



Department of Veterans Affairs

MULTIPLE LOCATIONS



SUMMARY

VA Standardization:

- Repeatable, sustainable, and simplified approach
- Focused on MDF/IDF and data center facilities

'Zoned' Power Distribution:

- Challenges of capacity planning and standardization
- Needed to drive improved power efficiency and lower cooling costs in facilities
- Support increasing kW/rack power densities and redundant A+B feeds

Powerful Cost Savings:

- Lower per-whip and per-feed costs
- Reduced installation costs
- Lower electrical component and material costs

ABOUT THE VA

The Veterans Health Administration is America's largest integrated health care system. It provides care at 1,250 health care facilities, including 172 medical centers and 1,069 outpatient sites of care of varying complexity, and serving 9 million enrolled Veterans each year.

ABOUT THE PROJECT

Like most healthcare systems, the VA is supported by IT systems that are housed in a complex network of data center facilities. Those facilities are designed by an infrastructure engineering department that works under the auspices of the Office of Information Technology. Zonit was contacted by the design team to work through the details of standardizing on its new Z-PDS as a modular power distribution platform for the hospital system.

PROJECT CHALLENGE

In 2009, the VA was tasked with a daunting project: standardize the design of existing and new critical facilities. The challenge was to provide a repeatable, sustainable, and simplified approach to facility design. While these guiding principles are the hallmark of standardization, accomplishing them is easier said than done. The challenge comes in creating a universal specification that works within a constantly changing IT environment. Equipment and loads can vary from project to project, not to mention rack to rack.

Further, the VA was tasked not only with upcoming data center and MDF/IDF facilities projects, but also with remediating retrofit applications. Needless to say, most of the legacy data centers in the VA Healthcare portfolio, numbering in the thousands, were not designed with standardization in mind. As such, any new standard had to take into account the complexity that came with the variability of existing conditions.

With that in mind, the deeply experienced VA engineering team set about the task of creating a standard that would provide a repeatable and sustainable approach to powering and cooling the VA's mission-critical spaces. The team needed to identify a power distribution methodology that would support flexible capacity planning, and drive a standard heat rejection methodology. It also had to deliver more efficient 208V three-phase power to the rack.



ABOUT THE PRODUCT

Designed for data center, telecom, and MDF/IDF applications. The Z-PDS outputs a wide variety of single or three-phase power. A single Z-PDS can feed 1-6 racks depending on your power density needs. The system is compatible with all standard power distribution methods including whips, busways and RPP's. And the Z-PDS is revolutionary because it can also replace all of these standard power distribution methodologies. Z-PDS is available in 20, 30 and 60A three-phase units.



There was no thought of standardization in the legacy approach. Capacity planning? Forget about it. By establishing four power baselines, Zonit was able to help bring a repeatable approach to the table.”

PROJECT SOLUTION

After extensive product research and testing, the VA chose the Zonit Z-PDS power distribution platform to standardize on rack power delivery. The Z-PDS allowed the VA to standardize on 3.5, 5, 10, and eventually 15 kW/rack densities across the enterprise. This per-rack power cap also provided the opportunity to develop a corresponding heat rejection strategy. The VA took the approach of matching the identified load capacities to industry-standard cooling unit sizes.

During the course of implementing the Z-PDS in data center and MDF/IDF applications, the team realized that there were additional benefits to the Zonit platform. First, the system was able to provide redundant power to applications requiring A+B power. Additionally, the Z-PDS supports intrinsic three-phase load balancing. Through a patented approach, the unit provides statistical balancing of phases at the unit, which prevents the need to balance phases at the power panel.

CUSTOMER EXPERIENCE

The VA has documented that their 'per whip' costs are lower on new projects. Running dozens of circuits from electrical panels, whether they are remote or in-room, can be expensive. However, running two or four 3-phase feeds into a room and then tapping those phases with the simple twist of a locking plug was found to reduce overall cost. Since distribution is taking place within the room, it minimized the total number of branch circuits that were being run to each space. With the Z-PDS, they also noticed all of the power infrastructure can be installed day one, greatly decreasing both the complexity of the power environment and the cost of move, add, and change work.

Over the course of the last ten years, the VA has seen loads and per-rack density increase, particularly in MDF/IDF applications where telecom gear is now supporting power-over-ethernet equipment. Using the new 60A 3-phase Z-PDS product has allowed them to double capacity using the same product in the same form factor.

CONCLUSION

The Zonit Z-PDS has brought significant value to the VA Health Administration over the last ten years. It helps support a standardization effort that benefits not only the Administration, but also the veterans it serves and the government that supports it. They accomplished this by relying on the Zonit Z-PDS for their standardization program. The Zonit Z-PDS has allowed the VA to consolidate and reduce waste through a repeatable, sustainable, and simplified approach to critical power delivery.