DATA CENTER BRIEF

Data Center Decommissioning Series: UPS

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DATA CENTER GUIDANCE

Decommissioning data center assets can become an unexpected and significant cost. Addressing your UPS will happen at least once in the life of a data center. There are a myriad of considerations and logistical challenges. First let's consider some key aspects to consider when shutting down your data center.

Don't take shortcuts. Often you know in advance that you will be exiting your data center. As such there is temptation to cancel the PM contract for UPS/batteries and divert that money elsewhere. However, the last thing you want during a transition off site is a UPS failure. In fact, you may consider pushing up a PM to ensure that no surprises will occur. Remember, risk mitigation is one of your primary responsibilities.

Are there systems outside the data center being supported? Often in multi-use buildings, the UPS has been "tapped" to support other areas e.g., IDFs, offices, etc. Address those situations if they exist.

Leverage expertise to ensure safety. As with other electrical systems, leverage your building electrical contractor, who best knows your electrical infrastructure, for planning and cost estimates. Additionally, have your UPS vendor provide technical and shutdown support. There are safety issues to be considered. UPS capacitors retain voltage therefore need some time (couple of hours) to dissipate after power is shutdown. Some maintenance bypass configurations do not truly remove all power from inside the UPS. In older multi-module systems, there may be breakers inside a UPS that are still hot.

End of life UPS might still have some value. While old equipment may not have value for re-use, it might have value for parts, particularly if they are no longer available. Your UPS vendor or others might offer to reduce the decommissioning costs if they can get the unit for parts (e.g., remove the unit for no charge).

Protect against liability. Battery removal and disposal is typically the most significant issue. From a practical standpoint, make sure your contractors have on hand spill containment such as battery acid spill kits, absorbents, etc. Have your vendor provide you with a certificate of proper disposal/destruction/recycling that references EPA compliance including information about the companies responsible for transportation, temporary storage, smelter/recycling agent. If you have a really old UPS (30 years), it that may have a transformer that contains PCBs. Inquire with the manufacturer about that and whether there are EPA regulations that would apply such as Title 40 of the Code of Federal Regulations (CFR), part 761, subpart D which provides guidance as to whether a disposal activity requires approval and contacting a local EPA Regional PCB Coordinator with any questions.

If only replacing your UPS. If replacing your existing UPS with a new one, consider the following. First, it's an opportunity to right size both UPS and battery plant. Consider lithium-ion batteries: a) the pay-back is longer than a normal ROI threshold but battery replacements, which are a risk event, are reduced; b) space savings are significant; c) they are more resilient. If increasing UPS size, your engineer will need to review upstream infrastructure capacity and wire sizing. Think about improvements such as wrap-around maintenance bypass. If you have redundancy, leverage a phased replacement to minimize downtime. If you don't, but have available adjacent space, install the new UPS equipment first, test it, then cutover to it to minimize downtime. Then remove the existing at your leisure. Make sure your electrical contractor creates then reviews and gets approval from your team a Method of Procedure (MOP) listing all discreet tasks and durations as well as a back-out process if needed. Don't forget to address EPO configuration if applicable.

About the Author

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