Overview of SRS Energy Management Program

Achieving the vision of the Savannah River Site

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Savannah River Site Citizens Advisory Board
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Purpose

• To satisfy a 2013 Facilities Disposition & Site Remediation (FD&SR) Work Plan topic.

• Provide an overview of the Savannah River Site Energy Management Program performed on site to achieve the energy efficiency goals and requirements established by the required orders and acts.

• Providing update to the CAB on the Savannah River Site Energy Management Program.
Briefing Overview

- Purpose
- Drivers
- Table of Energy Goals, Performance Status, and Current and Planned Actions
- Summary
- Questions
Drivers

• Department of Energy Order 436.1, “Departmental Sustainability,” May 2, 2011*


• The Energy Policy Act of 2005 (Public Law 109-58), August 8, 2005


* Orders can be found at http://www1.eere.energy.gov/femp/regulations/requirements_by_reg.html
## Energy Intensity

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<th>Goal</th>
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<th>Current and Planned Actions</th>
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| 30% energy intensity (energy consumption / square footage) reduction by FY 2015 from a FY 2003 baseline. | • SRS has currently achieved a 43.2% reduction through FY 2012 compared to FY 2003 baseline.  
• SRS energy intensity decreased by approximately 6.4% in FY 2012 versus FY 2011. | • SRNS will continue to replace Heating, Ventilation, and Air Conditioning systems with higher Seasonal Energy Efficiency Ratio units.  
• Evaluate facility audit results of square footage.  
• Continue to use Peak Alert to control peak demands for purchase electricity. |
Performance Status

DOE-SR Performance Toward 30% Energy Reduction Goal

Impact of new Biomass Cogeneration Facility

Percent Reduction versus FY 2003 Baseline BTU/Gross Sq. Ft at SRS


Goal % Reduction
## Metering

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| Individual buildings or processes metered for 90% of electricity (by October 1, 2012) and for 90% of steam and chilled water (by October 1, 2015). | • SRS Metering Plan was developed in FY 2011.  
• Existing metering program includes over 200 electrical meters and 15 steam meters to provide energy use data.  
• SRS uses meter data as part of comprehensive billing and cost allocation system.  
• Meter data is directly correlated with various multi-building processes / programs across SRS.  
• Not all buildings are individually metered but individual processes / programs are a part of costing efforts. | • Continue to use existing metering of multiple rather than individual processes / buildings.  
• Continue metering of High Performance and Sustainable Buildings. |
## Renewable Energy

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<td>7.5% of SRS’s annual electricity consumption from renewable sources by FY 2013 and thereafter (5% FY 2010 – 2012) (Double credit if the energy is produced on-site).</td>
<td>• Generated a total of 1.67 billion pounds of steam and 97,000 megawatts of electricity during performance period.</td>
<td>• SRS will use the new Biomass Cogeneration Facility to produce SRS process steam and up to 20 megawatts of “green” power.</td>
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<td>• Consumed more than 10,000 tons of tires and 221,000 tons of clean biomass during performance period.</td>
<td>• The Biomass Cogeneration Facility has a life expectancy of approximately 30-40 years.</td>
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<td>• Reduction of over 1 billion gallons of water from the Savannah River annually.</td>
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<td>• Reduction of greenhouse gas emissions by about 100,000 tons per year.</td>
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<td>• Meeting and exceeding all SRS renewable energy goals in federal directives.</td>
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<td>• Over $34 million dollars a year in energy and operational savings.</td>
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# High Performance Sustainable Buildings – Existing Buildings

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| • 15% of existing buildings larger than 5,000 gross square feet to be compliant with the five Guiding Principles of High Performance Sustainable Buildings by FY 2015. | • SRS contracted with Energy Ace to provide energy auditing, commissioning, and American Society of Heating, Refrigerating and Air Conditioning Engineers compliance evaluation for nine buildings in FY 2012.  
  • Approximately 546,000 square feet of building space was evaluated. | • A new management-sanctioned team to oversee High Performance and Sustainable Buildings program activities in FY 2013.  
  • A plan will be developed to implement policies and take actions in FY2014/2015.  
  • Facilities input into Environmental Protection Agency Portfolio Manager database in FY 2013. |
# Energy and Water Evaluations

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<td>The Energy Independence Security Act requires evaluations of 25% of</td>
<td>The Sustainability Program Office funded energy and water conservation evaluations</td>
<td>Evaluation of the report will be conducted in FY 2013.</td>
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<td>covered facilities each year, so that an evaluation of each facility is</td>
<td>at SRS in FY 2012.</td>
<td>Benchmarking of several buildings will be initiated as part of the High Performance and</td>
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<td>completed at least once every four years.</td>
<td>A total of 2.8 million square feet of covered facilities were evaluated by Enviro-</td>
<td>Sustainable Buildings activities through inclusion of data in the Environmental Protection</td>
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<td>Management &amp; Research, Inc.</td>
<td>Agency Portfolio Manager database.</td>
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## Fleet Reduction

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<td>• 2% annual reduction in fleet petroleum consumption by FY 2020 relative to a FY 2005 baseline.</td>
<td>• SRS has reduced its petroleum usage by approximately 19% in FY 2012 relative to a FY 2005 baseline.</td>
<td>• SRS is implementing a 35% reduction of vehicles over 3 years. This effort will help reduce petroleum usage.</td>
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<td>• SRS has a system in place to maximize Ethanol 85% (E85) Alternative Fuel Vehicle usage.</td>
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<td>• SRS is participating in the General Services Administration Plug-In Electric Vehicle Pilot program.</td>
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Fleet Reduction

Chevrolet Volt
# Electronic Stewardship

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| **Electronic Stewardship** – 100% of eligible personal computers, laptops, and monitors with power management actively implemented and in use by FY 2012. | • Leased desktop computers, laptops, and monitors meet the Electronic Product Environmental Assessment Tool and Energy Star requirements.  
• The lease contract requires that all computers must be Energy Star compliant and must meet low standby power requirements.  
• The power reduction features of the personal computers and monitors are set to efficient levels upon receipt of the equipment. | • SRS will continue to ensure leased desktop computers, laptops, and monitors continue to meet the Electronic Product Environmental Assessment Tool and Energy Star requirements. |
Summary

• Savannah River Site is currently meeting/exceeding the 30% energy intensity reduction goal for FY 2015.

• Savannah River Site will continue to use existing metering of multiple rather than individual processes / buildings.

• Savannah River Site is meeting/exceeding the renewable energy goal of 7.5% for FY 2013 and thereafter (up to 30% of the site electrical consumption can be generated by the new biomass facility).

• Savannah River Site is taking action on High Performance and Sustainable Buildings activities and will develop policies for FY 2014 and FY 2015.
• Savannah River Site will evaluate the final report on facilities audited in FY 2012 under the Energy Independence Security Act.

• Savannah River Site is currently meeting/exceeding the 2% annual reduction in fleet petroleum consumption for FY 2020. Savannah River Site will continue the 35% vehicle reduction in FY 2013 and participate in the General Services Administration Plug-In Electric Vehicle Pilot program.

• SRS will continue to lease computers that will meet the Electronic Product Environmental Assessment Tool.
Questions?

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