

**TYPICAL STATEMENTS EXPRESSED OVER THE PAST 10 YEARS REGARDING CPN POWER'S CENTRAL UPS SOLUTIONS FOR DIAGNOSTIC IMAGING APPLICATIONS.**

**"We cannot guarantee the equipment warranty if you purchase the UPS from a supplier that has not been approved."**

**"If the UPS System is purchased through the Medical Equipment Vendor, then the warranty will remain."**

**"We require a 450 kVA UPS when supporting 2 Bi-Plane Labs."**

**"No, we will not support other vendor's equipment on our UPS System."**

**"The Central UPS is a single point of failure."**

**"If all of the equipment is fed from a Central UPS, then there will be cross talk between the different modalities."**

**"We require a 500 kVA UPS minimum size when supporting 3 Labs."**

**"The CPN Power 375 kVA UPS cannot support the (3) existing IR Labs and (2) new CT Scanners."**

**KNOWLEDGE AND EXPERIENCE**

The statements noted above were quotes from hospital personnel, engineers, architects, planners, and/or medical equipment vendors. CPN Power, Inc. has been applying Central UPS for more than 10 years. CPN Power brings over 30 years of power related experience to the Diagnostic Imaging and Radiation Therapy marketplace. CPN Power has heard numerous reasons why our Central UPS approach would **NOT** work when supporting Radiology, Cardiology, Oncology, and Hybrid OR Suite applications. We have listened to many cynics tell us why our approach is incorrect. CPN Power has installed hundreds upon hundreds of Central UPS Systems on a national basis supporting anywhere between 2-50 Imaging, Radiation Therapy, and OR suites. Total problem installations = 0.

We have monitored many customer installations to verify proper operation of the UPS and to assure proper UPS sizing to support the present suites and future suites. CPN not only supports Multi-Modality, but also Multi-Vendor applications. CPN has monitored many installations nationally to verify load profiles with 2, 4, 6, 10, 15, or more suites protected from a CPN Power Central UPS. CPN has monitored many 400, 600, 800, and 1200 amp distribution panels supporting Diagnostic Imaging departments. CPN utilizes high sample rate monitoring equipment that sample the sine wave a minimum of 128 times per cycle or 7,680 times per second. This high sample rate allows us to truly see the current inrush peaks

associated with the X-Ray generators, gradient amplifiers, magnetrons, or klystrons associated with the given modalities. CPN is also able to see the load diversity and the actual peak load profiles.

CPN Power has monitored many individual modalities, such as MRI, CT, Rad Rooms, R&F Rooms, IR Labs, Cath Labs, EP Labs, Angio Labs, Special Procedure Labs,

PET/CT, SPECT/CT, PET/MRI, CT Simulators, and Linear Accelerators – to name a few. CPN Power has monitored electrical distribution panels supporting Radiology only applications, Cardiology only distribution, a mix of Radiology and Cardiology, and Oncology only distribution.

**30 Years of Power Experience  
specific to Diagnostic Imaging  
and Radiation Oncology**

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The warranty card is often played by medical equipment vendors (MEV) relating to the purchase of a UPS from any source other than the equipment vendor. The MEV will often point out that only their UPS has been tested with the medical equipment and meets FDA requirements. The MEV might also state that the purchase of a UPS from any other vendor may void all warranties. Does the MEV void the warranty if the local utility provides the power? You, the customer, have the right to choose the preferred UPS vendor. You, the customer, has the right to choose a UPS supplier other than one offered by the MEV. We refer to this approach as Bullying! This approach is not so different than the techniques used at the local school playground. CPN Power has been providing power conditioners for medical imaging applications for 20 years and has been applying individual and Central UPS for Diagnostic Imaging applications for more than 10 years. We do recognize that all UPS are not created equal, and it is important to choose a UPS System that is well designed for imaging applications. The NO BULLY ZONE should apply to the customers' right to choose the UPS vendor without impacting the medical equipment warranty. In the end, the customer has the final choice.



We have heard that cross talk amongst modalities will be evident when supporting many modalities from a common distribution point, such as a Central UPS System. Yet, Diagnostic Imaging suites have been fed from 400, 600, or 800A distribution panels (common distribution point) for decades without incident. Placing a Central UPS prior to the distribution panel does not create a cross talk problem. CPN Power has never had a cross talk issue in our decade long quest of applying Central UPS Systems.

Another common statement has been that Central UPS creates a single point of failure. UPS Systems are commonly designed with a static switch to avoid being a single point of failure. The static switch automatically transfers in ¼ cycle or 4 milliseconds from on inverter to the static bypass circuit internal to the UPS. The load does not see this transfer. In addition to the internal, automatic static bypass circuit, CPN Power always includes an external three breaker make-before-break wrap around maintenance bypass allowing for complete UPS isolation. This level of redundancy is acceptable for most applications. If this approach is not acceptable, then parallel UPS modules can offer a higher level of redundancy.

Medical equipment vendors have stated on multiple projects that CPN Power under-sizes the Central UPS System for the given loads. We have witnessed equipment vendors telling customers that the CPN Power UPS cannot support 10-12 suites on a 500 kVA UPS. Yet, we install 500 kVA UPS quite often and we support 10-12 Suites and occasionally more suites without incident. We have installed Central UPS only to have the MEV call the customer and strongly recommend against placing their modalities on the Central UPS. The MEV states that the Central UPS cannot properly support multiple suites. The customer ultimately disregards the MEV and transfers the given modalities onto the Central UPS without incident. History is plagued with skeptics and naysayers stating that the world is flat or that heavier than air flying machines are impossible. CPN Power has proven that Central UPS for Diagnostic Imaging works. Due to great load diversity, Central UPS offers dramatic cost and space savings to the Hospital, Imaging Center, or Oncology Center.

**History is plagued with skeptics and naysayers stating that “the world is flat” or “that heavier-than-air flying machines are impossible”.**

**CPN Power has proven that Central UPS works well for Diagnostic Imaging applications.**

By specializing in one area of expertise, CPN Power has become the leader in the application of Central UPS for Diagnostic Imaging and Radiation Therapy. We continue to hold that leadership position because of our never-ending desire for knowledge and meeting our goal of providing the correct UPS System size for the given application. CPN Power never under sizes the UPS, but sometimes over sizes the UPS to account for equipment upgrades that will draw more power or future modalities that will or might be added to the Central UPS. We not only consider the imaging equipment being applied today, but we consider the path where imaging equipment power requirements are heading. We consider the power profile of a 1.5T MRI vs. a 3T MRI from all manufacturers to assure that the Central UPS will support the long-term power profiles. We have no crystal ball, but we can observe and account for possible future power profiles. **By offering a different approach toward power protection for Diagnostic Imaging, the CPN Power Central UPS approach continues to be well accepted by the customer.**