



# COMBINED HEAT AND POWER EDUCATIONAL SERVICES UNIVERSITY OF ILLINOIS HOSPITAL

OWNER  
**University of Illinois Hospital**

PROJECT ENGINEERING  
**EME, LLC**

ENGINEERING, PROCUREMENT AND CONSTRUCTION  
**Solar Turbines Incorporated**

PRODUCT  
**Three (3) Taurus™ 70 Natural Gas Turbine Generator  
Sets With Heat Recovery Boilers**

CUSTOMER VALUE  
**Power Reliability, Energy Savings, Reduced  
Emissions, Island Mode Operation**

A major hospital that treats critically ill patients cannot afford power failures. Facing intermittent power problems – and needing to replace old boilers – the 536-bed University of Illinois Hospital installed a 24 MWe cogeneration system for its campus in Chicago. Powered by three (3) Taurus 70 natural gas turbine generator sets, the system fulfills 100 percent of campus power needs in winter and 72 percent in summer. The system provides low-cost steam for space heating and domestic water heating for 32 campus buildings. It also supplies heat for medical equipment sterilization and food preparation and delivers summer cooling through several absorption chillers. If utility power fails, the Solar® turbine generators can operate in island mode, disconnected from the grid.

**Solar® Turbines**  
*A Caterpillar Company*



## PLANT DATA

Three (3) 8 MWe Taurus 70 Gas Turbine Generator Sets

Three (3) Heat Recovery Boilers  
(Steam up to 180,000 Pounds per Hour)

Single-screw Gas Compressors

Absorption Chillers (Total 4,600 Tons)

Real-time Energy Monitoring System



## OUR PRODUCTS AND SERVICES

Gas Turbine Packages and Auxiliary Equipment

Engineering, Procurement and Construction Services

SoLoNOx™ Dry Low-emissions Technology

Start-up and Commissioning

Extended Service Agreement

**HIGH-POWER RELIABILITY**

**ISLAND MODE CAPABILITY**

**REDUCED NO<sub>x</sub> EMISSIONS**

The turbine generators are housed in a 6,000-square-foot building next to the hospital's boiler plant. Turbine exhaust passes through two heat-recovery boilers with fresh-air firing capability. To optimize energy costs, operators use real-time energy monitoring. Besides saving on energy, the cogeneration system produces lower NO<sub>x</sub> emissions than the old boilers. "Rather than just replace the boilers, it made sense for the medical center to go to cogeneration," says Ron Demski, PE, project manager with the engineering firm EME, LLC of Chicago. "By making just an incrementally greater investment, they were able to make electricity and steam from the turbine exhaust heat."

## Solar Turbines Incorporated

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