



Federal Government

## Aberdeen Proving Ground

Aberdeen, MD



### HIGHLIGHTS

- 15 megawatts of distributed generation provided by six diesel electric generator sets
- \$4 million in projected annual energy cost reductions
- \$20 million in PV life-cycle cost savings
- \$50 million in total life-cycle cost savings
- Project provides site security and energy independence for mission-critical facilities
- CEPS provides guaranteed availability, full operations and plant maintenance

### CUSTOMER PROFILE

Aberdeen Proving Ground (APG) is a center for United States Army materiel testing, laboratory research and military training. Occupying 72,500 acres along the Chesapeake Bay, APG hosts 66 federal government tenants including the Aberdeen Test Center: U.S. Research, Development and Engineering Center, and the Army Developmental Test Command. As the “Home of Ordnance” and a center for chemical warfare research and development, APG is a key element in the nation’s defense.

### PROJECT DESCRIPTION

Executive Order 13123 requires that federal agencies meet strict energy-efficiency improvement goals, including a 20-to-30 percent reduction in energy consumption. Having already created a successful Energy Conservation Partnership with APG, CEPS was tasked with planning and implementing aggressive strategies to reduce energy costs and make APG more energy self-sufficient. APG awarded CEPS the contract to design and install 15 megawatts of distributed generation, with an additional eight megawatts to be added in the future.

CEPS installed six 2500-kilowatt diesel electric generator sets to meet its 15-megawatt goal. The system includes a five-kilovolt (5 KV) switchgear building, with paralleling controls, battery back-up and black-start systems. Two transformers step up the voltage from five to 35 kilovolts for distribution. Two 35-kilovolt (35 KV), tie-breaker switchgear line-ups, complete with revenue metering, connect the generation system to Aberdeen’s electrical distribution system. High-speed

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## TECHNICAL SPECS

- SCR technology reduces nitrogen oxide emissions by more than 90 percent
- Sound attenuated enclosures for generator sets reduce noise
- Five-kilovolt, walk-in switchgear building houses paralleling controls, battery back-up and black-start system
- Two 35-kilovolt, tie-breaker switchgear line-ups connect the system to Aberdeen's electrical distribution system

communications transfer data and control signals between the facility and the main incoming substation. Controls have been incorporated for island mode operation in the event of an extended utility outage.

CEPS's distributed generation system at APG reduced more than the facility's energy costs. Selective catalytic reduction (SCR) systems installed on the diesel generator sets reduced emissions of nitrogen oxides by more than 90 percent. By housing each generator set in a sound attenuated enclosure, CEPS also reduced system noise. Other plant upgrades included a fuel-forwarding system from APG's existing bulk fuel storage, and a complete 10,000-gallon urea storage and forwarding system for the SCRs. CEPS will provide guaranteed availability, full operations and maintenance of the distributed generation plant for a 10-year term.

## FINANCING ARRANGEMENTS

APG and CEPS developed this project using alternative financing, and teamed with Bonneville Power Administration to solicit financing offers. This financing structure reduced the federal government's interest rate by an additional 100 basis points.

## CONTACT INFORMATION

Constellation Energy Projects & Services Group  
7133 Rutherford Road  
Suite 401  
Baltimore, MD 21244  
  
1-800-436-3749  
Fax: 410-907-2070  
  
[www.ceprojects.com](http://www.ceprojects.com)

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