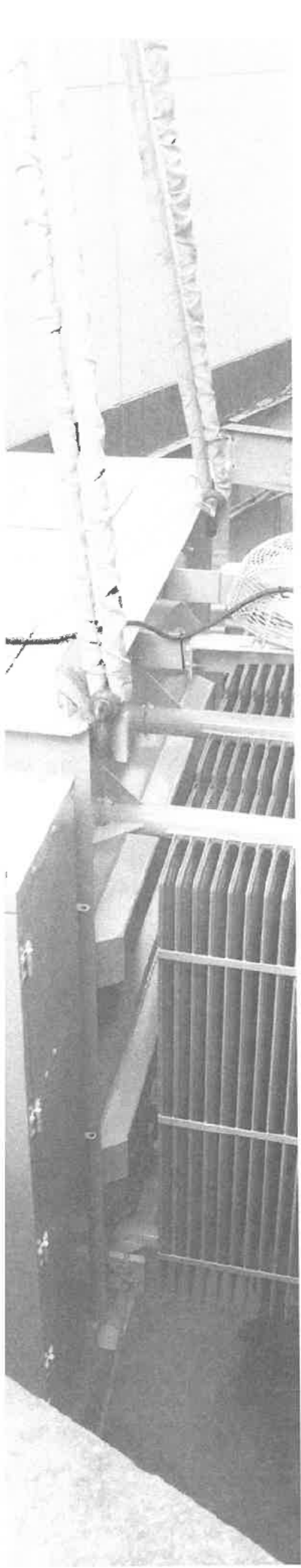
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## Tab 1. Firm Profile & Relevant Experience

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## H.F. Lenz Company

H.F. Lenz Company was established 1946 in its present form, under the name H.F. Lenz Company, R.E., and in 1953 the company was incorporated, as a Private Corporation, in Pennsylvania as H.F. Lenz Company. Our projects span the nation, with the heaviest concentration in the Northeast, and exceed \$600 million in MEP, Civil and Structural construction annually. Each market sector—corporate, government, health care, education, and industry—is served by a team of specialists who understand the unique needs of the clients they serve. Our staff consists of 170+ individuals, including 44 Licensed Professional Engineers and 17 LEED Accredited Professionals. Our headquarters is in Johnstown, Pennsylvania with branch offices in Pittsburgh, Pennsylvania; Lancaster, Pennsylvania; Conneaut, Ohio; and Middletown, Connecticut.

### DISCIPLINES/SERVICES OFFERED IN-HOUSE INCLUDE:

- > Mechanical Engineering
- > Electrical Engineering
- > Data/Communications Engineering
- > Fire Protection / Life Safety Engineering
- > Structural Engineering
- > Civil Engineering
- > Surveying
- > GIS
- > Construction Phase Services
- > Commissioning and Training
- > 3D CADD with Full Visualization
- > Energy Modeling
- > Sustainable design/LEED Services
- > Building Information Modeling (BIM)

### UNINTERRUPTIBLE POWER SUPPLY SYSTEMS (UPS)

Our experience with UPS systems involves the evaluation and design for both new UPS installations and the life cycle replacement of existing systems. New UPS system designs have been up to 48MW of usable capacity plus redundancy. Life cycle replacements have typically been from either legacy rotary or static systems to new static systems and have at times required custom cabling cabinets to adapt input and output connections from existing infrastructure to new equipment.



Our Engineers have extensive experience with UPS replacements in active "hot" facilities where critical operations must be maintained throughout the construction phase. We have successfully designed UPS projects for Federal agencies, enterprise data centers, colocation/managed services data centers, hospitals, and other facilities that depend upon reliable, uninterrupted power.



**Johnstown Headquarters**  
1407 Scalp Avenue  
Johnstown, PA 15904  
Phone: 814-269-9300  
Fax: 814-269-9301

**Lancaster Office**  
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Lancaster, PA 17601  
Phone: 717-461-3615

**Pittsburgh Office**  
1051 Brinton Road  
Pittsburgh, PA 15221  
Phone: 412-371-9073

**Ohio Office**  
322 State Street  
Conneaut, OH 44030  
Phone: 440-599-7800  
Fax: 440-599-7801

**Connecticut Office**  
101 Centerpoint Drive  
Suite 237  
Middletown, CT 06457  
Phone: 860-316-2124



### On-site Power Generation

Our extensive experience with onsite power generation includes generator systems for data centers, office buildings, hospitals, and other facilities that require a reliable source of alternate electrical power. We have specified both diesel and natural gas-driven generators with kilowatt ratings ranging from 50 kW to 2,500 kW each. Voltages are commonly 277/480 volts, but we have designed systems with generator voltages as high as 13.8 kilovolts. Almost every building we design includes a generator to provide on-site power generation. We design over 150 projects a year that require low-voltage generators for emergency power, standby power, or life safety applications. Our engineers are very familiar with designing systems where two or more generators are paralleled to increase the total kilowatt rating. We also provide complete load shedding controls for facilities who wish to save on their annual electric costs by becoming a utility curtailing customer



### PHILOSOPHY

Two essential prerequisites lay the foundation for every H.F. Lenz Company project. First, we take the time to understand the client's business and how it operates. Second, we proactively involve the client in the development of appropriate solutions. In our role as partner, we help the client understand how well the available alternatives satisfy the project's own unique, prioritized set of objectives.

A remarkable 90 percent of our work consists of repeat commissions from clients who appreciate our responsive, value added service.

### LEED®

Our firm has been a member of the U.S. Green Building Council since 2000 and we currently have 17 LEED® Accredited Professionals on staff. Our experience includes 120+ projects that have attained various levels of LEED Certification and numerous additional projects designed for various levels of LEED Certification, in total nearly 20 million sq.ft. of facilities.



## Progressive Insurance Company

Westerville, Ohio

### EAST DATA CENTER UPS REPLACEMENT

The objective of this project was to replace end-of-life uninterruptible power supply (UPS) modules, and associated battery systems in an existing, active data center.

The replacement of the centralized static bypass UPS systems, while serving the critical environment, required construction to be split in two phases. Additionally, temporary UPS systems were brought in to maintain the 2N electrical topology during the replacement of the critical UPS equipment.

#### Construction Phase 1:

- › Removal of existing System A UPS modules, flooded/wet-cell batteries, centralized static switch
- › Installation of temporary UPS system to maintain 2N critical load
- › Installation of new 750 kW UPS modules and lithium-ion battery solution
- › Installation of UPS Output Isolation switch (for redundant UPS output pathway)
- › Commissioning of new multi-module UPS system in active data center

#### Construction Phase 2:

- › Removal of existing System B UPS modules, flooded/wet-cell batteries, centralized static switch
- › Installation of temporary UPS system to maintain 2N critical load
- › Installation of new 750 kW UPS modules and lithium-ion battery solution
- › Installation of UPS Output Isolation switch (for redundant UPS output pathway)
- › Commissioning of new multi-module UPS system in active data center

**Completion Date: 2021**

#### PROJECT REFERENCE:

Mr. Fred Hulme  
Facility Manager, Facility Operations  
Progressive Insurance Co.  
614-440-4044  
40-603-5454  
fred\_hulme@progressive.com



## Carnegie Mellon University

Pittsburgh, Pennsylvania

### SEI DATA CENTER

The Software Engineering Institute (SEI) at Carnegie Mellon University serves the nation as a federally funded research and development center. The SEI works with governmental agencies, industry, and academia to improve software-intensive systems.

The first phase of the project consisted of an evaluation of the SEI's machine rooms and the associated critical infrastructure. The objective was to improve the internal operations and reliability of the data center. Issues investigated included load densities, water within the machine rooms, cooling options, ventilation, backup power generation, existing equipment age, and space configuration and utilization.

#### Key features of the project include:

- › Electrical distribution upgrade
- › **New 240 kVA UPS System**
- › Six (6) 30-ton CRAC units
- › New automatic temperature controls
- › New drytype sprinkler system
- › Fire alarm upgrade

The reconfiguration of the machine room was designed to increase cooling to the racks, improve security, and provide for improved maintenance access. A new building automation system was also installed to improve reliability and monitoring.

The project involved multiple phases to implement the systems changeover while maintaining full operations

**Completion Date: 2010**

#### PROJECT REFERENCE:

Arnold Major – Campus Design & Facilities  
Development  
Carnegie Mellon University  
412-268-5020  
arnaj@andrew.cmu.edu





## Government Sponsored Enterprise

DC - Mission Bay

### DATA CENTER UPS AND GENERATOR UPGRADE

To support the IT migration of critical applications from another data center and to meet future business needs, this large financial Client identified that their main Data Center's critical infrastructure must be increased in capacity in two of its three existing 20,000 sq.ft. Data Center Bays. The initial project focused on the specific scope inclusions required to support the additional electrical capacity including:

#### Key features of the project include:

- › Addition of **four (4) UPS Modules (750 kVa / 675 kW)** to the existing sixteen (16) modules to maintain N + 1 in active UPS systems
- › Installation of **one 2,500 kW Tier 4i generator** to maintain (N + 1) redundancy in an active data center
- › Additional batteries for the new UPS Modules
- › Controls for electric distribution equipment and emergency backup systems
- › Electric Power Monitoring System (EPMS) for new equipment including integration with the existing EPMS system
- › Support for Commissioning and Start-up of new equipment
- › Construction coordination of all activities including the development of Method of Procedure ("MOP") and change control coordination



#### PROJECT REFERENCE:

Stephen Hay – VP of Critical Environments  
Mark G. Anderson Consultants  
02-942-3928  
hay@mgac.com

**Cost: \$12.8 million (entire project)**

**Completion Date: 2014**

## Yale University

PROJECT REFERENCE: 1118

### WEST CAMPUS DATA CENTER UPS & GENERATOR UPGRADES

H.F. Lenz Company provided the Mechanical, electrical and fire protection systems upgrades on the master infrastructure-planning project of Yale's 4,500 sq.ft. administrative data center. Projects consisted of study and planning, design, construction, and commission phases.

#### 2017 Study

- › Upgrade the electrical and mechanical systems to a 2N system in order to be currently maintainable and meet 99.999% uptime

#### 2018 Upgrades

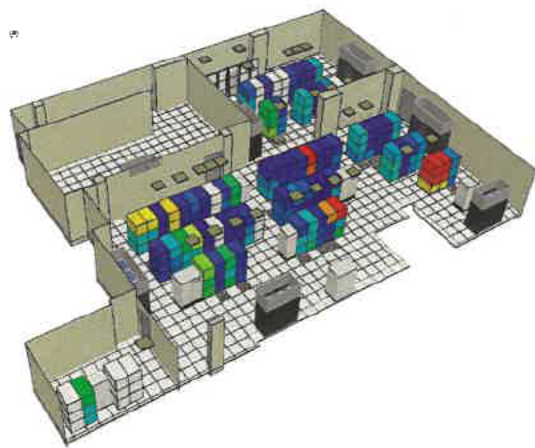
- › Phase 1 consisted of design and installation of new 'A' side UPS, ATS, PDUs and final power connections to all racks. All computer room air conditioners were replaced and converted from DX to chilled water cooling from the campus loop and additional units added to increase reliability. Demo of existing dry coolers and addition of backup air cooled chiller along with replacement of makeup air unit. CFD analysis was conducted to show maximum room temperatures in normal and failure modes. Additionally all construction phasing to accommodate upgrades to an active data center was coordinated to minimize downtime and provide essential data center functionality. \$1.1 million project completed December 2018

#### 2019 Upgrades

- › New 500 KW emergency backup diesel generator with 2,000 gallon remote fuel tank and 250 ft duct bank to protect feeders
- › New generator tied into existing ATS and tested
- › New EPO system and shunt trips installed and functionally tested \$600,000 project completed July 2019

#### 2020 Upgrades

- › New FM200 control panel, sensors and code evaluation
- › Updated FM200 purge fan and ductwork, designed, and coordinated fully redundant HVAC BAS control panel
- › \$400,000 project currently in construction with target completion date by January 2020.



#### PROJECT REFERENCE:

Chris Tiseo  
Senior Director, Foundational Technologies Services  
Yale University  
100 Munson Street  
New Haven, CT 06511  
203-432-2522  
tiseo@yale.edu

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## University of Pittsburgh

Pittsburgh, Pennsylvania

### WILLIAM PITT UNION GENERATOR REPLACEMENT

H.F. Lenz Company provided the complete design of a replacement generator for the William Pitt Union (WPU) at the University of Pittsburgh, Oakland campus. The services included all electrical engineering as well as the associated architectural, mechanical, and structural design.

The existing diesel generator was put into service in 1986. The new 230 kW diesel generator was sized appropriately to power the existing loads and new loads necessary to meet current codes.

The new generator has dedicated life-safety and option-standby circuit breakers. Code-required modifications to the existing life-safety and optional-standby distribution due to the dedicated circuit breakers were included in the design.

An installation plan was prepared to minimize outage time during the installation.

**Completion Date: 2019**

#### PROJECT REFERENCE

Mr. William Kane  
Senior Project Manager  
University of Pittsburgh  
100 Forbes Avenue  
Pittsburgh, PA 15260  
412-383-5717  
k10@pitt.edu



## PSU Milton S. Hershey Medical Center

Hershey, Pennsylvania

### EMERGENCY POWER FOR CAMPUS FIRE PUMPS

HFL provided the engineering services to install an emergency power system to support the campus fire pumps and the back-up campus building operations center. The design covers all aspects of the installation including a site plan identifying the location of generator, existing utilities, size of generator, and fuel tank size. The installation requirements include all DEP and L&I regulations, consideration of the path for electrical feeders through the site, and the location and size of all other necessary equipment to include additional panels, transformers and transfer switches, and new fire pump controllers.

### OBJECT REFERENCE

Matthew Grimes  
Utilities Project Manager  
Penn State Hershey Medical Center  
m.grimes@pennstatehealth.psu.edu  
717-926-3951

### EMERGENCY POWER FOR THE LIFE LION HANGAR

HFL provided engineering services to provide emergency power for the 10,180 sq. ft. building that houses the Life Lion critical care transport helicopter fleet and flight operations.

The project includes developing full construction documents and construction administration for the installation of the emergency power system. Critical items include, but are not limited to, the main hangar door motors and controls, fuel pumping system, landing pad and marker lighting, building emergency lighting and security system.

The design includes all aspects of the installation including a site plan identifying the location of generator and natural gas supply line, compatibility of the generator to the building electrical system, consideration of the path for electrical feeders through the building, and the location and size of all other necessary equipment to include additional panels, transformers and transfer switches.

**Construction Cost: \$550K**

**Completion Date: 2021**





## Additional UPS Projects

### Nationwide Insurance

[View Project Details](#)

#### UPS REPLACEMENT AND ELECTRICAL MODIFICATIONS IN AN ACTIVE DATA CENTER

H.F. Lenz Company was selected for the engineering design of electrical upgrades and modifications to Nationwide Insurance Company's South Data Center in downtown Columbus, Ohio. The project, which **involved an operating data center**, consisted of replacing the UPS System, battery room modifications, and ancillary electrical system modifications.

#### Key features include:

- › Investigate existing conditions—available floor space, electrical system configuration, equipment access, loading capacity of floor structural capacity
- › Design and installation of four (4) new 500 kVA UPS modules in an N + 1 configuration and a 3000A Systems Control Cabinet in same room as five (5) existing 400 kVA UPS modules while existing UPS system remained in operation
- › Modified existing UPS battery feeders and batteries in remote battery room to permit the installation of the new battery strings for the modules associated with the new UPS System
- › Designed associated electrical system modifications including temporary and permanent feeders
- › Designed HVAC, Lighting and fire suppression systems modifications
- › Performed Construction Administration for the project
- › Commissioned new UPS System and transferred from existing to new system



### Atos Data Center

[View Project Details](#)

#### UPS LIFE CYCLE REPLACEMENT AND ELECTRICAL UPGRADES IN AN ACTIVE DATA CENTER

H.F. Lenz Company is providing the Electrical, Mechanical, Plumbing, Fire Protection, Structural, and Architectural design services for the UPS Life Cycle Replacement and Electrical Upgrades at a former Xerox data center located near Pittsburgh, PA. The services include developing an installation phasing program and sequence narrative to allow the data center to remain operational during construction.

#### Key features include:

- › Building 1: Replace two (2) existing three module 600 kVA UPS systems with **two (2) new three module 750 kVA UPS** systems in a 2N configuration

[View Project Details](#)

- › Building 2: Replace one (1) existing four module 600 kVA UPS system with one (1) new four module 750 kVA UPS system in a 2N configuration
- › Electrical system revisions to accommodate the new UPS system infrastructure
- › Mechanical system revisions to relocate existing cooling units
- › Fire protection modifications to accommodate room changes
- › Structural modifications for slab supports of battery systems and pads for new equipment
- › Architectural revisions to address means of egress, wall partitions, penetrations, ceilings, etc.
- › An electrical device coordination study and arc flash hazard analysis for the electrical system infrastructure
- › Construction Administration and Commissioning for the project

## Confidential Federal Agency

Part of a Limited Offer

### UPS SYSTEMS REPLACEMENT

H.F. Lenz Company was part of a 100% turnkey project that provided all engineering design, materials, installation, construction administration, and testing activities in connection with a UPS system replacement at a federal agency's data center. The purpose of the project was to increase reliability and provide for the longevity of the critical electrical equipment serving the data center. A major requirement of the Government was that the critical busses within the data center would not suffer any interruption to power at any time during the project.

H.F. Lenz Company provided the following electrical engineering services for the upgrade:

- › Replaced the existing sixteen (16) 750 kVA modules with **sixteen (16) new 750 kVA modules**
- › Design for replacement of all four (4) static bypass switches
- › Existing over tie system was replaced by an automatic maintenance bypass throw over control system that transfers the UPS systems to the bypass switchboard in the event of power loss to the UPS main input

The project was successfully completed on time and now provides the data center with the highest possible power reliability and availability. All work was accomplished without disruption to the critical data center loads or data center support systems. All systems were fully load tested before turn over.





## Internal Revenue Service

Philadelphia, Pennsylvania

### IRS DATA CENTER UNINTERRUPTIBLE POWER SUPPLY SYSTEM

Under an open-end contract with the General Services Administration, the H.F. Lenz Company designed an uninterruptible power supply (UPS) system for a 445,000 sq.ft. data center for the IRS Service Center in Philadelphia. The UPS system serves three main computer systems with over 900 terminals. The project earned a national *GSA Design Award*.

#### Key features include:

- › New 2,400 kVA multi-module parallel-redundant UPS system
- › New dedicated double-ended substation fed from two 13.2 kV primary power sources
- › 480 volt clean power distribution system
- › Alterations and modifications to existing 480 volt distribution system
- › Replacement of secondary switchgear in a unit substation.
- › Design of building addition to house a new substation and UPS equipment
- › Air conditioning and ventilating system
- › Emergency generator system
- › Remote monitoring of the UPS system and the UPS system air conditioning at five different locations in the building



## Equinix, Inc.

Atlanta, Georgia

### COLOCATION DATA CENTER EXPANSION – NY4 PHASE III

H.F. Lenz Company was selected for the design of Phase III of this existing data center, which added 52,000 sq.ft. of critical white space. Services provided by HFL included project management, mechanical, electrical, plumbing, fire protection, and structural engineering design services and construction administration services. Architectural, acoustical engineering and wind study services were provided through subconsultants to the H.F. Lenz Company. The project involved integration with a "hot site" where the data center remained operational throughout the construction phase.

#### Key features of the electrical portion of the project included:

- › Addition of twelve 1,000 kVA UPS modules in 5 + 1 block redundant electrical configuration
  - Each block consists of two 1000 kVA UPS units
  - Redundant block consists of two 1000 kVA UPS units
  - All Modules are synchronized using Liebert LBS load bus synchronizing system
  - Each load on the UPS block backed up by a breaker in the redundant block through Liebert STS2 static transfer switches







## Global Colocation Provider

*New York City, New York*

### NEW COLOCATION DATA CENTER – PHASE I

This global colocation services provided selected H.F. Lenz Company to provide the full E/A design services for their newest New York City area data center that will offer a full range of premium colocation, interconnection, and support services. New construction is to be accomplished in a total of six phases. Phase I included the construction of a new building of 232,000 sq.ft. with an office building attachment of 32,000 sq.ft.

#### Key features include:

- › Thirty-six **1,000 kVA UPS modules** in block redundant electrical configuration
- › Modular mechanical solution with 11,700-tons of cooling capacity
- › Thirty-six condenser water cooled rooftop units with adiabatic humidification for the colocation space with eleven more included for support spaces
- › Twenty 3 MW diesel generators
- › Tier III with N + N at RPP level
- › Three electrical services provided in six entries to three double ended MV substations



## Equinix, Inc.

*Annandale, Virginia*

### NEW COLOCATION DATA CENTER (DC6)

This Global Internet Business Corporation selected H.F. Lenz Company for the planning and full design of its new 140,000 sq.ft. data center, which was constructed with the goal of achieving LEED Certification. As the Prime Firm in an E/A Team; H.F. Lenz Company provided the Project Management, MEP/FP and data systems infrastructure engineering. Architectural services, civil, structural, wind, and acoustical engineering were provided by subconsultants to H.F. Lenz Company.

#### Key features of the electrical systems include:

- › Twelve **1,000 kVA UPS modules** in a 5 + 1 block redundant electrical configuration
  - Each block consists of two 1000 kVA UPS units
  - Redundant block consists of two 1000 kVA UPS units
  - All Modules are synchronized using Liebert LBS load bus synchronizing system
  - Each load on the UPS block backed up by a breaker in the redundant block through Liebert STS2 static transfer switches

- Loads Distributed through Liebert 300 kVA FPC power distribution units
- › Six 3.1 MW diesel generators, non-paralleled
- › Single electrical service with complete infrastructure to accept future second service
- › Project was awarded LEED Silver Certification

## Fortune 200 Company (Confidential Company)

Location: [Redacted] United States

### NEW ENTERPRISE DATA CENTER

This Fortune 200 Corporation selected H.F. Lenz Company for the planning and full design of its new 114,000 sq.ft. primary data center, which was designed for 250 mph winds. As the Prime Firm in an E/A Team, H.F. Lenz Company provided the Project Management, MEP/FP and Structural engineering services for the project. Architectural design and Civil engineering were provided by subconsultants to H.F. Lenz Company.

#### Key features of the electrical systems include:

- › 2,400 KW critical load; Tier-IV
- › 2N electrical with 2(N+1) UPS
  - 575 Volt **750 kVA multi module** UPS System consisting of five modules in an N+1 arrangement
  - 575 Volt 750 kVA single module UPS for Class A cooling
  - Loads distributed through 22 300 kVA FPC power distribution units in a 2N arrangement.
  - Individual IT cabinet loads fed through 78 FDC remote power panels in a 2N arrangement
- › Four paralleled 2050 KW diesel generators, 2N

***Project has been Uptime Certified Tier IV and has received a LEED Gold Rating.***





## Additional Emergency Power Upgrades and Replacement

### **MOUNT NITTANY MEDICAL CENTER** *Scranton, Pennsylvania*

- › Replacement of two 350 kW diesel generators with two new 1,000 kW generators and paralleling switchgear
- › Reconfiguration of the electrical distribution system to accommodate an emergency-only switchboard to distribute the generator's power to the various automatic transfer switches
- › The project also included modification and reconfiguration of feeders, switchboards, and panelboards

### **BNY MELLON CENTER** *Pittsburgh, Pennsylvania*

- › Upgrade of generator controls and paralleling switchgear to serve the emergency power needs of the 55-story high rise office tower

### **CARNEGIE MELLON UNIVERSITY** *Pittsburgh, Pennsylvania*

- › Relocation and addition of emergency generators for the Hunt Library, Porter Hall, and Baker Hall

### **VANGUARD CORPORATE CAMPUS** *Malvern, Pennsylvania*

- › Emergency generator upgrade providing full-building generation at six of the structures on the main campus to support trading operations
- › The new generators are housed in sound attenuated enclosures located within precast screen walls on grade to better facilitate maintenance



### **WEST VIRGINIA UNIVERSITY HOSPITALS – RUBY MEMORIAL HOSPITAL ADDITION** *Morgantown, West Virginia*

- › Emergency power system consisting of two new 800 kW diesel generators paralleled together via digital paralleling switchgear
- › The paralleling switchgear features a touch screen that permits the hospital engineer to monitor and troubleshoot the entire emergency power system from his desk.

### **WHITE HALL, WEST VIRGINIA UNIVERSITY** *Morgantown, WV*

- › Addition of a 600 kW emergency/standby generator to provide power to the life safety equipment in the building as well as power to the research laboratories

### **HERITAGE VALLEY HEALTH SYSTEM** *Greensboro, Pennsylvania*

- › Paralleled two existing 620 kW generators and a 930 kW generator to satisfy higher kilowatt requirements
- › If the paralleling equipment determines that the load does not warrant all of the generators, the 930 kW generator will shut down, but the other two will continue to run so as to provide some redundancy should one of them fail





- › The automatic transfer switches were replaced and individual branches of power for the Life Safety, Critical and Essential Equipment systems were thus established in order to comply with the National Electric Code
- › Upgraded 480Y/277-volt emergency distribution system

**MOUNT NITTANY MEDICAL CENTER** *State College, Pennsylvania*

- › Replacement of existing diesel generator (generator No. 3)
- › Replacement of automatic transfer switches and distribution panels

**SAINT JOSEPH'S PROVINCIAL HOUSE** *Springfield, Maryland*

- › Replacement of existing 750 KVA diesel generator with a 1250 KVA diesel generator along with a new 2000A emergency-only switchboard
- › The project Increased generator capacity and provided proper segregation of emergency, standby and optional standby branches
- › Included 12 new automatic transfer switches and downstream distribution and branch circuiting



**METROPOLITAN LIFE INSURANCE COMPANY** *Worthington, PA*

- › New 1500 kW diesel generator capable of supporting the entire 200,000 sq.ft. administrative office building
- › Added 3000-amp service entrance automatic transfer switch
- › Provided construction administration and commissioning

**FEDEX GROUND CORPORATE HEADQUARTERS** *Philadelphia, PA*

- › Added a third 900 kW diesel generator to provide for N + 1 redundancy for the 2,700 kW standby power system
- › Removed existing main-tie-main switchgear and installed new paralleling switchgear
- › Addition of six static transfer switches

**CHILDREN'S NATIONAL MEDICAL CENTER** *Washington, DC*

- › Facility-wide replacement of the emergency power distribution system
- › Replaced three 900 kW existing generators with additional and larger units



**UPMC BEDFORD** *Bedford, Pennsylvania*

- › Study of the emergency power distribution system throughout the facility
- › Evaluated emergency power head end equipment, various branches of the emergency system at each floor, and options for power distribution to the branch panels
- › Developed single-line diagrams, located proposed equipment on floor plans, and developed costs estimates

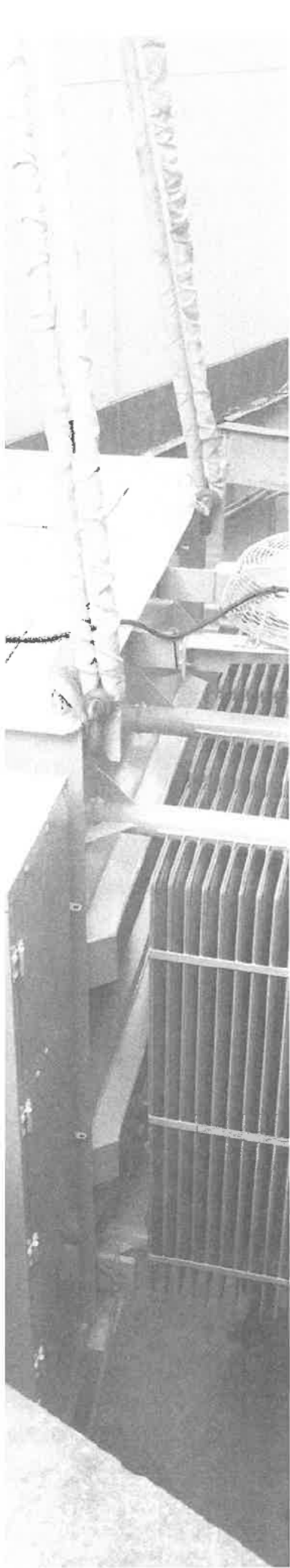




#### **TORRANCE STATE HOSPITAL** *Torrance, Pennsylvania*

H.F. Lenz Company was selected by the Pennsylvania Department of General Services to provide the engineering services for the electrical distribution upgrade at Torrance State Hospital, an inpatient mental health facility operated by the Pennsylvania Department of Human Services. The project included the addition of full-building generators to the following patient buildings:

- › Building 1, Greizman - Replacement of 150 kW standby generator and associated ATS
- › Building 2, Renner - Replacement of 48 kW standby generator and associated ATS
- › Building 4, Nurse's Residence - Replacement of 50 kW standby generator and associated ATS
- › Building 6, Wiseman - Replacement of 50 kW standby generator and associated ATS
- › Building 7, Beistel - Replacement of 50 kW standby generator and associated ATS
- › Cove Prep Adolescent Psychiatric Building - Addition of a 125 kW standby generator



## Tab 2. Resumes & Certifications

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## Joel C. Shumaker, P.E., LEED AP

*Principal in Charge*

Mr. Shumaker is experienced in the design of electrical and telecommunications systems for both new buildings and building retrofits for data centers, laboratories, health care, educational, commercial, government, industrial, residential, and utility-related facilities. As an electrical project engineer, Mr. Shumaker is responsible for client contact, project scheduling, preparation of reports and cost estimates, coordination and supervision of project design teams, and other project management functions.

### PROJECT EXPERIENCE

#### Government Sponsored Enterprise – Various Eastern U.S. Locations

- › Addition of four (4) UPS Modules (750 kVa / 675 kW) to the existing sixteen (16) modules to maintain N+1 in active UPS systems, Urbana, MD
- › Design for a 2,500 kW Tier 4i generator, Urbana, MD
- › Study and evaluation of the existing life safety generators at 13100 and 13150 Worldgate Drive, Herndon, VA

#### Yale University – New Haven, Connecticut

- › Addition of a 500 kW diesel generator in B25 Data Center
- › Build-out of a new 7,000 sq.ft. High Performance Computing (HPC) Data Center; included an expandable UPS system

#### First Data – Wilmington, Delaware

- › Evaluation and design of a new uninterruptible power supply (UPS) system to improve the electrical reliability of this data center

#### IRS Data Center – Philadelphia, Pennsylvania

- › Design of an uninterruptible power supply (UPS) system for a 445,000 sq.ft. data center, the UPS system serves three main computer systems with over 900 terminals

#### West Virginia University – Morgantown, West Virginia

- › Life safety upgrade of 95,500 sq.ft. White Hall including design for a 600 kW standby generator to support the life safety systems

#### University of Pittsburgh at Johnstown – Johnstown, Pennsylvania

- › Design for a 60 kW standby generator for the IT Department at Owen Library; included short circuit and arc flash analysis

### EDUCATION

Bachelor of Science, Electrical Engineering Technology 1993, University of Pittsburgh at Johnstown

### EXPERIENCE

H.F. Lenz Company 1985-Present

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in Pennsylvania, Connecticut, Delaware, Maryland, New York, Vermont, Virginia and West Virginia

### PROFESSIONAL AFFILIATIONS

Pennsylvania Society of Professional Engineers, Johnstown Chapter Secretary • National Society of Professional Engineers • Keystone Chapter of Association of Physical Plant Administrators • International Society of Pharmaceutical Engineers (ISPE)

# Your **ACTIVE PE** renewal fee has been received...

Your ACTIVE PE renewal fee has been received. Your pocket card indicating you are entitled to practice engineering in West Virginia until the noted expiration date may be detached and used unless invalidated as a result of Board audit of your renewal form or formal disciplinary action.

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3. You are required to immediately notify the Board, in writing, of the following: loss or theft of license or seal, any name change, any address change, or any employment change.

## West Virginia State Board of Registration for Professional Engineers

300 Capitol Street, Suite 910  
Charleston, West Virginia 25301  
304-558-3554 Phone  
800-324-6170 Toll Free  
[www.wvpebd.org](http://www.wvpebd.org)

**THIS IS ONE FORM OF YOUR RENEWAL RECEIPT**

**PLEASE SAVE THIS FOR YOUR RECORDS**

Date of Renewal: December 1, 2020  
Amount Paid: \$70.00



West Virginia State Board of Registration  
for Professional Engineers

**JOEL C. SHUMAKER**  
WV [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

**EXPIRES December 31, 2022**

JOEL C. SHUMAKER  
H. F. LENZ COMPANY  
1407 SCALP AVENUE  
JOHNSTOWN, PA 15904





## Scott A. Kraynak, P.E., LEED AP

Project Engineer - Electrical Department

Mr. Kraynak is responsible for the evaluation, design and commissioning of complex electrical systems for educational facilities, healthcare facilities, emergency operations centers and other critical operations where continuous and reliable electrical power is imperative. He has personally designed and supervised the design of electrical distribution systems, emergency and standby power systems, uninterruptible power supplies, computer room power systems including power conditioning equipment, PCB transformer removal and replacement, fire alarm and life safety systems, lighting and emergency lighting systems, public address systems, and telephone systems.

### EDUCATION

Bachelor of Science, Electrical Engineering, 2001, University of Michigan

### EXPERIENCE

H.F. Lenz Company 2013-Present •  
A/E Works, Ltd/ 2011-2013 • L.R.  
Kimball 2006-2011 • Burt Hill 2005-  
2006 • LLI Engineering 2001-2005

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in  
Pennsylvania, Alabama,  
Connecticut, Illinois, Kansas,  
Minnesota, Mississippi, Missouri,  
Ohio, Tennessee, Utah, Wisconsin,  
and Wyoming - Also a LEED  
Accredited Professional

### PROFESSIONAL AFFILIATIONS

Association of Energy Engineers

### PROJECT EXPERIENCE (\*indicates previous experience)

#### Yale University – New Haven, Connecticut

- › Design for new UPS system and automatic transfer switch for West Campus Data Center
- › Design of expandable UPS system to serve the head end server nodes and data storage components for A21 High Performance Computing Center
- › Addition of a 500 kW standby generator to the West Campus Data Center; included a 2,000 gallon remote fuel tank and 250 feet of duct bank to protect feeders

#### Torrance State Hospital – Torrance, Pennsylvania

- › Replacement of entire campus electrical distribution system including the addition of full-building diesel generators and associated automatic transfer switches at six patient buildings

#### Elite Surgical Center – Uniontown, Pennsylvania

- › 180 kW Diesel Generator providing critical and life safety power for ambulatory surgical center operations

#### University of Pittsburgh, Olympic Sports Complex\*– Pittsburgh, Pennsylvania

- › 100 kW Diesel Generator providing power to an 100A equipment ATS and a 70A life safety ATS

#### Verizon Communications\*– Harrisburg, Pennsylvania

- › Design and integration of three new 1MW standby generators and 6000A paralleling switchgear into the existing electrical distribution system of a nine-story, 325,000 sq.ft. mission critical operations building

#### California University of Pennsylvania\*– Convocation, California, Pennsylvania

- › 600 kW Diesel Generator providing power to an 800A equipment ATS and a 260A life safety ATS

License Information

SCOTT ALLAN KRAYNAK



PENNSYLVANIA

Board/Commission:	Engineers ⓘ	Status Effective Date:	12/21/2021
License Type:	Professional Engineer	Issue Date:	5/11/2006
Specialty Type:		Expiration Date:	9/30/2023
License Number:		Last Renewal:	10/30/2019
Status:	Active		



## Frank T. Restly, E.I.T.

### *Electrical Designer*

Mr. Restly is experienced in the design of electrical systems for both new buildings and building retrofits for higher education, commercial, and governmental facilities. He is experienced in the design of power distribution systems, control systems, lighting and emergency lighting systems.

His duties also include coordination with regulatory agencies, equipment selection, coordination with other disciplines, checking of construction documents for quality assurance.

### PROJECT EXPERIENCE

#### Torrance State Hospital – Torrance, Pennsylvania

- › Replacement of entire campus electrical distribution system including the addition of full-building diesel generators and associated automatic transfer switches at six patient buildings

#### Lebanon Valley College – Annville, Pennsylvania

- › New Nursing School Building including a 150kW generator for standby power

#### University of Pittsburgh, William Penn Union – Pittsburgh, Pennsylvania

- › Replace existing generator with new 230 kW diesel generator that was sized appropriately to power the existing loads and new loads necessary to meet current codes

#### Fannie Mae – Urbana, Maryland

- › Electrical critical infrastructure upgrade to two data center bays totaling 25,724 sq.ft. Included installation of a 2,500 kW Tier 4i generator
- › Study and evaluation of the existing life safety generators at 13100 and 13150 Worldgate Drive

#### DGS South Mountain Restoration Center – South Mountain, Pennsylvania

- › Replacement of entire campus medium voltage system
- › Replacement of each building's low voltage main distribution switchboards
- › Design included multiple medium voltage feeds to each building with automatic selector switches to provide greater redundancy of the electrical system

#### SCI Benner – State College, Pennsylvania

- › Electrical systems design for a new 590,000 sq.ft. facility consisting of 26 individual buildings on an 88-acre site and functions as the central transportation hub of all of the Commonwealth's correctional facilities

#### Lock Haven University Medium Voltage Electrical Master Plan – Lock Haven, Pennsylvania

- › Analyzing conditions of university's 4,160V distribution system
- › Determining feasibility of replacing existing underground feeders

### EDUCATION

Bachelor of Science, Electrical Engineering, 1995, University of Pittsburgh at Johnstown

### EXPERIENCE

H.F. Lenz Company 2010-Present • Villi Electrical Group 2010-2009 • Augusta Engineering 2009-2006 • Tri County Electric 2006-1995

### REFERENCES

Bruce Herring  
Shippensburg University  
717-477-7477  
[BEHerr@ship.edu](mailto:BEHerr@ship.edu)

Brian Schildt  
Lobar Construction  
717-432-9728  
[Brian.Schildt@lobar.com](mailto:Brian.Schildt@lobar.com)



## Keith A. Gindlesperger, P.E.

Civil Engineer

Mr. Gindlesperger holds a bachelor's degree in Civil Engineering Technology with experience in site planning and design for numerous types of educational, commercial, and government facilities. His responsibilities in these areas include site design, site utilities, parking and traffic circulation, roadway design, stormwater management, and erosion and sedimentation control. He also has experience working with local municipalities enforcing local planning and zoning codes. He has completed continuing education in stormwater management.

### EDUCATION

Bachelor of Science, Civil Engineering Technology, 1998, University of Pittsburgh at Johnstown

### EXPERIENCE

H.F. Lenz Company 1998 – Present

### PROFESSIONAL REGISTRATION / CERTIFICATION

Licensed Professional Engineer in Pennsylvania, Maryland, Virginia and West Virginia

### PROJECT EXPERIENCE

#### West Virginia University – Morgantown, West Virginia

- › Site design for the phased design of the new Ag Sciences Building II. The design included site utilities, grading and drainage plan, stormwater management plan, erosion and sedimentation control plan, WV DEP Permitting, Morgantown Utility Board Approvals

#### National Energy Technology Laboratory (NETL) – Various Locations

- › Civil/site design for building renovations and utilities projects at NETL sites West Virginia and Pennsylvania

#### Robert Morris University – Moon Township, Pennsylvania

- › Complete civil/site design for new 170,000 sq.ft. Events Center, included traffic circulation and parking facilities
- › Site utilities investigation for new Business School and School of Nursing
- › Design underground electric/telecom ductbank

#### Carnegie Mellon University – Pittsburgh, Pennsylvania

- › Utility design, drainage design, stormwater management, erosion and sedimentation control plan for new dormitory

#### Slippery Rock University – Slippery Rock, Pennsylvania

- › Civil engineering for a new student housing development
- › Replace portion of direct burial Lower Campus steam line
- › New steam tunnel (550 LF) with service laterals to five buildings
- › New Alumni Center parking lot

#### Indiana University of Pennsylvania – Indiana, Pennsylvania

- › Civil Engineering for a multiple building student housing complex consisting of 1.3 million sq.ft., LEED Certified
- › Topographic and utility survey of an approximately 15 acre portion of the campus.

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304-558-3554 Phone  
800-324-6170 Toll Free  
[www.wvpebd.org](http://www.wvpebd.org)

**THIS IS ONE FORM OF YOUR RENEWAL RECEIPT**

**PLEASE SAVE THIS FOR YOUR RECORDS**

Date of Renewal: December 18, 2020

Amount Paid: \$70.00



West Virginia State Board of Registration  
for Professional Engineers

**KEITH A. GINDLESBERGER**  
WV [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

**EXPIRES December 31, 2022**

KEITH A. GINDLESBERGER  
841 VERLA DRIVE  
WINDBER, PA 15963



## Aaron J. Tompkins

With over 20 years of experience, Mr. Tompkins is knowledgeable in all aspects of general construction from design to final field installations which includes not only foundations and framing systems for civil/structural projects but also includes mechanical systems, project management including estimating and bidding; construction management; and systems commissioning.

His responsibilities include Project Administration, submittal review, RFI review, Project Meeting Attendance, Project Documentation, Site inspections, and testing.

### PROJECT EXPERIENCE

#### West Virginia University – Morgantown, West Virginia

- > White Hall Renovation: Phased renovation of 95,500 sq.ft. classroom/laboratory building
- > Eiesland Hall Renovation: HVAC renovation of 60,000 sq.ft. classroom building

#### Shippensburg University – Shippensburg, Pennsylvania

- > \$7.5 million upgrade to the campus electrical distribution system, included over 40 buildings (DGS Project)
- > Phase II of the telecommunications project to complete the campus fiber optic ring and create a path to a backup redundant data center

#### State Correctional Institute (SCI) – Huntingdon, Pennsylvania

- > Electrical power distribution upgrades of the four original cell blocks, plus the two newer cell blocks in the maximum security correctional institution houses - DGS project
- > Electrical Distribution System Upgrades including two new service entrances, transformers, main-tie-main switchgear, parallel generators, low voltage switchgear, transfer switches, cabling and network controls - Current Project

#### Torrance State Hospital – Torrance, Pennsylvania

- > Field Services for the replacement of the site electrical distribution system that serves each building on campus, an inpatient mental health facility operated by the Pennsylvania Department of Human Services

#### State Correctional Institute – Benner Township, Pennsylvania

- > Field Services for the electrical engineering services for the new 590,000 sq.ft. facility which consists of 26 individual buildings on an 88-acre site

#### State Correctional Institute – Camp Hill, Pennsylvania

- > Field Services for the replacement of the steam lines and the repair of the 20,000 sq.ft main steam tunnel. The project was completed in three phases

### EDUCATION

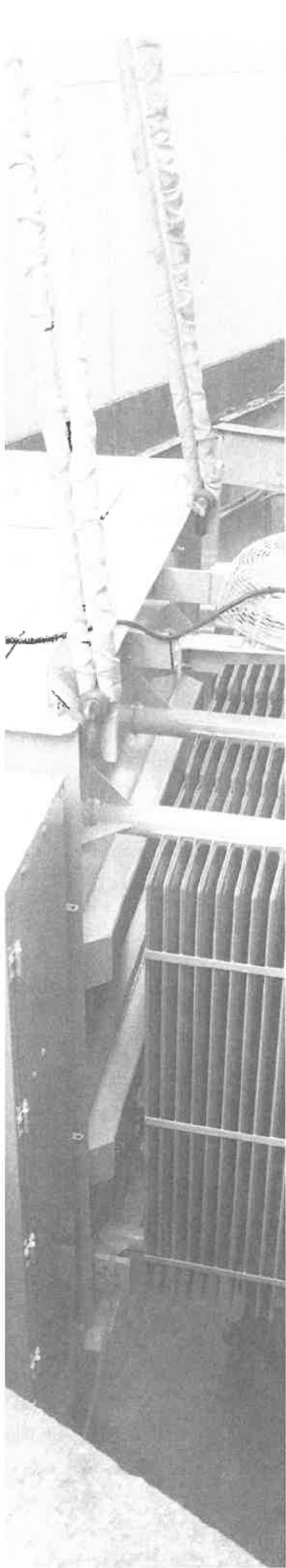
Bachelor of Sciences 1994, Geology,  
University of Pittsburgh at Johnstown

### EXPERIENCE

H.F. Lenz Company 2006-Present •  
LANCORP Advanced Systems 2000-  
2006 • Griffith & Petz, Inc. 1992-  
2000

### PROFESSIONAL AFFILIATIONS

American Society of Plumbing  
Engineers (ASPE)



### Tab 3. Staffing Plan

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## Project Staffing & Management Plan

Our firm has developed the management techniques, accountability protocols, and reporting methods to successfully and efficiently manage projects while meeting schedules and budgets. Contributing to this is the direct involvement of our senior-level Principals and Project Managers who possess the technical expertise, fully understand the Client's business or mission, and have the ability to create and maintain a collaborative environment among all Team members.

### SENIOR LEVEL LEADERSHIP

H.F. Lenz Company is well known for maintaining senior level leadership involvement throughout a project and this effort is no different. **Joel C. Shumaker P.E., LEED AP**, will serve as the **Principal-in-Charge**, and **Scott A. Kraynak, P.E., LEED AP** will be the Project Manager. These individuals will remain involved throughout the duration of the contract to maintain a level of consistency and oversight of the project team.

### SINGLE POINT OF CONTACT FOR THIS CONTRACT

The designated Project Manager and Single-Point-of-Contact for this project will be **Scott A. Kraynak, P.E., LEED AP**. Scott is a Registered Electrical Engineer with over 21 years engineering experience. Scott Kraynak will function as the day-to-day Project Team leader and will be responsible for the project schedule and budget, coordinating and participating in meetings, and the checking of construction documents. Scott will also assist in bidding support and oversee the construction administration services.

### ADDITIONAL STAFF

**Frank T. Restly, E.I.T.**, will assist Scott Kraynak with the UPS and generator analysis and design. **Keith A. Gindlesperger, P.E.** will be responsible for any **civil engineering** that may be required.

### PROJECT MANAGEMENT PLAN

H.F. Lenz Company will incorporate the same approach for Project Management/Engineering in both the Design and Construction Administration Phases, in that the individuals responsible for a specific discipline of the design process, will be responsible for the execution of their disciplines during the Construction Administration phase.

Discipline-specific Engineers, who design the project, will be responsible for their discipline's response to RFI's, performance of site reviews of construction activities, and generation of field observation reports and punch list creation.

Construction meetings will be attended by the Project Manager, with discipline-specific engineers attending meetings, based on specific construction progress timelines and milestone achievements.



## PROJECT MANAGEMENT TECHNIQUES

The Project Manager's objective is to achieve ideal balance among cost, schedule, design quality, and life cycle cost, and will direct all Team Members towards this end. To accomplish this, our Project Manager will adhere to the following approach, which has proven to be successful on past projects.

### ***Establish a Dedicated Project Team that does not change***

Consistency of the team is very important in keeping all personnel aligned with the objectives and goals of the project—including budget and schedules adherence. H.F. Lenz Company has one of the lowest employee turnover rates in our industry.

### ***Clear and efficient communication***

Clear and timely communication among the Project Team is critical to developing high quality, well-coordinated construction documents that meet the project schedule and budget. During the pre-design phase of a project ideas and knowledge are shared, processes are collectively developed, and common goals are defined.

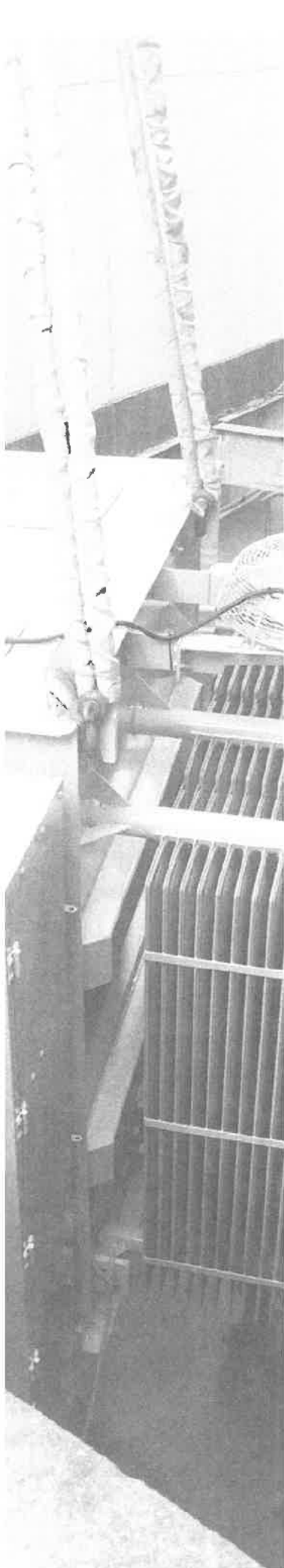
Communication is maintained throughout the entire Project through team meetings, participating in benchmarking processes, telephone and teleconferencing calls, and online collaborative applications.

### ***Assigning Responsibilities***

Maintaining the quality of work while meeting schedules and budgets, is achieved through an ongoing planning process involving dialogue among the various team members in the relationship. The key is the development of a mutual understanding of individual responsibilities, well-defined group goals, and the establishment of real communication. Early on in the process, it is extremely important to identify and assign both group and individual responsibilities. The responsibilities of each Team Member are identified for each phase of the project, from programming and design through construction and commissioning.

### ***Promoting a collaborative environment***

We place a high value on creating and supporting a dynamic collaborative environment among the Project Team where ideas and knowledge are shared, processes are collectively developed, and common goals are defined. The objective is to draw upon the collective intelligence of the entire Team, while supporting the Client's values and mission.



## Tab 4. Project Approach

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The initial phase of the project would begin with a kick-off meeting to clarify the project scope, objectives/expectations, and define other project specific design criteria. This phase will set project parameters by identifying:

- › Project Requirements
- › Project Objectives
- › Basis of Design
- › Site Access Requirements
- › Challenges
- › Schedule
- › Project Budget for Construction Costs
- › Available Existing Documentation

### **Existing Conditions Evaluation and Analysis**

After the kick-off meeting, and prior to any site visits, we would like to obtain available documentation of existing conditions. After review of the documentation, a visit to the site will be conducted to observe existing conditions as they pertain to the scope of the project. Observations of building interiors and existing system configurations would occur at this point. We will also work with the state to develop the design criteria based on current industry standards, and meet with the end-user, as required, to determine specific building requirements and constraints.

### **Design Phase**

As a deliverable for the initial phase, we will produce Design Development documents. The documents will indicate existing conditions and the overall plan for the new systems. The Design Development submission, in addition to indicating sizing and locations for the generators and the electrical service topology at each location, will focus on identifying potential conflicts between existing conditions and project objectives. After submission of the Design Development documents, we will meet with the Owner to review the submission.

Once the Design Development documents have been reviewed, comments and decisions from the review meeting will be incorporated and the documents will be developed into Construction Documents. The Construction Documents will include book specifications. The final stamped drawings will be issued for permitting review/approval. Should there be comments from the code reviewer, we will respond as necessary and incorporate comments if needed and re-issue the drawings.

Once the documents have been issued for construction we would expect to participate in a pre-proposal bidder's conference, respond to contractors RFI's, and provide comments to proposals received from the contractors.

### **Cost Estimates**

At each phase of design, we will provide Estimates of the Probable Cost of Construction, that will allow the state to determine if the project needs to be adjusted to match the funding. Before the next phase of design commences, the cost of construction will be reviewed to confirm the project is within the budget allocation.

### **Construction Phase**

After the project is awarded for construction, HFL anticipates providing Construction Phase services generally consisting of submittal review, providing responses to the contractor RFIs, interpreting the construction documents, providing sketches or other clarifications for the contractor, site visits during construction to observe construction with regard to the contract documents, and provide a punchlist at substantial completion. When the contractor has provided their as-built drawings, indicating changes made during construction, we will generate record drawings for the project.

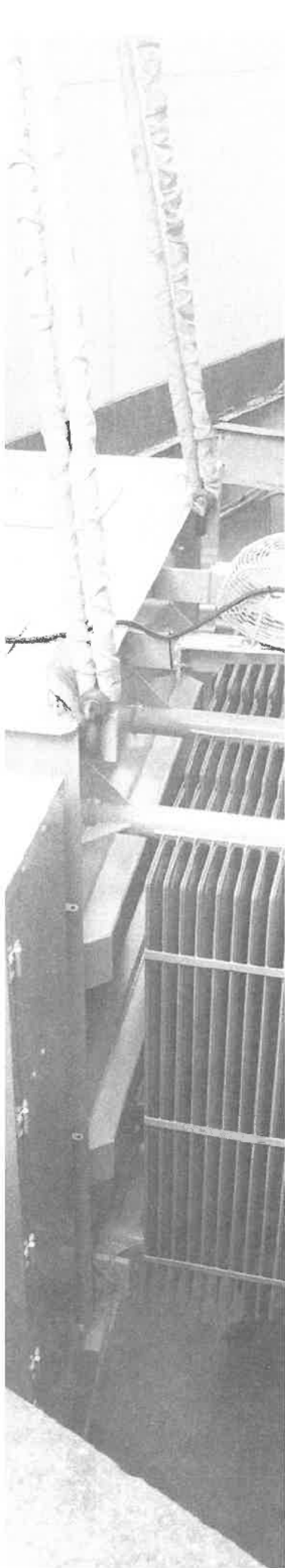


H. F. Lenz will incorporate the same approach for Project Management/Engineering in both the Design and Construction Administration Phases, in that the individuals responsible for a specific discipline of the design process, will be responsible for the execution of their disciplines during the Construction Administration phase.

A single point contact, Scott Kraynak, P.E., from H.F. Lenz will coordinate and execute all design and construction administration tasks with applicable personnel, as well as coordinate all engineering staff/sub-consultants responsible for the successful execution of the project.

Discipline-specific Engineers, which design the project, will be responsible for their disciplines response to RFI's, performance of site reviews of construction activities, and generation of field observation reports and punch list creation.





## Tab 5. References

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## H.F. LENZ COMPANY REFERENCES

### Progressive Insurance Company

**Contact Name:** Fred Hulme  
**Title:** Sr. Manager, Facility Operations  
**Telephone:** 440-603-5454  
**Email:** [fred\\_hulme@progressive.com](mailto:fred_hulme@progressive.com)

### Yale University

**Contact Name:** Louis Tiseo  
**Title:** Sr. Director, Foundational Technologies Services  
**Telephone:** 203-432-2522  
**Email:** [louis.tiseo@yale.edu](mailto:louis.tiseo@yale.edu)

### University of Pittsburgh

**Contact Name:** William Kane  
**Title:** Sr. Project Manager  
**Telephone:** 412-383-5717  
**Email:** [wjk10@pitt.edu](mailto:wjk10@pitt.edu)

### PSU Milton Hershey Medical Center

**Contact Name:** Matthew Grimes  
**Title:** Facilities Project Manager  
**Telephone:** 717 926-3951  
**Email:** [mgrimes@pennstatehealth.psu.edu](mailto:mgrimes@pennstatehealth.psu.edu)

