

## Regional Super ESPC Saves Energy and Dollars at NASA Johnson Space Center

*Regional contract enables Houston space flight center to reduce utility bills by nearly \$2 million per year while conserving energy and water*

### Overview

NASA will save approximately \$43 million in facility operations costs over the next 23 years at the Johnson Space Flight Center (JSC) in Houston, Texas, thanks to the largest delivery order signed to date under a Regional Super Energy Savings Performance Contract (Super ESPC). The U. S. Department of Energy's Federal Energy Management Program (FEMP) instituted these special Regional Super ESPCs to streamline the financing process for Federal agencies.



NASA/PIX03814

The NASA Johnson Space Flight Center in Houston is well known for its achievements in the U.S. space program (this 1994 photo shows the Space Shuttle Columbia during a launch).

The project calls for many new and improved energy and water efficiency measures that bring about energy, water, and cost savings now and for many years to come. A delivery order was issued to Honeywell in February 1999 under a FEMP Super ESPC awarded in July 1998. Under the terms of this delivery order, Honeywell is installing energy-efficient lighting and compressed-air systems; implementing measures to reduce water consumption; and improving air-conditioning and lighting control systems in more than 140 buildings at JSC, the Sonny Carter Training Facility, and Ellington Field in Houston. Honeywell's initial investment of about \$20 million should save nearly \$2 million a year in energy and water costs.

As JSC begins realizing these cost savings, Honeywell will receive a portion of them in payment for its investment. Additional investment and savings, through follow-up delivery orders, are also possible over the next several years.

### Background

The project was originally designed to be carried out in phases under multiple contract awards. Eventually, however, the project team decided to make use of a FEMP Super ESPC and worked through DOE's Denver Regional Office. They combined the phases under one delivery order for the entire project. These region-based Super ESPCs allow agencies to contract with competitively selected energy service companies (ESCOs) in their region for a variety of energy and water efficiency services. These contracts also include maintenance, which is usually done by the ESCO.

### Project Summary

Honeywell staff worked closely with JSC's Energy Management Team at the Houston site to identify

### Reduce Utility Bills with Energy Savings Performance Contracts

The Department of Energy's Federal Energy Management Program (FEMP) helps government agencies use Energy Savings Performance Contracts (ESPCs) to finance many kinds of energy efficiency projects.

#### Benefits of ESPCs:

- New equipment
- No up-front costs
- Energy and water savings
- Lower utility bills
- Improved reliability and load management
- Better air quality.

FEMP has developed streamlined "Super ESPCs" so that Federal agencies can contract with preselected energy-service companies to implement projects. FEMP's six Regional Super ESPCs allow agencies in a particular U.S. region to place delivery orders with the preselected companies. Technology-Specific Super ESPCs can help any facility in the country obtain access to financing for certain advanced energy technologies.

#### Advantages of Super ESPCs:

- Prequalified, competitively selected energy-service companies
- Expedited contracting process
- Ability to combine multiple projects or facilities in one contract
- DOE's technical and contracting expertise.

For more information, please call 1-800-363-3732 and see FEMP's Web site (<http://www.eren.doe.gov/femp/financing/escp.html>).



## ESPC Case Study

U.S. Department of Energy

Office of Energy Efficiency and Renewable Energy



dozens of potential energy and water conservation measures and improvements. The JSC-Honeywell team then determined the feasibility of these measures, estimated their potential long-term savings, and prepared a guaranteed savings proposal.

The project team looked to FEMP to help verify calculated savings, validate proposed measurement and verification methods, and confirm price schedules.

Working closely with the JSC-Honeywell team, FEMP staff validated the guaranteed savings proposal. One unexpected, but not unusual, result occurred when the FEMP/JSC/ Honeywell team identified more than \$1 million worth of additional operations and maintenance savings. These savings came about because Honeywell would manage the new building control system, so an existing building management contract could be cancelled. The savings were applied to the contract at no additional cost to JSC. The result was a win-win situation for all participants.

**Lessons learned**

FEMP's review of the technical proposal and support during negotiations allowed JSC to make the award quickly and confidently, thereby shaving several weeks off the process. JSC should realize about \$40,000 in energy savings each week.

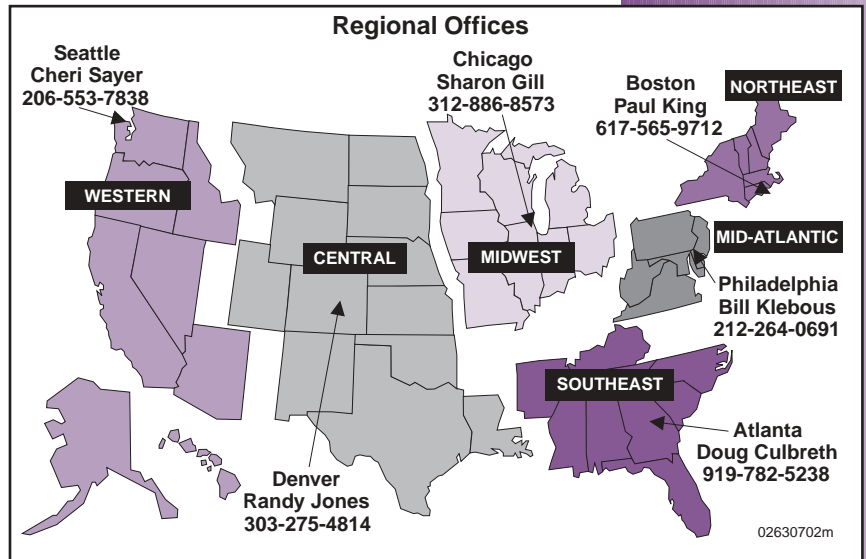
**Quality assurance**

Measurement and verification (M&V) of energy savings are negotiated as part of the delivery order. Honeywell's M&V activities concentrated on commissioning and first-year performance. Honeywell has also placed a technical resource manager on the site for the first five years of the contract to ensure that the new equipment is operating effectively and to help develop new energy-saving measures for follow-up delivery orders.



NASA/PIX08074

NASA JSC is becoming more energy efficient, thanks to using a Super ESPC.



**Looking ahead**

Because of this project's size, energy conservation measures will be commissioned incrementally in 10 steps over a 15-month construction period. This will allow savings and payments to begin sooner and shorten the term of the contract. After construction, Honeywell, JSC, and the site operations and maintenance contractor will work together to deliver predicted savings and look for additional opportunities for energy efficiency improvements.

Completed and planned awards include those for the Glenn Research Center and Ames Research Center.

**For More Information**

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Produced for the U.S. Department of Energy by the National Renewable Energy Laboratory, a DOE national laboratory

DOE/GO-102001-1308  
 May 2001

Printed with a renewable-source ink on paper containing at least 50% wastepaper, including 20% post consumer waste