

Runway Project Takes Off

Dorothy Kennedy

Passengers and the general public are often surprised to hear the air traffic control tower at Philadelphia International Airport (PHL) is busier than both the New York and Washington DC area airports. But when you consider its location at the center of the busy Northeast Corridor, the designation makes sense. To give you an idea of the facilities' operational intensity, PHL accommodated a record 28.5 million passengers, including 4 million international passengers, and handled more than 486,000 aircraft takeoffs and landings in 2004. More than 604,000 tons of cargo and mail are moved annually by commercial airlines and cargo carriers. Arora Engineers, Inc., of Chadds Ford, PA is preparing preliminary and final designs for the proposed Runway 17-35 Extension Project at the busiest airport in the FAA's Eastern Region., Philadelphia International Airport (PHL).

PHL is also considered one of the most delayed airports, due partly to the airport's current configuration which includes four runways - two longer, primary ones and two shorter, secondary ones. The shorter

runways are not long enough to handle regional jets optimally. The increasing use of regional jets, which are rapidly replacing turboprop and small, narrow-body aircraft, places an unanticipated burden on the two longer runways. This lack of adequate runway surface, combined with additional factors, has resulted in increasing delays. Because the two longer runways are too close together to allow for simultaneous takeoffs and landings during periods of low visibility, these delays are exacerbated during poor weather conditions.

As engineer of record for electrical and electrical aeronautical systems, Arora Engineers is working on this challenging project with Urban Engineers, Inc., of Philadelphia. The project will increase the length of PHL's North-South runway by 1,040 feet to approximately 6,500 feet. Extending the runway by 640 feet to the north and 400 feet to the south will enhance PHL's ability to accommodate regional jets. When completed, the extension will shift more than 120 operations to Runway 17-35 and reduce congestion on the airport's

primary runways. The result will be reduced delays at PHL and, consequently, throughout the system of national airports.

Arora's design includes modifications and improvements to airfield lighting,

airport service roads and a portion of the Economy Parking Lot and State Route 291, in addition to relocating runway safety areas, connecting taxiways and navigational aids.

Arora Engineers has a 16-year history in working on projects at PHL. The firm's familiarity with the facility adds significant value on a project of this complexity, according to Manik Arora, president and CEO of Arora Engineers and project principal.

"The real challenge is the project's complex phasing," said Arora. "Route 291 will have to be vacated so we'll be working with Pennsylvania Department of Transportation on the phasing of that. And we'll be working on the extension of both ends of the runway with departure and arrival activity in progress."

To manage these challenges, engineers are tackling the project in three phases: landside development; Runway 35 surcharge; and the actual extension of the airfield, the ends of the runway and all sub-systems. Arora's scope for design includes: Low Visibility Systems, Runway Incursion Lighting, Approach Lighting, Airfield Lighting - Taxiway and Runway, Control and Monitoring, Signage, Instrument Landing Systems (NAVAIDS), Global Positioning Systems, Parking Lot Lighting, Primary and Secondary Power distribution.

Arora is confident the estimated \$40 million project will be brought in on schedule.

"Everything per the FAA's record of decision has to be commissioned and opened by the end of 2007," said Arora. "With Urban Engineers we've come up with a design to make it work." ■

