

# Powering Worldclass Results



Supporting Communication Infrastructure

## Your infrastructure solutions start with us.

The information revolution's insatiable requirements for greater speeds and larger capacities brings new challenges to service providers and building owners every day. At PWR we help facility based wireline, ISP and wireless telecom clients with locating, engineering and consulting for network deployment. We are partners working side by side with engineering departments in evaluating new construction or renovation of existing facilities. By employing the latest project management techniques at PWR our customers are assured timely and cost efficient completion of highly technical projects. We handle any and all aspects of a sites mechanical, electrical engineering requirements including AC electrical, air handling, DC power,

super structure, generator and fire protection. We are also capable of installing communications systems including transport, router and local area networks. Following project completion, PWR supports your communication and network systems with quick response times and equipment related service. Our list of clients include Global Crossing, MCI Worldcom, Nextel Partners, Paetec, RCN, Sphera and Williams, to name a few. Contact us directly or visit us on the web at [pwrlc.com](http://pwrlc.com). At PWR we are committed to solving network infrastructure requirements for an increasingly complex electronic world.



# Engineering, Equipment and Installation



## Site and Infrastructure Planning

When building or upgrading a telecommunications facility, proper planning and execution is key to a successful installation and a reliable site. Our highly competent team manages each project as required by our customers. From concept to service-ready, we work with your company's team to produce a site that meets both your present and future needs. Our engineers utilize AutoCAD and Visio software to develop complete detailed specifications, material list, build schedule and complete as-built package. PWR adheres to the industry's most stringent specifications during design and quality control inspections.

## Site Build Services

PWR offers years of expertise in consulting, project management, field project management, installation, test and turn up. PWR provides build services for new site builds and upgrades to existing sites. PWR dedicates to each project a technical design person, project manager and lead installer. Our installation specifications are held to the highest level in the industry.

## Project Management

PWR provides a full range of project management and construction services to ensure our customers specific projects are completed on time and within budget. The project manager assembles a cohesive team to define a plan and coordinate every phase of each project.

Our experienced project managers provide:

- Define scope of work
- Develop budgets
- Timetable and Schedule Coordination
- Vendor Selection and Management
- Hiring and Management of Contractors and Subcontractors (union, non-union)
- Monitoring standards, state/city codes, permits and safety
- Accounting and Invoice Management
- Material Selection and Procurement
- Quality Control Assurance

PWR manages each project using state-of-the-art software that scripts scope of work, schedules projects, and tracks progress through completion.

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## Ongoing Service

1. 24 X 7 site support via data network/  
Emergency phone dial out.
2. Power Management

## Warehousing

- Stock inventory of power equipment from multiple manufacturers
- FIFO Inventory
- General Receiving
- Inventory Control
- Delivery
- Rack and Stack for Forecasted Deployment
- Pre-wiring and Integration for Quality Control
- Network Warehousing at 63 Warehouse locations Nationwide (25,000-100,000 Sq./Ft.).

## Cabinet Integration

- Environmental
- Monitoring and Alarms
- AC Power Protection and Back up
- Multiple Distribution configurations
- DSX Panels
- Telecom electronics (ATM Switch, Routers, DACCS etc.)
- Internal Power Management
- Fiber Management and Fiber

## Services Offered for: Central Office/Collocate Space

### Site Design

- Site Visit and Audit
- Primary & Secondary Power distribution
- Grounding Scheme
- Method of Procedure/Parts List/Project Manual
- Wiring Diagrams
- Cable Management
- Alarm Scheme
- Air Handling/ Conditioning
- Fire Suppression

### Site Build

- Nationwide, Puerto Rico & Dominican Republic
- Union and non-union locations
- Project management & field management
- Warehouse, pre-stage & equipment delivery
- Site visit & audit
- Power AC/DC
- Fiber Management
- Fiber Tray
- Iron work
- Floor layout
- Power, collocate and transport area
- Cable management
- Grounding
- Alarms
- Complete EF & I
- As Per Built Documentations

## Transmission

Optical, RF, Copper  
DACCS, DSX Panels, ATM,  
Voicemail, Broadband,  
Routers, OC3-OC192

- Optical Fiber Splicing
- RF Connections
- Coax- BNC Connections
- Twisted Pair
- CAT 3&5&7
- Alarms
- Complete EF&I
- As Per Built Documentations



## Product Offerings:

### Batteries:

Flooded Lead Acid  
Sealed AGM 10 Year  
Sealed AGM 20 Year

### Battery Disconnects:

Breaker  
Electronic Contact  
Fuse  
Motorized shunt trip EPO capability

### Breakers:

1-600 Amp  
Bolt-in Style  
Plug-in Style

### Bus Bar:

Busduct  
Fabricated Bus

### Ground Bars- "PANI"

### Cabinets:

with Power Integration  
Indoor  
Outdoor

### Cable:

Alarm Cable  
Power Cable

### Converters

### Distribution:

100-10000 AMP  
Auxiliary/Supplemental Bays  
BDFB's  
Mini BDFB  
Breaker Panels  
DSX Panels  
Fuse Panels  
GMT Panels

### Facilities:

Heating & Air Conditioning  
Generators  
Lighting  
Fire/Alarm

### Fiber Duct and Cable Raceway

### Inverters:

24vdc, 48vdc  
Modular 1-90Kva  
Monolithic 1-10Kva

### Ladder Rack/Relay Racks

### Lugs

### Power Conditioning:

Plug Strip

### Power Plants:

24volt, 48volt, 130volt,  
240volt  
5-200Amp  
600-1200Amp  
1800-10000Amp

### Surge Suppression

TVSS


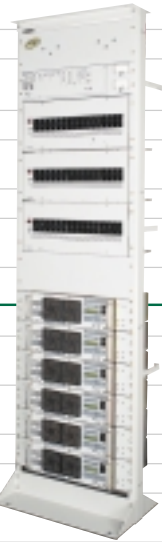



### Rectifiers:

Ferro  
High Frequency  
Switch Mode

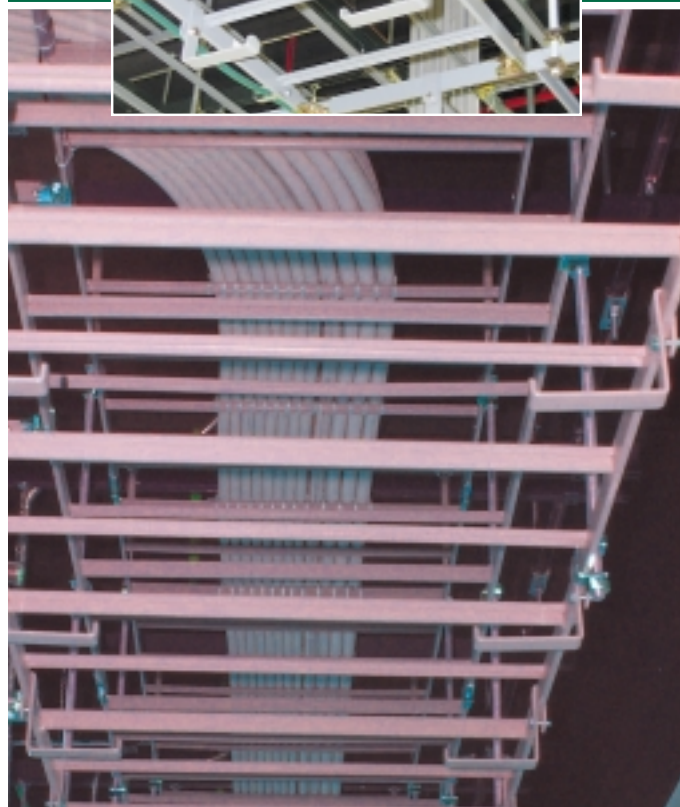
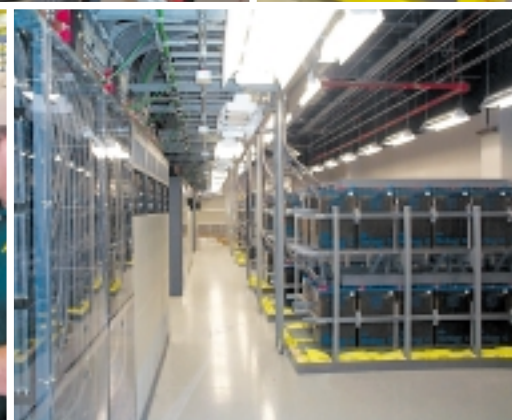
### UPS:

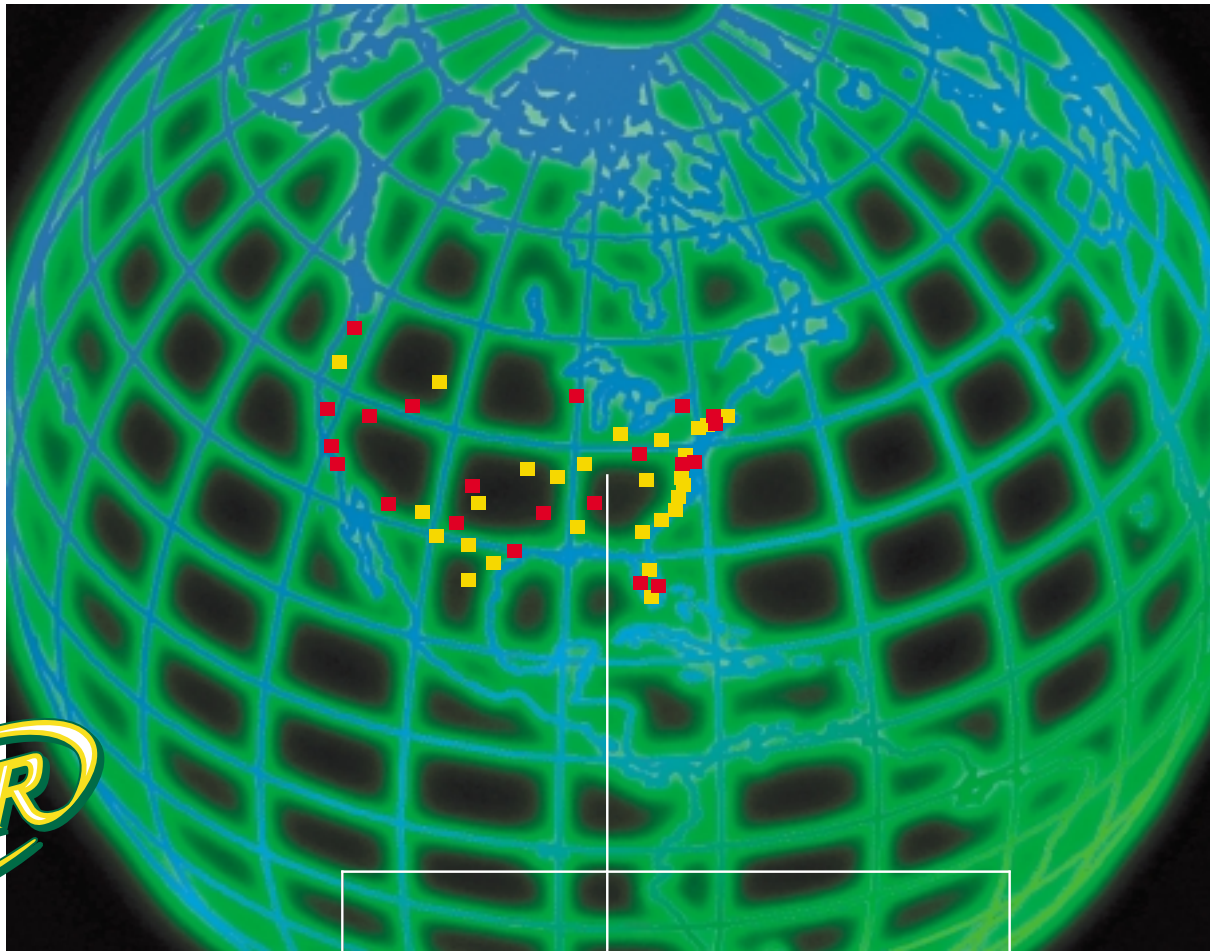
Single Phase  
3 Phase  
50VA - 1000KVA



| Location in Network  | Equipment to be Powered                  | Typical Amperage Required  | PWR Solution and Power Components        | Visual Photos   |
|--|--|--|--|---|
| <b>Central Office</b><br>Host Switch                                     | (Switch), Lucent, Nortel or Siemens      | For Switch Sites Power Plants<br><br>range from 2400 to 10000 Amps | PWR Large Power System                   |    |
|  | Digital Subscriber Line Equipment (xDSL) |  | Battery Distribution Fuse Bay (BDFB)     |   |
|  | Router                                   |  | Fuse Panels                              |   |
|  | Server                                   |  | Inverter (48vdc to 120/240vac)           |   |
|  | Multiplexers (MUXs)                      |  | Ringin & Signaling                       |   |
|  | Digital Cross Connects (DCS)             |  | Converter (48vdc to 130vdc)              |   |
|  | Sonet Equipment                          |  | Batteries                                |   |
|  | Channel Bank                             |  | Site Monitoring, Control & Remote Access |   |
|  | Channel Service Unit (CSU)               |  | Data Service Unit                        |   |
| Digital Loop Carrier (DLC)   |  |  |  |   |
| <b>Remote Switching</b><br><br>MTSO                                      | Remote Switch                            | Site Loads from 100 to 2400 Amps                                   | PWR Large Power System                   |   |
|  | Router                                   |  | Battery Distribution Fuse Bay (BDFB)     |   |
|  | Multiplexers (MUXs)                      |  | Fuse Panels                              |   |
|  | Digital Loop Carrier (DLC)               |  | Inverter (48vdc to 120/240vac)           |   |
|  | Digital Subscriber Line Equipment (xDSL) |  | Ringin & Signaling                       |   |
|  | Digital Cross Connect (DCS)              |  | Converter (48vdc to 130vdc)              |   |
|  | Sonet Equipment                          |  | Batteries                                |   |
|  | Channel Bank                             |  | Site Monitoring, Control & Remote Access |   |
|  | Channel Service Unit (CSU)               |  |  |   |
| Data Service Unit (DSU)  |  |  |  |   |
| <b>Remote Terminal</b><br><br>(Located in Hut, CEV, CUE or MESA Cabinet) | Multiplexers (MUXs)                      | Site Loads up to 200 Amps  | PWR Mini Power System                    |  |
|  | Digital Loop Carrier (DLC)               |  |  |   |
|  | Digital Subscriber Line Equipment (xDSL) |  |  |   |
|  | Digital Cross Connect (DCS)              |  |  |   |
|  | Sonet Equipment                          |  |  |   |
|  | Channel Bank                             |  | PWR Mid-range Power System               |   |
|  | Channel Service Unit (CSU)               |  |  |   |
|  | Data Service Unit (DSU)                  |  |  |   |
|  | Router                                   |  |  |   |
| <b>Customer Premise or Customer POP</b><br><br>(OC-3 or OC-12)           | Multiplexers (MUXs)                      | Up to 75 Amps  | PWR Mini Power System                    |   |
|  | Digital Loop Carrier (DLC)               |  |  |   |
|  | Digital Subscriber Line Equipment (xDSL) |  |  |   |
|  | Digital Cross Connect (DCS)              | PBX present or Remote Switch up to 600 Amps                        | PWR Mid-range Power System               |  |
|  | Sonet Equipment                          |  | Fuse Panel                               |   |
|  | Channel Bank                             |  | Batteries                                |   |
|  | Channel Service Unit (CSU)               | Switch present up to 2400 Amps                                     | Site Monitoring, Control & Remote Access |   |
|  | Data Service Unit (DSU)                  |  |  |   |
|  | Router                                   |  |  |   |
|  | Servers                                  | PWR Large Power System   |  |   |
|  | Private Branch Exchange (PBX)            |  |  |   |
|  | Remote Switch                            |  |  |   |
| Switch   |  |  |  |   |
|  |  |  |  |   |
| <b>Wireless Site</b><br><br>(Hut or Cabinet Enclosure)                   | Analog/Digital Radios                    | 100-1200 Amps  | PWR Power System                         |   |
|  | Microwave Radios                         |  | Fuse Panel                               |   |
|  | Multiplexers (MUXs)                      |  | Batteries                                |   |
|  | Channel Bank                             |  |  |   |

# Worldclass Super Structure and Cable Installation





# Connections

|                    |   |                       |  |                       |  |
|--------------------|---|-----------------------|--|-----------------------|--|
| <b>Arizona</b>     | ■ Phoenix   | <b>Maryland</b>       | ■ Baltimore  | <b>Oklahoma</b>       | ■ Oklahoma City<br>■ Tulsa                     |
| <b>California</b>  | ■ Los Angeles<br>■ San Francisco<br>■ San Diego     | <b>Massachusetts</b>  | ■ Boston<br>■ Springfield<br>■ Worcester                         | <b>Oregon</b>         | ■ Portland                                     |
| <b>Colorado</b>    | ■ Denver<br>■ Colorado Springs                      | <b>Michigan</b>       | ■ Detroit<br>■ Ann Arbor   | <b>Pennsylvania</b>   | ■ Philadelphia                                 |
| <b>Connecticut</b> | ■ Stamford<br>■ Hartford                            | <b>Missouri</b>       | ■ St. Louis  | <b>Rhode Island</b>   | ■ Providence                                   |
| <b>Florida</b>     | ■ Tampa<br>■ Miami<br>■ Orlando<br>■ Ft. Lauderdale | <b>Nevada</b>         | ■ Las Vegas  | <b>South Carolina</b> | ■ Columbia<br>■ Greenville                     |
| <b>Georgia</b>     | ■ Atlanta   | <b>New Jersey</b>     | ■ Jersey City  | <b>Texas</b>          | ■ Dallas<br>■ Houston<br>■ Austin<br>■ El Paso |
| <b>Illinois</b>    | ■ Chicago   | <b>New Mexico</b>     | ■ Albuquerque  | <b>Utah</b>           | ■ Salt Lake City                               |
| <b>Kansas</b>      | ■ Kansas City                                       | <b>New York</b>       | ■ New York<br>■ Albany<br>■ Buffalo<br>■ Rochester<br>■ Syracuse | <b>Vermont</b>        | ■ Burlington                                   |
| <b>Kentucky</b>    | ■ Louisville  | <b>North Carolina</b> | ■ Raleigh<br>■ Greensboro<br>■ Charlotte                         | <b>Washington</b>     | ■ Seattle                                      |
|                    |   | <b>Ohio</b>           | ■ Cleveland<br>■ Columbus<br>■ Youngstown                        | <b>Washington DC</b>  | ■ -  |
|                    |   |                       |  | <b>Canada</b>         | ■ Toronto                                      |

## Headquarters

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