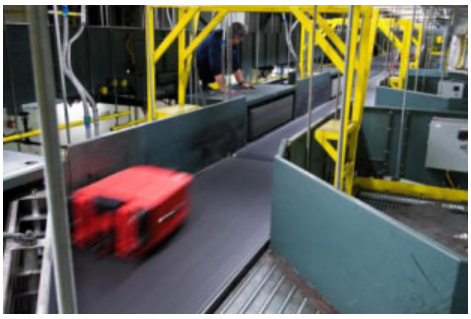
Value Added Services

Reducing BHS Energy Consumption (ATL)



ELS has provided the operations and maintenance services for the Hartsfield-Jackson Atlanta International Airport North Terminal since the middle of the last decade. The BHS has more than 15,000 feet of conveyor and 800 electric motors (480 volt, three phase) ranging in size from 2 to 7½ horsepower.

The North Terminal BHS is certified for 1,950 bags per hour through the 9 CTX EDS machines. There are 10 ticket counters and 7 curb side input conveyors feeding baggage into 2 primary conveyor lines. These primary conveyor lines carry baggage to 2 security feed lines, which then feed to 1 of 18 conveyors that deliver to the CTX machines. No risk bags exit the machines and are routed to the "clear" conveyors and sorted to the individual airlines. Bags that are identified for manual search are routed to the "not clear" conveyors for further processing by the TSA.

The ELS maintenance team identified the potential to reduce energy consumption by routing baggage differently during periods of lower bag volume. This revised routing was managed through PLC programming that enabled sections of the outbound BHS to be shut down to conserve energy. This allows bags to be routed to a single bank of CTX either 1-5 or 6-9, which enables better capacity management and the isolation of unneeded machinery. When the daily volume is forecast to be less than 1,800 bags for each 2 hour period of the operating day, ELS reroutes the normal flow to

Energy Facts

- **Abstract:** Attention to the thousands of moving parts, hundreds of motors and "miles" of conveyor provides significant opportunity to reduce system energy demand.
- **System Statistics:** The North Terminal at the "worlds" busiest airport; 15,000 ft of conveyor, 800 electric motors, 17 input conveyors.
- **Potential Savings:** 2 million KWH annual savings = $150,000 per year and reduced cost for parts and labor.
- **Project Completion:** On-going

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allow the secondary lines that convey bags to and from CTX machine banks 1 - 5 or 6 - 9 to be shut down by implemented changes to the PLC programming. This is accomplished by configuring the system to route all bags to security feed line 1. The High-Speed Diverters on this line are disabled to the security spur conveyors to prevent bags from being routed to the CTX machines on those lines. The PLC power management programming already in place will then time out the unused SF2 conveyor line and every feed or exit line associated with that bank of conveyors as well as sections of main clear lines. ELS constantly monitor bag volume and other activities in the system to immediately return the system to a full capacity when demand dictates.

The energy savings that are achieved from these procedures have been calculated to be in excess of 5,600 kilowatt hours per day or more than 2 million kilowatt hours annually, for an approximately savings of $150,000 per year. An additional benefit will be seen over time in the form of lower maintenance cost for parts and labor as the wear and tear is significantly reduced. All energy and maintenance cost savings are passed directly to ELS' customer, the Atlanta Airlines Terminal Corporation their shareholders and the operating airlines.

The table summarizes the estimated KWH savings for each bank of conveyors. Actual savings have exceeded these estimates.

Bank 1-5			Bank 6-9		
LINE	FLA	KWH	LINE	FLA	KWH
SS1[1]	79.0	720.7	SS6	79.0	720.5
SS2	79.0	720.7	SS7	79.0	720.5
SS3	79.0	720.7	SS8	79.0	720.5
SS4	79.0	720.7	SS9	79.0	720.5
SS5	79.0	720.7	CL6-1-6		
CL1-1-5			CL7-1-6		
CL2-1-5			CL8-1-6		
CL3-1-5			CL9-1-6		
CL4-1-5	69.4	632.9	CL10-4-8	114	1039.7
CL5-1-8	49.0	49.0			
SF2	101.9	101.9		101.9	929.1
Estimated daily Savings - KWH		**5,612**			**4,851**

SS1[1]-SS9 includes SSX-1-5, 50-55, SD/CLX-01, NCX-1-4, PLC (X= a number 1-9)

Note: Estimated KWHs savings are calculated using Full-load Amperage (FLA) and is based on a continuous 19-hour day. Final savings will be affected by variations in the actual amp draw of each component during normal operation. Power savings for the CTX machines are not included in this estimate. All final changes are completed with the cooperation of the TSA and customer.

OUR ENERGY MISSION: ELS is dedicated to saving energy whenever possible. We actively seek ways to perform more efficiently to leave a smaller carbon footprint during and after our maintenance services. The improved operational efficiency equates to significant cost savings to our customer and a corporate responsibility to our planet. To learn more how ELS can add value to your maintenance requirements contact us today.

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