

Case Study



Albuquerque International Airport

Uninterrupted Skies: Active Power Flywheel Ensures Seamless Operations at Albuquerque Sunport



Figure 1. Albuquerque International Airport

CUSTOMER AND LOCATION

Albuquerque International Airport (aka Sunport) is New Mexico's largest commercial airport, offering 415 flights per day and sees five million passengers per year. The airport is nestled in the heart of New Mexico and stands as a gateway to the captivating landscapes and cultural richness of the American Southwest. Serving as a vital hub

for both business and leisure travelers, this airport boasts a welcoming atmosphere and state-of-the-art facilities. Whether passengers are arriving to explore the enchanting desert vistas, immerse themselves in the diverse history and culture, or connect with global destinations, Albuquerque International Sunport strives to ensure the journey is convenient and comfortable.

CUSTOMER REQUIREMENT

As the airport continues to elevate the passenger experience, its top priorities have shifted towards enhancing security and reliability, with a strong emphasis on supporting critical operations such as TSA and the 911 call center, while also streamlining baggage screening and distribution processes.

The airport's journey began when it engaged with Wagner Equipment Co., the trusted local CAT dealer known for its strong partnership with Active Power.

The initial inquiry revolved around the replacement of aging generators (or gensets), that had faithfully served the airport for over three decades. However, as discussions unfolded, a key concern with the previous solution surfaced – the 10-second power outage experienced during genset startup. Recognizing the imperative for a seamless transition, CAT Wagner Equipment Co. introduced the airport decision-makers to the Active Power CLEANSOURCE® flywheel UPS solution.

THE ASSURANCE OFFERED BY ACTIVE POWER FLYWHEEL UPS SYSTEMS

Active Power Flywheel UPS are chosen to support Airport critical infrastructure around the world for the following reasons:

- ▶ **CONTINUOUS OPERATIONS:** Airports are 24/7 facilities with no downtime. Our UPS systems provide backup power during electrical outages or fluctuations, ensures critical systems like communication networks, security systems, and baggage handling can function without interruption.
- ▶ **BAGGAGE HANDLING:** UPS systems keep baggage handling systems running smoothly, preventing baggage jams, loss, or delays that can disrupt passenger travel and lead to logistical challenges.
- ▶ **SECURITY:** Airport security systems, including surveillance cameras and access control systems, depend on consistent power to maintain safety and monitor critical areas. UPS systems provide this stability.

- ▶ **PASSENGER EXPERIENCE:** Passenger comfort and convenience are paramount at airports. UPS systems keep facilities operational, ensuring that elevators, lifts, lighting, and other amenities remain accessible during power disruptions.
- ▶ **MINIMIZING DELAYS:** UPS systems help prevent flight delays caused by power-related issues, ensuring that flights stay on schedule and passengers reach their destinations as planned.
- ▶ **COST SAVINGS:** By preventing downtime and minimizing disruptions, UPS systems ultimately save airports money by reducing operational losses and avoiding the need for expensive emergency repairs.

Active Power Flywheel UPS achieve all the above with higher operating efficiency and lower TCO (total cost of ownership) than the chemical battery alternatives. There's no need for temperature-controlled battery rooms, additional fire monitoring and suppression, and costly disruptive replacements every 5-10 years.

SOLUTION



Figure 2. Active Power CLEANSOURCE® XT MMS UPS - 500kW.

4x CLEANSOURCE® XT MMS UPS

- ▶ 500kW, 480V, 60Hz, UL, 4-Wire
- ▶ Up to 98% efficient
- ▶ Half the space of legacy battery-based UPS
- ▶ Modular and Scalable Design

In addition to delivering four of the flywheel UPS systems shown above, Active Power equipped the customer with four external 1000A Maintenance Bypass Cabinets featuring the added safety of a Solenoid Key Release Unit (SKRU). This setup ensures convenient power redistribution during maintenance procedures and enhances operational efficiency and safety.

TIMELINE

TIMELINE	
January 2021	Opportunity created
November 2021	Customer places PO
July 2022	Active Power ships and delivers UPS and Switchboard to site
January 2022	All 4x CLEANSOURCE® XT MMS 500kW UPS commissioned and online protecting load

OUTCOME AND FUTURE

The project culminated in resounding success as all four Flywheel UPS systems were commissioned and now safeguard the airport's critical infrastructure effectively. The elimination of unexpected power outages ensures the comfort and security of passengers, granting the airports facility staff peace of mind, thanks to a state-of-the-art Active Power Flywheel UPS system dedicated to power conditioning and protection around the clock for the next two decades.

Following the success of the first installation, the airport is already considering plans for an additional two 500kW Active Power Flywheel UPS systems to protect a repurposed baggage claim area.

Furthermore, the city of Albuquerque is considering a substantial upgrade for their downtown data center, contemplating the removal and replacement of numerous battery-based UPS units with flywheel-based UPS systems. This strategic move aims to significantly boost overall site efficiency, bolster reliability, and further underlines the City's commitment to maintaining top-tier performance standards.

IMAGES



Figure 3. One of four CLEANSOURCE® XT 500Z UPS installed on a concrete pad.



Figure 4. One of four CLEANSOURCE® XT 500Z UPS undergoing commissioning.



Figure 5. One of four 1000A MBP with SKRU manufactured by C&C Power supplied by Active Power.



Figure 6. Wagner CAT supplied diesel generator and load bank used during commissioning.

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