



**ASCO** Power Technologies™

# ASCO Power Control System Overview

[ascopower.com](http://ascopower.com)

Life Is On | **Schneider**  
Electric



# Challenges



Connect multiple power sources to provide sufficient backup capacity.



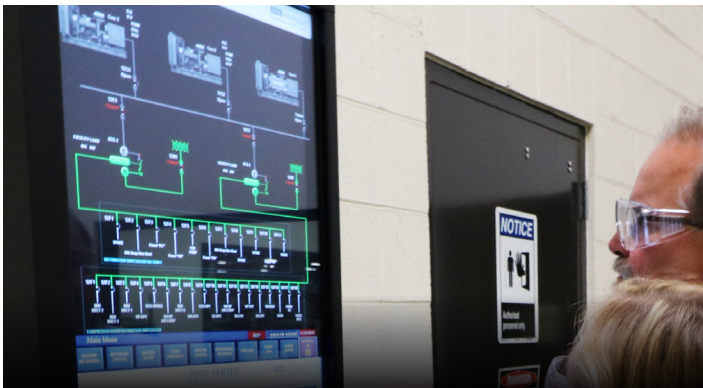
Ensure power reliability and availability for mission-critical systems.



Optimize use of each power source.



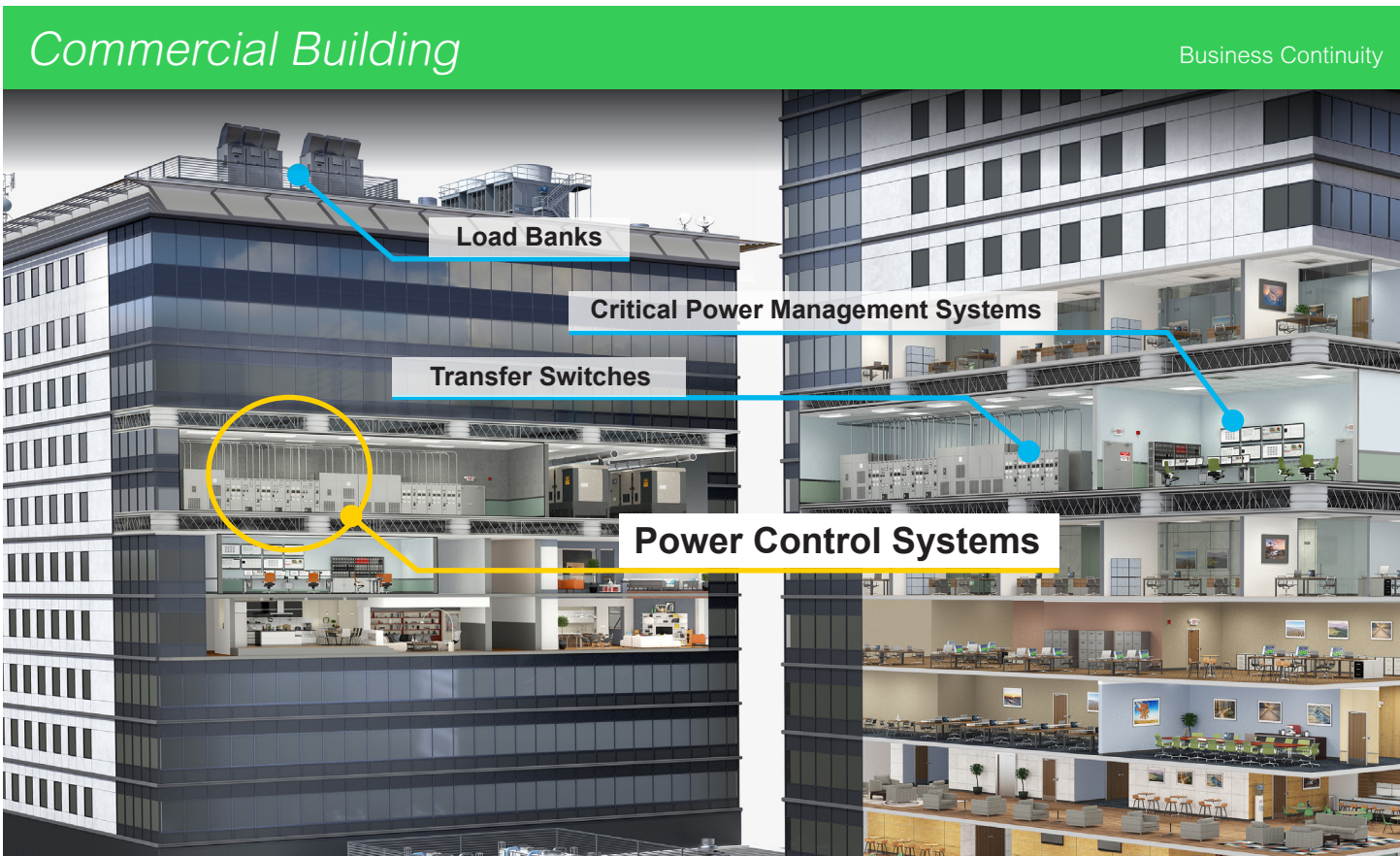
Add and shed loads to match real-time generation capacity.



Analyze and assess operating sequences and events.

**What do these challenges have in common?**  
All of them can be solved by power control systems.

# ASCO PCS Solutions



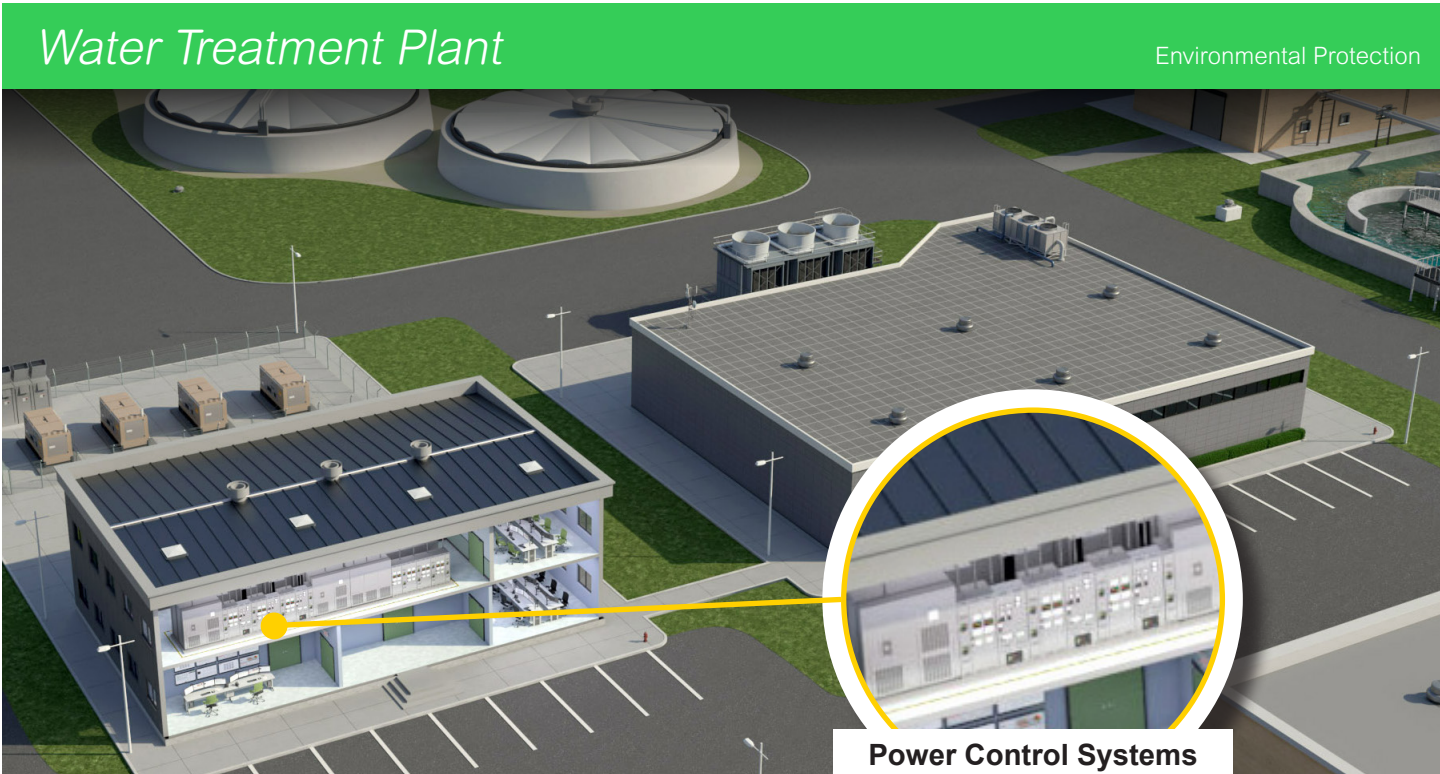
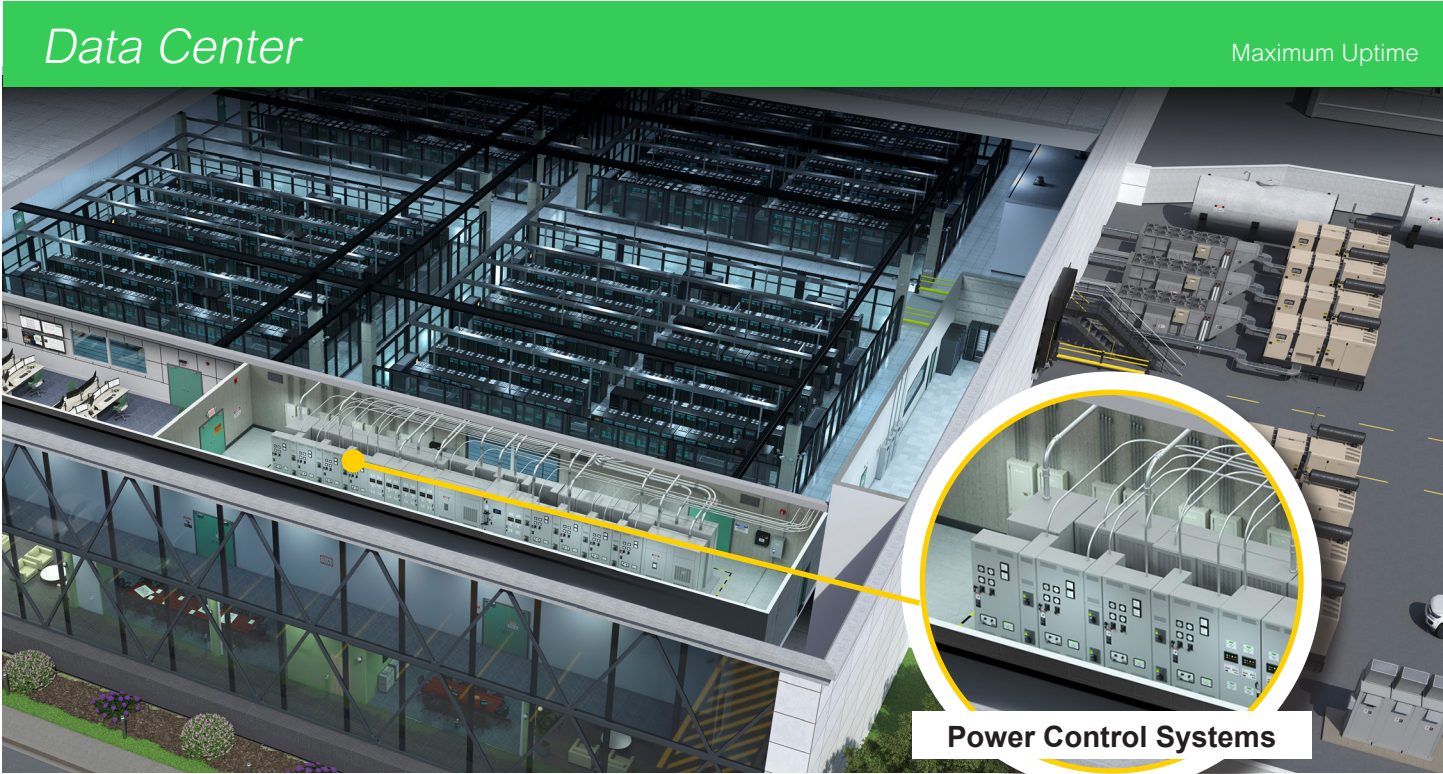
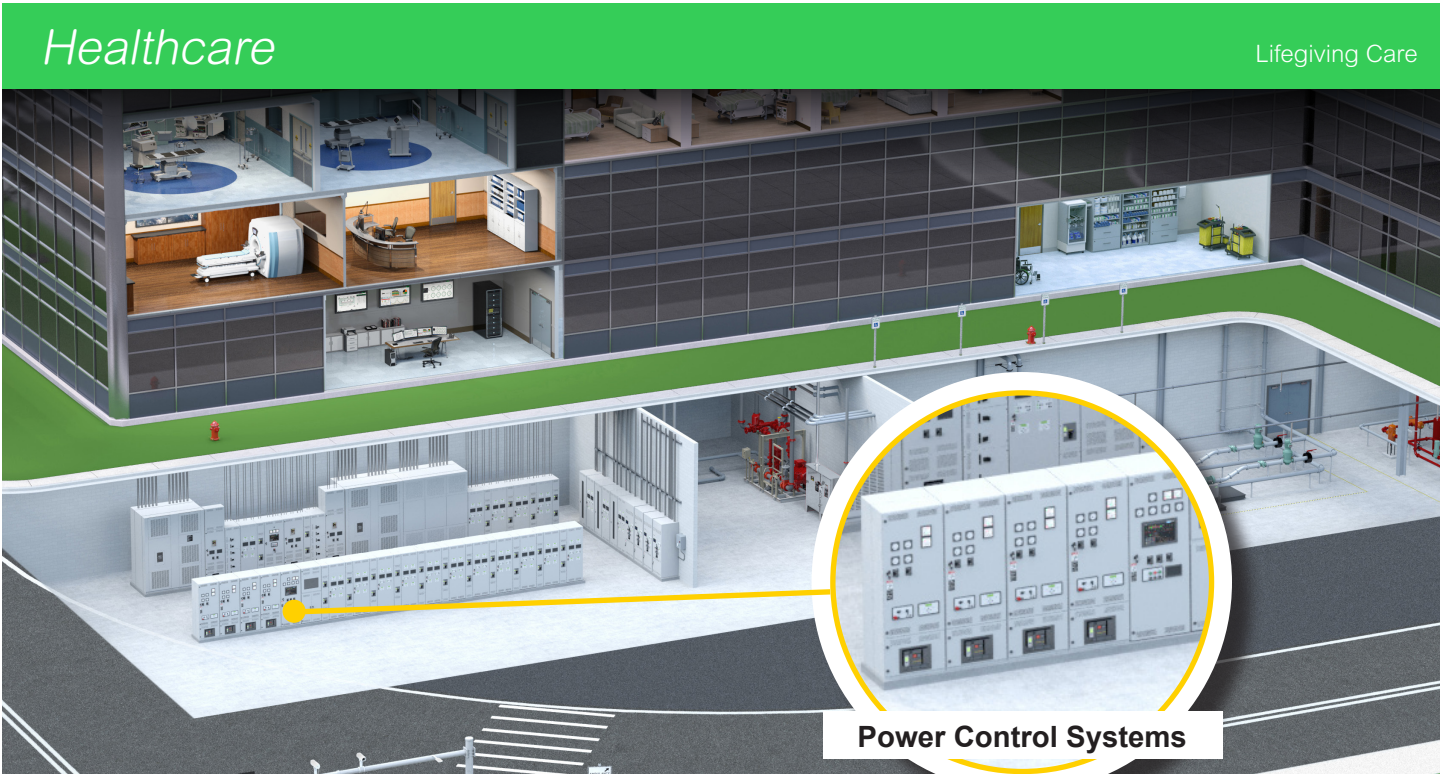
**ASCO Power Control Systems** offer the most sophisticated solutions for paralleling power sources and controlling mission-critical power. They enable facilities to meet capacity demands, enhance reliability, and optimize power system operation. Power Control Systems are available for Low Voltage and Medium Voltage applications.





# ASCO PCS Solutions

Critical Power Equipment for a Wide Range of Applications



“The customer service I receive is far above most vendors I work with. The team is always available for questions. The ASCO team is truly a Trade Partner.”  
Stan M., Project Manager





# Power Control System Basics

Power Control Systems enclose switchgear and controls for paralleling multiple power sources and connecting them to power distribution circuits. Their Programmable Logic Controllers execute sophisticated control of power sources, distribution equipment including transfer switches, and loads to provide the highest levels of reliability and operational flexibility.



Master Control Sections are equipped with Schneider Electric Modicon Programmable Logic Controllers. Other PLCs available on request.

Power Control Systems execute a range of critical power functions for multi-source backup power systems:

- Sense power conditions and events
- Detect power outages
- Start alternate power sources
- Parallel generators
- Connect loads to bus according to priority
- When required, shed loads according to system capacity
- Sense restoration of power to the primary source
- Return power systems to their normal state and transfer load to the primary source

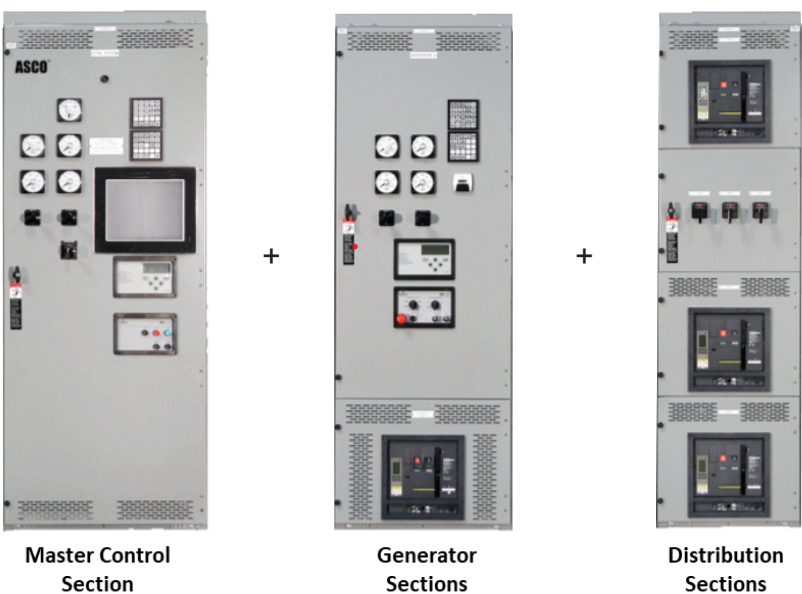
## Safety



All ASCO Power Control Switchgear is listed a UL standard. Low Voltage Systems are listed to either *UL 891 - Standard for Switchboards or UL 1558 - Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear*. These standards ensure the highest levels of safety, power reliability, and equipment longevity. Medium Voltage Systems are built to ANSI Standard C37.20.2 for Metaclad Switchgear.

# Power Control System Configuration

Power control systems consist of switchgear constructed of sections dedicated to power generation, power distribution, and overall system control



The quantities of sections are determined by the capacity needs of the facility and the features required.



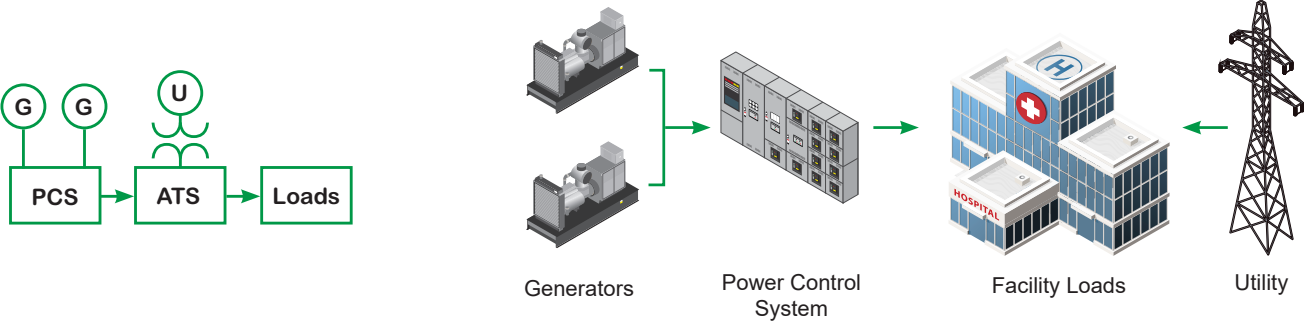
This PCS features a Master Control Section, three Generator Sections with breakers for three Standby Generators, and two Distribution Sections.



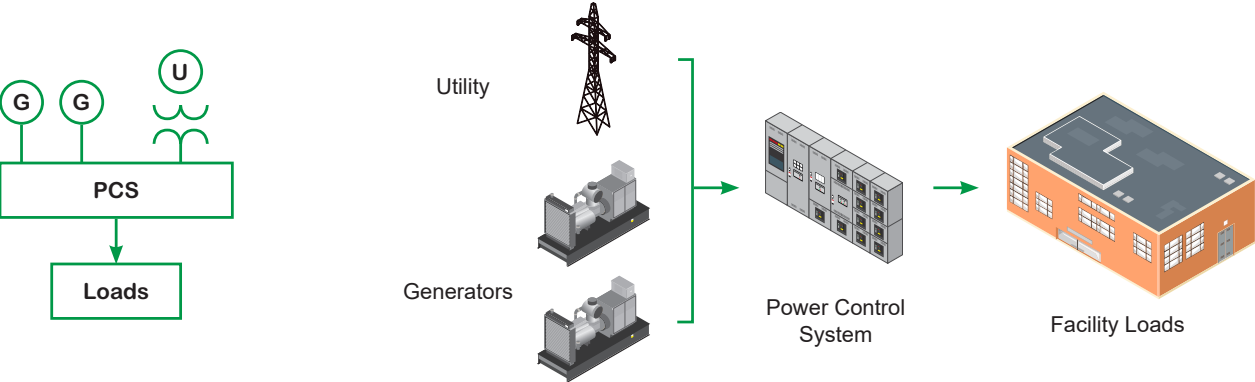
# Primary Applications

ASCO Power Technologies designs, manufactures, commissions, and services power control systems for a wide range of applications. From emergency standby power to utility paralleling applications and prime power, ASCO has the expertise and experience to engineer and deliver systems that satisfy any specification.

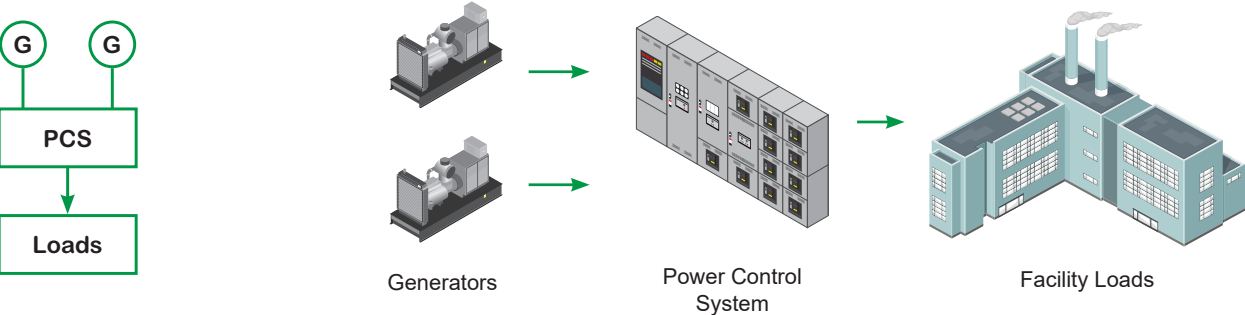
## Emergency Standby Power



## Parallel Utility and Generators



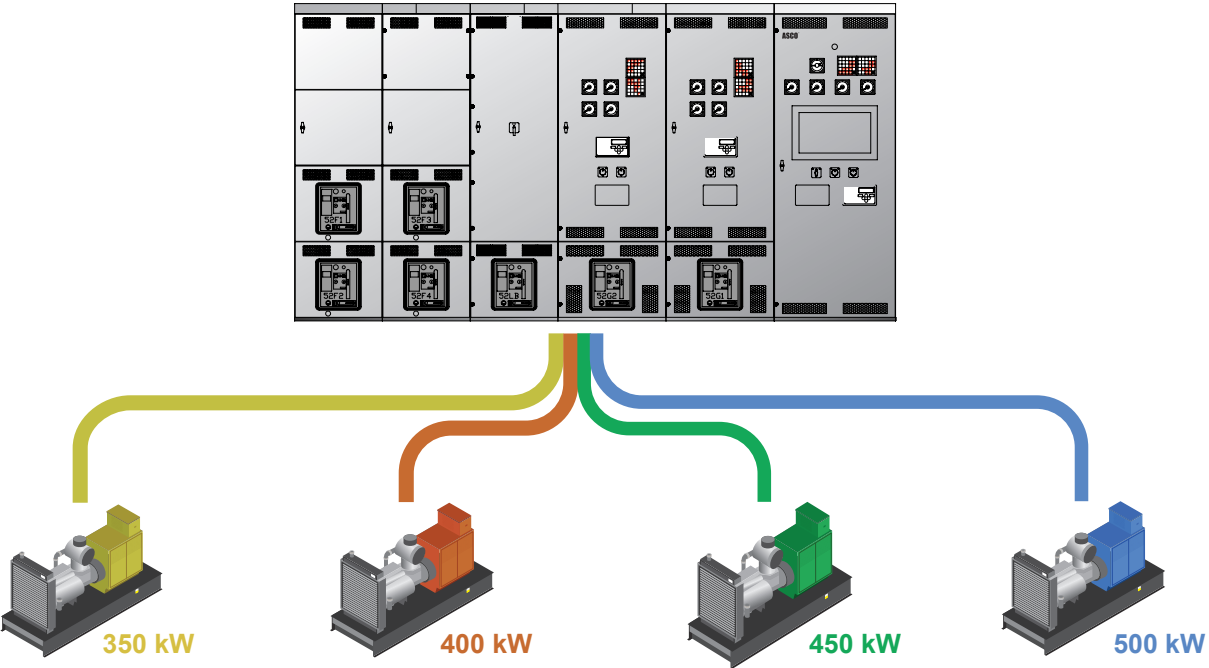
## Prime Power



# Key Capabilities

## Generator Paralleling

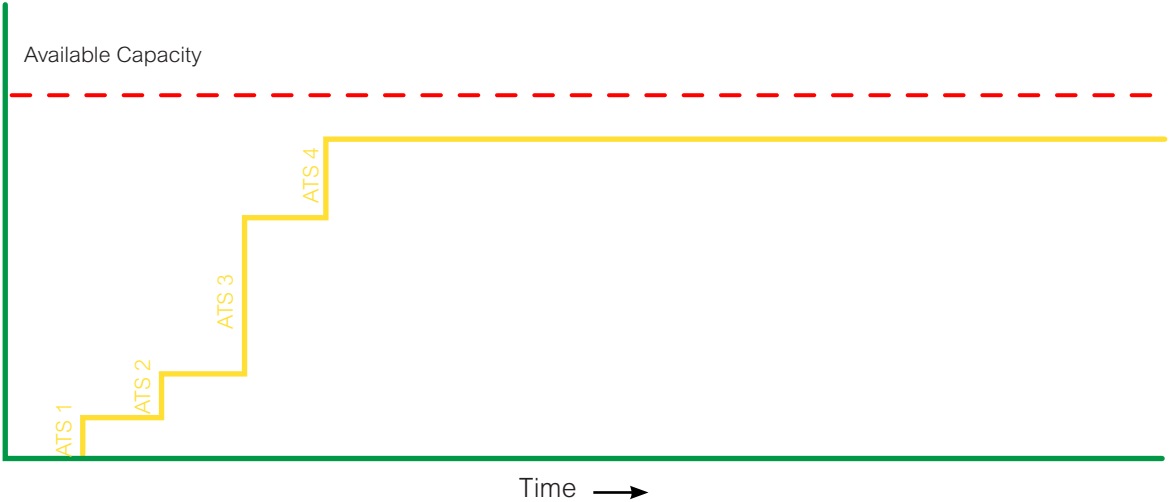
Safely connecting multiple power sources requires switchgear that monitors voltage, frequency, and phase angle differences between sources, and then connects them to a common bus. For maximum flexibility, ASCO switchgear can connect and control generators of differing sizes from all major manufacturers.



Supporting Information: [\*Basic Power Source Synchronization and Paralleling\*](#)

## Bus Optimization

Maximizes usage of available capacity by automatically operating switching devices to add and shed loads.

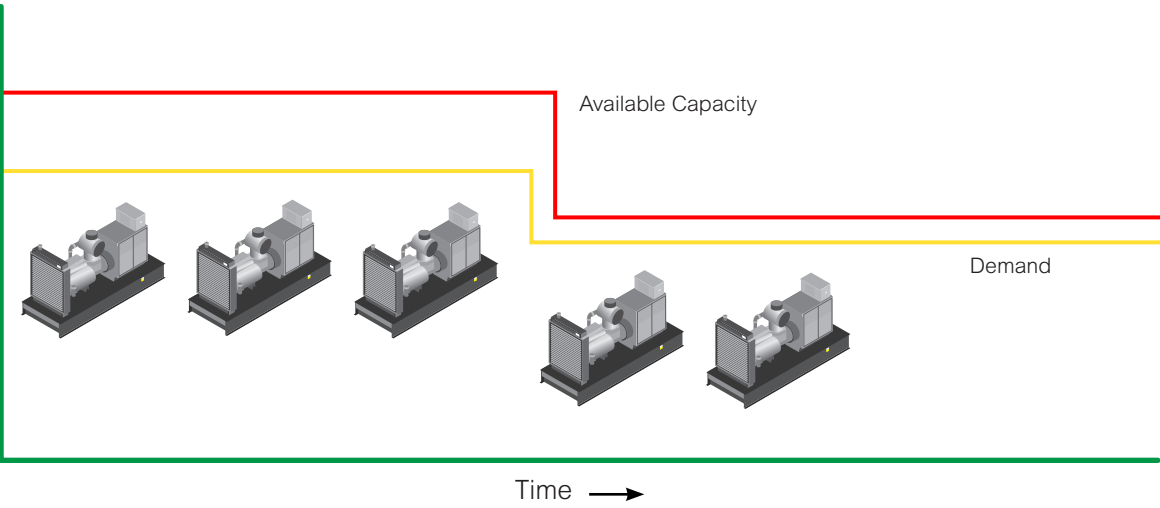




# Key Features

## Load Demand

Conserves fuel and reduces maintenance by operating fewer generators at greater efficiency according to demand. Load demand can also equalize run-times across generators.



## Custom Operating Sequences and Communications

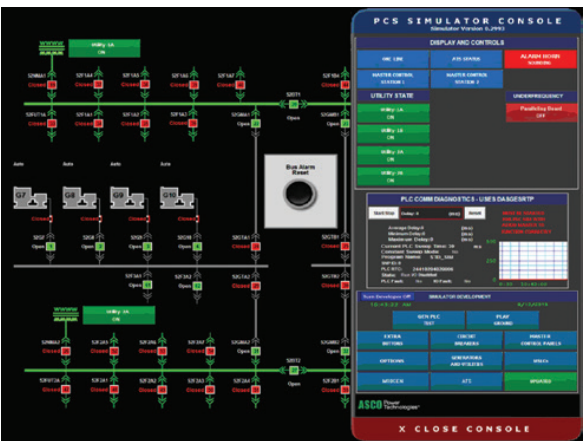
For select product lines, operating sequences can be customized for any purpose. Sophisticated operating sequences can manage generator usage according to priority or engine hours, engage load banks to provide required loading, and optimize power source utilization for commercial BMS, EPMS, as well as ASCO CPMS and Schneider Electric EcoStruxre™ systems.



## Simulation

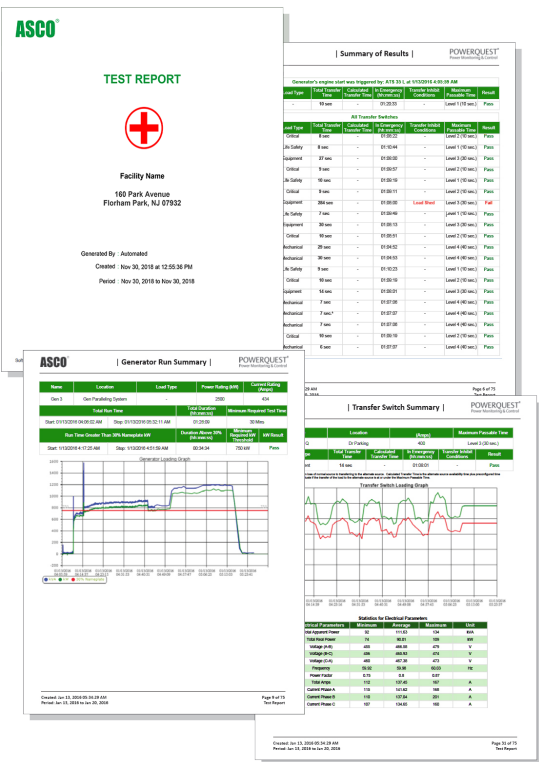
The PCS 7000 SERIES Simulator uses a master control program to replicate a single, live, master control PLC and operator panel. Users can:

- Instruct personnel on a virtual model of a facility's power system without impacting operations.
- Evaluate personnel response to emergency situations and develop operator proficiency
- Evaluate operation sequences and test system states without equipment wear or damage.
- Simulate power system upgrades and modifications.
- Audit and demonstrate preparedness for power system events.



## Automated Testing and Reporting

ASCO Power Control Systems can automatically perform equipment testing such as engine exercise routines and transfer switch tests. When equipped with reporting capabilities, PCS can automatically document system performance according to Joint Commission and NFPA 110 requirements.





# Engineering and Support

ASCO provides unparalleled technology, support, and service.

## Custom Component and Feature Integration

ASCO Power Control Systems provide flexibility for the widest range of power control applications by integrating:

- Digital synchronizers
- Digital power meters
- Circuit breaker and/or transfer switch controls
- Surge protection equipment
- Automation controllers
- Load banks
- Generator controllers
- Hardwired backup circuits
- Redundant Master PLCs and I/O Circuits

Comprehensive connectivity options supply data via Ethernet to remote touchscreens, as well as SCADA, EPMS, BMS, DCIM, and ASCO PowerQuest Critical Power Management Systems.

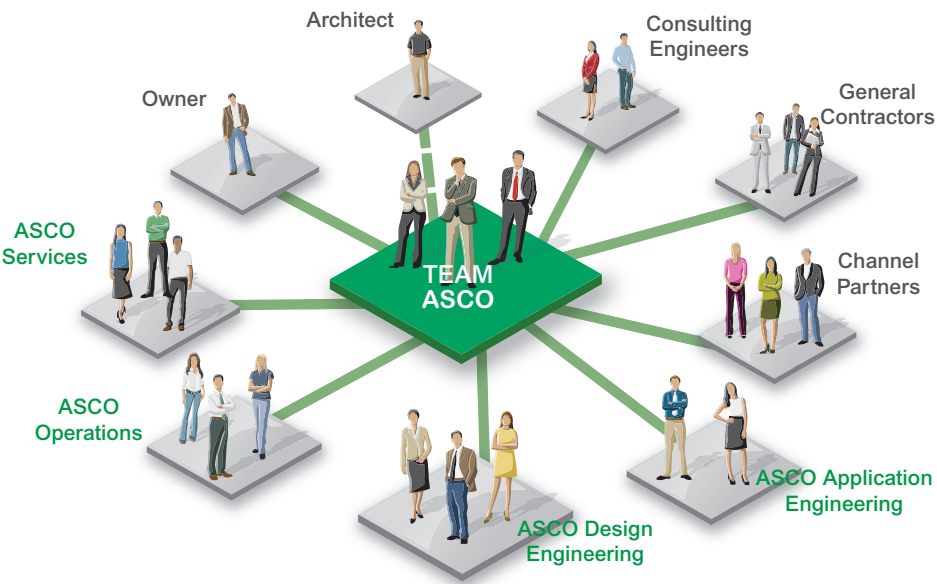
## Custom Visualization

- System one-line diagrams
- Dynamic, color-coded device status
- Alarm screens and operator-selected trend plots
- Switchgear status and control screens
- Engine-generator status and control screens with remote test capability
- Historical alarm summaries



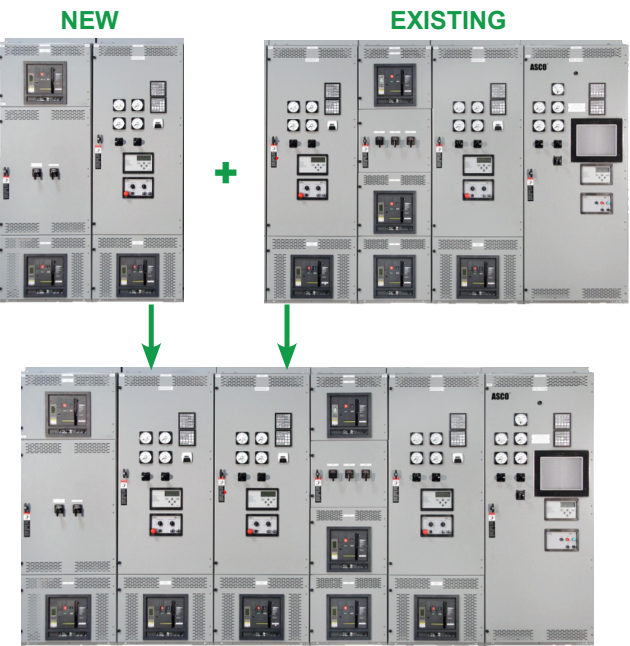
## Dedicated Project Management

Outstanding customer service starts with an effective project team. ASCO coordinates and executes the specification, engineering, fabrication, and start-up of power equipment to deliver an exceptional customer experience from concept to closure.



## System Modifications and Upgrades

ASCO Power Technologies can modernize existing power control equipment. Whether it's component replacement, system upgrades, or power system expansion, ASCO can provide the best solution even for gear from other manufacturers.





# Power Control System Product Lines

## SERIES 300

Commercial and Light Industrial Applications

Up to 4 Generators

SERIES 300 Generator Paralleling Systems combine master, generator, and load controls in a single unit. Using field-proven contactor technology, ASCO SERIES 300 Generator Paralleling Systems are the effective and efficient solutions for provide superior reliability in a small footprint.

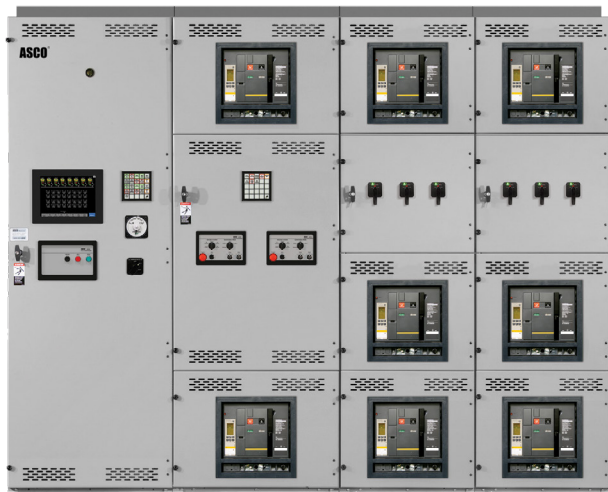


## 4000 SERIES

Sophisticated Preconfigured Power Management Solution

Up to 8 Generators

4000 SERIES Power Control Systems are pre-engineered to provide redundant PLCs advanced load prioritization, integrated controls, and communications.



# Product Control System Product Lines

## 7000 SERIES

Mission-Critical Power System Control

Up to 32 Generators

7000 SERIES Power Control Systems offer mission-critical facilities the full benefit of decades of ASCO power engineering excellence. Fully customizable, these systems can parallel standby and utility sources for low or medium voltage applications.



| Product Range         | Product SERIES             |  |  |
|-----------------------|----------------------------|--|--|
|                       | 300                        | 4000   | 7000   |
| Power Sources         | up to 4                    | up to 8                                      | up to 32   |
| Parallel Utility      | -                          | -  | Yes  |
| Bus Segmentation/Ring | -                          | -  | Yes  |
| Manual Paralleling    | Software-Based             | Hard-Wired                                   | Hard-Wired   |
| Touchscreen           | 4" B&W Graphic Touchscreen | 10" Color with System One-Line/15" Available | 24" Color with Dynamic One-Line/ up to 42" Available |
| Load Prioritization   | up to 16 Loads             | up to 32 Loads                               | up to 128 Loads                                      |
| Voltages              | up to 600 V                | up to 600 V                                  | up to 15 kV  |
| Construction/Listing  | UL 891                     | UL1558                                       | Low Voltage: UL 1558<br>Med. Voltage: ANSI C37.20.2  |

| Resource Finder    | Product SERIES  |                           |                           |
|--------------------|---|---------------------------|---------------------------|
|                    | 7000  | 4000                      | 300                       |
| Product Web Page   | <a href="#">Low Voltage Web Page</a><br><a href="#">Medium Voltage Web Page</a> | <a href="#">Web Page</a>  | <a href="#">Web Page</a>  |
| Product Brochure   | <a href="#">Pub. 2023</a>   | <a href="#">Pub. 2008</a> | <a href="#">Pub. 2010</a> |
| White Papers       | <a href="#">View Power Control System Papers</a>                                |                           |                           |
| Technical Articles | <a href="#">View Articles</a>   |                           |                           |
| Videos             | <a href="#">View Power Control Systems Videos</a>                               |                           |                           |





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