

WHITE PAPER

Cost Comparison: MPS v. Traditional Standby Power Solutions

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INTRODUCTION

Once dominated by single-generator or traditional paralleling systems, the standby power industry has been introduced in recent years to an efficient and cost-effective solution for backup power applications requiring more than 1 MW of standby power: the Modular Power System (MPS) from Generac Industrial Power. In addition to improving the redundancy and scalability of emergency power systems, new control technologies also reduce costs and overall project risks. By placing paralleling controls and switching within the generator itself, Generac Industrial Power has created budget-friendly configuration capabilities that improve the purchasing and ownership experience for end users while simplifying delivery and installation. When compared to traditional paralleling and larger single-engine solutions, MPS solutions provide many benefits over their competitive and traditional counterparts:

- Easier installation and commissioning
- Single-source generators and paralleling controls
- Cost-effective engines
- Repetitive streamlined production
- Higher quality control processes
- Reduced space requirements
- System flexibility
- Capital cost reductions
- Enhanced reliability
(N+1, N+2 and more for up to 99.9999% redundancy)

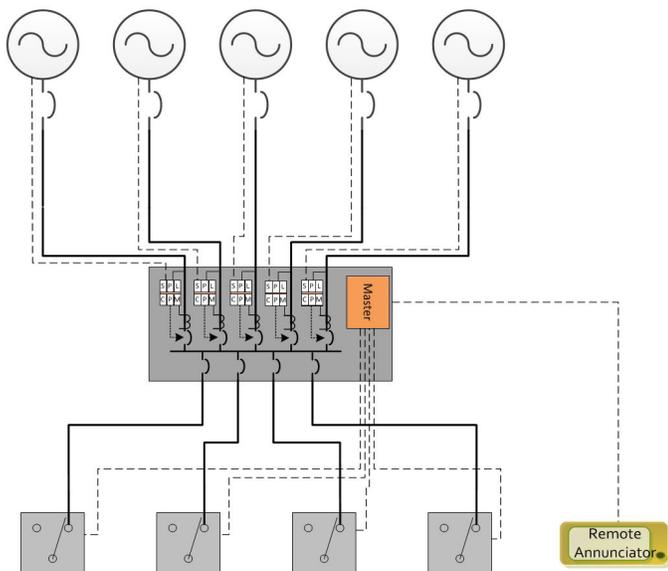
INSTALLATION IMPROVEMENTS

By using smaller gen-sets and adaptable installation designs, MPS solutions feature flexible setup capabilities, making them ideal for industrial backup power projects in which space and weight limitations would otherwise pose a challenge for large, single-engine gen-sets. MPS applications take convenience one step further by eliminating the need for the expensive low-voltage switchgear featured in most traditional paralleling solutions exceeding 1 MW of power:

Gensets in Parallel	Traditional		MPS	
	Sections of paralleling controls and switchgear		Sections of non-controlled switchgear	
2	3	\$80,000	1	\$30,000
3	4	\$120,000	1	\$35,000
4	5	\$150,000	1	\$40,000

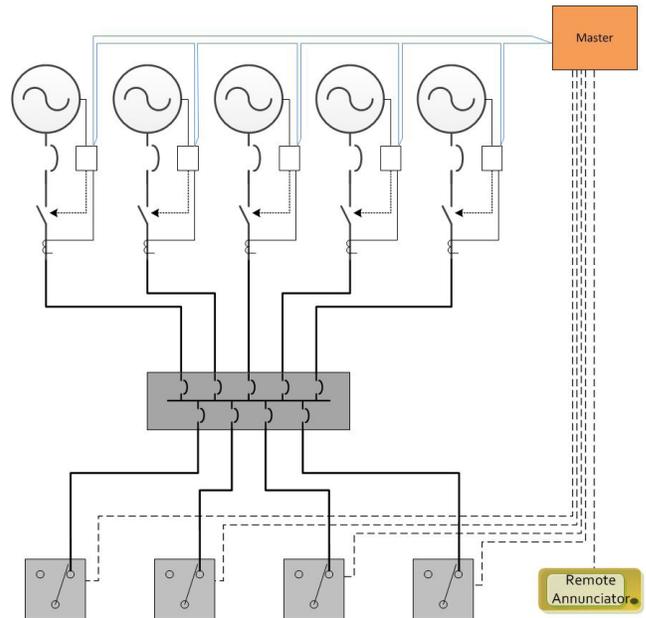
Employing a paralleling switching device—normally a contactor or breaker—and wiring it directly from each generator to a common electrical point (i.e. junction box, large transfer switch or distribution panel) allows an MPS system to significantly reduce capital costs, limit application complexity and streamline the installation process without jeopardizing system performance or redundancy.

Traditional Paralleling Switchgear



While traditional switchgear controls the generator and transfer switches, multiple controllers are required and interconnected for custom designs with PLC logic unique to each project. The switchgear is not only expensive, but inherently complicated.

Newer Integrated Paralleling



In addition to a master control that manages the overall system and automatic transfer switch, integrated paralleling approaches use generators that come equipped with paralleling and switching controls. The switchgear and controls are standard, reducing cost and complexity.

Whereas traditional paralleling systems can require the flawless coordination of up to 14 controllers in two-generator applications alone, MPS systems use integrated digital controllers to reduce installation costs, provide customized programming and manage key application requirements:

- Master controls
- Microcontrollers
- Load balancing
- Synchronization
- Load sharing
- Genset controller and proactive relay

In bypassing the need for high-priced switchgear and employing the use of integrated digital controllers, MPS applications simplify the installation process and create single-system functionality for configurations featuring multiple generators in parallel. Thanks to this cost-reducing development, an installation period that once took one to three weeks has been reduced to a few days.

FLEXIBILITY

As a company grows, business increases and pre-existing infrastructures expand. This creates a heightened demand for reliable standby power. Integrated paralleling solutions augment standby power solutions when site growth requires it. While such expansions can be financially debilitating for large, single-engine generator or traditional paralleling systems, the plug-and-play capabilities of Generac's MPS solutions minimize initial investment costs and avoid the need to oversize applications in anticipation of future growth. This allows an integrated paralleling solution to accommodate capital cost limitations and simultaneously prepare application sites for prospective expansion.

SERVICEABILITY

MPS applications use smaller generators that feature high-quality, mass-produced engines to offer easily accessible parts and off-the-shelf preparedness. Comparatively, larger single-generator solutions and traditional paralleling systems feature customized controls and engines to meet the needs of each site, both of which require parts that are less readily available and service expertise that requires additional training or assistance from specialized technicians. Thanks to the enhanced tools and plant automation used to manufacture smaller engines featured in integrated paralleling systems, MPS solutions offer added cost benefits when compared to larger and more complex alternatives:

- Mass-produced components for easy and affordable maintenance
- Single source purchasing
- Lowest cost per kW on the market
- Familiarity to on-the-road technicians for trusted service

Given their unique components and diminished redundancy rates, large single-generator and traditional paralleling systems pose a greater risk when product servicing is required. Moreover, replacing a single generator in either one of these applications is notably more expensive than swapping out a gen-set used in an integrated paralleling system offering inherent redundancy to safeguard a building's critical loads whenever a generator is taken offline for maintenance.

SUMMARY

From data centers and healthcare facilities to office buildings and wastewater management sites, standby power solutions play an integral role in protecting a variety of commercial and industrial businesses. As large, single-generator solutions and traditional paralleling practices require complex infrastructures and significantly larger budgets, Generac's integrated paralleling solutions provide a simplified and cost-effective approach to protecting a business' most valuable assets without sacrificing quality, dependability or performance. To learn more about MPS and view one of over 2000 applications installed in the United States, schedule an appointment with your local IDC, or call 844-ASK-GNRC (275-4673) today.