

U.S. Nuclear Regulatory Commission Strategic Sustainability Performance Plan

Section 1: Agency Policy and Strategy

I. Agency Policy Statement

The U.S. Nuclear Regulatory Commission (NRC) is committed to protecting public health and safety by conducting our operations and activities in an environmentally responsible and sustainable manner. We recognize that reducing and, where possible, eliminating the environmental impacts of our activities is an important part of our mission as stewards of public health and safety. We view sustainability as a long-term approach to business planning and decision-making that balances our economic, environmental, and social responsibilities.

In support of our sustainability initiative, the NRC will:

- Meet or exceed all applicable local, state, and federal environmental laws and regulations;
- Continually enhance our business practices and services to minimize our environmental impact;
- Effectively manage the agency's ecological footprint by reducing the use of natural resources through source reduction and pollution prevention; and
- Protect and support the health and safety of our employees and the surrounding communities and ecosystems.

II. Sustainability and the Agency Mission

"The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promotes the common defense and security, and protect the environment."

Sustainability is inherent in the NRC's mission. The agency recognizes that the Earth's natural resources are not limitless, and we must do our part to preserve these resources for future generations. We must act today to maximize the many economic, environmental, and societal benefits that conservation, waste prevention, Greenhouse Gas (GHG) emissions reductions, recycling, and the purchase of environmentally preferable products can provide. At the NRC, we view sustainability as a long-term business planning and decision-making objective that encompasses our economic, environmental, and social responsibilities.

Provide a summary that describes the agency's size and scope of operations to include (as applicable to the individual agency):

Total # Employees	2752
Total Acres Land Managed	5.2
Total # Facilities Owned	0
Total # Facilities Leased (GSA lease)	2
Total # Facilities Leased (Non-GSA)	0
Total Facility Gross Square Feet (GSF)	998000
Operates in # of Locations throughout U.S.	6
Operates in # of Locations outside of U.S.	0
Total # Fleet Vehicles Owned	0
Total # Fleet Vehicles Leased	27
Total # Exempted-Fleet Vehicles (Tactical, Emergency, Etc.)	0
Total Operating Budget FY 2010 (\$MIL)	\$1.066
Total # Contracts Awarded FY 2010	2,805
Total Amount Contracts Awarded FY 2010 (\$MIL)	\$228.65
Total Amount Spent on Energy Consumption FY 2010 (\$MIL)	3.14
Total MBTU Consumed per GSF	89.94
Total Gallons of Water Consumed per GSF	25.42
Total Scope 1 and 2 GHG Emissions (Comprehensive) FY 2008 Baseline MMTCO _{2e}	13800.4
Total Scope 1 and 2 GHG Emissions (Subject to Agency Scope 1 and 2 Reduction Target) FY 2008 Baseline MMTCO _{2e}	13800.4
Total Scope 3 GHG Emissions (Comprehensive) FY 2008 Baseline MMTCO _{2e}	21552.7
Total Scope 3 GHG Emissions (Subject to Agency Scope 3 Reduction Target) FY 2008 Baseline MMTCO _{2e}	21552.7

III. Greenhouse Gas Reduction Goals

Pursuant to Executive Order (EO) 13514, on January 4, 2010, the NRC submitted its GHG reduction targets for Scope 1 and 2 emissions. The NRC has committed to a reduction target of 4.4 percent by fiscal year (FY) 2020 and a Scope 3 reduction goal of 5 percent by FY 2020.

The FY 2020 target reduction is based on NRC's plan to consolidate a number of leased facilities that are not part of our current headquarters complex to a new 358,440 square foot Leadership in Energy and Environmental Design certified office building. The energy efficiency of the new building, aggressive energy reduction efforts in the existing headquarters facilities, and some changes in how we do business will help the NRC meet its FY 2020 reduction targets.

IV. Plan Implementation

The NRC created a sustainability cross-functional team with members from each of the agency's administrative service providers to coordinate implementation of the agency's Strategic Sustainability Performance Plan. This team represents all functions that have the authority to affect the procurement or use of outside services such as contracting and procurement, utility services, human resources, information technology (IT) service equipment, transportation services, and recycling and waste handling. Team meetings are held monthly to evaluate new project initiatives, strategic plans, and the performance of ongoing projects to ensure that our path for meeting the NRC's GHG

reduction targets is appropriate. Team plans and findings are reported to management for evaluation, approval, and budget considerations.

Building energy managers, IT specialists, contracting officers, human relations specialists, and members of the Office of the Chief Financial Officer and the Office of Administration are tasked with implementing approved procedures, policies, and projects. The Office of Administration is responsible for staff notification, follow-up on implementation, measurement of progress, documentation, and reporting the results. Reports are evaluated by the team to ensure the desired results are met, and if not, recommend additional actions to be taken.

Table 1: Critical Planning Coordination

Originating Report / Plan	Scope 1 & 2 GHG Reduction	Scope 3 GHG Reduction	Develop and Maintain Agency Comprehensive GHG Inventory	High-Performance Sustainable Design / Green Buildings	Regional and Local Planning	Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Agency Specific Innovation
"Sample Plan"	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	No
GPRA Strategic Plan	No	No	No	No	N/A	N/A	N/A	Yes	No	No
Agency Capital Plan	No	No	No	N/A	N/A	N/A	N/A	N/A	No	N/A
A-11 300s	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Annual GHG Inventory and Energy Data Report	Yes	Yes	N/A	Yes	N/A	Yes	N/A	N/A	N/A	Yes
EISA Section 432 Facility Evaluations/Project Reporting/Benchmarking	Yes	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Budget	Yes	No	No	No	N/A	Yes	Yes	Yes	Yes	Yes
Asset Management Plan/3 Year Timeline	No	No	No	No	N/A	No	No	N/A	No	No
Circular A-11 Exhibit 53s	Yes	No	No	No	N/A	N/A	N/A	No	No	No
OMB Scorecards	No	No	No	No	No	No	No	No	No	No
DOE's Annual Federal Fleet Report to Congress and the President	Yes	Yes	Yes	N/A	No	N/A	N/A	N/A	N/A	N/A
Data Center Consolidation Plan	Yes	Yes	No	Yes	N/A	N/A	N/A	Yes	Yes	Yes
Environmental Management System	Yes	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructions for Implementing Climate Change Adaptation Planning	Yes	Yes	Yes	No	No	N/A	N/A	Yes	Yes	N/A
Other (reports, policies, plans, etc.)										

V. Evaluating Return on Investment

The NRC uses a simplified cost to savings formula with a maximum payback of 15 years for building energy savings projects. New procedures, initiatives, and strategic plans are evaluated differently. Initially we look at the desired results and determine if the effort will meet that goal, and compare the cost of the effort to the expected outcome. Then we determine how the procedure, initiative, or plan

will affect our staff's ability to perform their work and if it has any negative impacts, such as an effect on the quality of employee work life or the surrounding community. All of these issues are reviewed with our management and employee union prior to calculating a return on investment (ROI).

VI. Transparency

The NRC has a public and internal web page which will be used to communicate the agency's commitment, goals and progress toward meeting our energy and GHG reduction targets. Internal bulletins and notices are also used to inform staff of new policies, projects, and procedures.

Section 2: Performance Review and Annual Update

I. Summary of Accomplishments

During FY 2010, the agency implemented and continued a number of energy reduction projects. A new building automation system was installed along with variable frequency drive motor control systems in the Two White Flint North (TWFN) building. This system will reduce overall heating and cooling costs by greater than 10 percent, while improving comfort levels in the building. Also, individual HVAC system components are being replaced due to failure or end of lifecycle with new high efficiency units. Power strips with motion sensors are provided to all employees for their workspace to allow lights and monitors to turn off when employees are not at their workstation. In addition, the agency continues to expand the telework program to allow employees more opportunities to work at home, thereby reducing Scope 3 GHG due to commuting and waste water treatment. Currently, the agency is upgrading its restrooms with water saving toilets and faucets. When completed, the estimated water savings will be in the range of 10 to 15 percent.

II. Goal Performance Review

Goal 1: Scope 1 and 2 Greenhouse Gas Reduction

Buildings:

Goal description: Reduce energy and water usage at the facility. The agency expects to reduce facility energy intensity by 6 percent in 2020. The NRC is working towards reducing energy usage through new space management policies.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation methods – NRC continues to upgrade existing equipment control systems. The agency's new energy management system continues to be installed on equipment within the building. The installation of additional variable frequency drives also continues in the TWFN building and will be completed in 2011. Also, the agency is evaluating an electrical conditioning (Electra Flow) product that will save 3.5 percent of our total electrical usage or 1,000,000 kW annually, with a ROI of 4 years. These projects together will save the agency an estimated 1,500,000 kW per year. NRC has investigated the installation of renewable energy production equipment and has found that the agencies surface area where equipment could be installed would not produce sufficient power to give a reasonable ROI, making this project not worthwhile doing with the current technology.

The NRC has reduced petroleum use in its fleet vehicles by 100% by replacing them with flex-fuel or E85 vehicles as the GSA leases expired. Of the 27 vehicles in place today, two will be eliminated in FY 2012, two in FY 2013, and three in FY 2014.

Because the NRC headquarters is currently dispersed between five different locations, shuttle services and leased government vehicles must be used to ensure staff can move between locations to accomplish the core missions of the agency. The NRC will reduce its fleet size when its new Three White Flint North building is occupied beginning FY 2012. As each of the four outlying interim buildings is decommissioned, existing shuttle services (a total of six shuttle buses) will be reduced. The shuttle services are also being reviewed to identify opportunities to reduce schedules and/or eliminate some of the services beginning in FY 2011. The NRC met with representatives of General Services Administration (GSA) and the Department of Health and Human Services early in FY 2011 to determine if there was opportunity to merge or share existing services. This effort yielded no promising results due to the challenges with headquarters staff being dispersed to locations that are not near other federal agencies.

All five vehicles leased for senior executives (the NRC Chairman and four Commissioners) were replaced in FY 2010 with low-GHG emitting vehicles. The NRC is awaiting opportunities for suitable hybrid vehicles to replace these when their leases expire.

Positions – Currently a full-time Federal employee is dedicated to managing the NRC fleet of leased vehicles and the existing shuttle services. The other duties for Scope 1 and 2 are handled as collateral duties.

Agency Status – The NRC had a 1.5 percent increase of CO2 emissions and a 2.2 percent increase of electrical usage in 2010 over our 2008 baseline report. We attribute this increase to the agency “New Flex” program which allows employees to work between the hours of 5:00 a.m. and 11:00 p.m. This program increased working hours by 50 percent over 2008. The increased working hours negated the energy savings expected by the new T5 lighting fixtures installed in the One White Flint North (OWFN) building. Also the weather played a significant factor in our increased energy use. Between 2008 and 2010, the NRC experienced a 10 percent increase in heating and cooling degree days making 2010 energy usage higher than 2008.

Currently the agency is planning to use embedded funds for the new Electra Flow System. If this system is found to meet the savings criteria and funds are verified, the system will be installed prior to the end of FY 2011.

Return on Investment – No agency projects or initiatives included in the submission of the previous year’s Sustainability Plan have been deliberately cancelled or suspended due to a lower than expected ROI. Likewise, no agency projects or initiatives have been expanded due to a higher than expected ROI.

Highlights – The agency is very happy with the results of the new building automation system installed in TWFN. The calculations for the first full 4 months are showing a 980,000 kilowatts decrease in energy usage.

GOAL 2: Scope 3 Greenhouse Gas Reduction and Develop and Maintain Agency Comprehensive Greenhouse Gas Inventory

Goal description – Reduce the agency Scope 3 GHG production by 5 percent in 2020.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation methods – Reductions of Scope 3 GHG will be a challenge to the agency. A sizable level of the NRC's mission requires our employee's to perform site inspection of nuclear power plants which requires a significant amount of air and ground travel. The NRC is looking at these requirements as well as other travel performed by the agency to evaluate which types of travel may be averted with the use of video teleconferencing and Web-based training.

Employee commuting is being addressed in two ways. Employees are encouraged to use mass transit through the agency transit subsidy program. Also, employees are given incentives to car share, van pool, or bike to work. The agency is also expanding its telework program with an increase of 5 percent between FY 2009 and FY 2010, and estimating an additional 5 percent increase in FY 2011.

NRC has implemented a hybrid approach to GHG inventory verification, consisting of the following elements:

- Inventory Management Plan (IMP) – NRC's IMP provides the corporate perspective for development and management of the GHG inventory, including procedures, roles and responsibilities.
- Data and GHG Inventory Verification – Conducted by a team of independent, PRIZIM staff with no role in the development, management or reporting of GHG inventory data. This review will confirm the efficacy of the data and will identify and correct significant discrepancies before the GHG inventory is submitted.
- PRIZIM's Verification Team was responsible for conducting the second party verification of data supporting NRC's baseline FY 2008 and FY 2010 Scope 1, 2, and 3 GHG inventories.
- PRIZIM's Verification Team walked through each line item on the Federal Energy Management Program (FEMP) GHG Tool to ensure all data entered reflects actual NRC data, using correct units, significant figures and is realistic for an operation of NRC's size.

The Federal Greenhouse Gas Accounting and Reporting Guidance details the procedures for Federal agencies to comply with Subsection 2(c), EO 13514. The NRC followed this Guidance for Scope 3 GHG emissions. The NRC uses the FEMP Energy and GHG Reporting Tool to collect and calculate the agency Scope 3 data.

Positions - Currently there is no full time person responsible for this activity. These duties are handled as collateral duties.

Planning Table

SCOPE 3 GHG TARGET	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
Total Scope 3 GHG Emissions (Comprehensive)	MMTCO 2e	23.73	23.13	22.55	21.99	21.44	20.90	...	20.45
Total Scope 3 GHG Emissions (Subject to agency Scope 3 GHG Reduction Target)	MMTCO 2e	23.73	23.13	22.55	21.99	21.44	20.90	...	33.55
Overall agency Scope 3 Reduction (reduced from FY 2008 base year)	%	+9.3	2.5	2.5	2.5	2.5	2.5	...	5

Agency Status – The NRC has experienced a 9.2 percent increase in total Scope 3 GHG production above the FY 2008 baseline. Increases in GHG were found in “air travel” currently at 19.5 percent, employee commuting currently at 5.5 percent, and waste water treatment currently at 10.2 percent. The agency did reduce Scope 3 GHG in municipal solid waste by 29.1 percent over FY 2008.

Return on Investment – No agency projects or initiatives included in the submission of the previous year’s Sustainability Plan have been deliberately cancelled or suspended due to a lower than expected ROI. Likewise, no agency projects or initiatives have been expanded due to a higher than expected ROI.

Highlights – None

GOAL 3: High-Performance Sustainable Design / Green Buildings, Regional and Local Planning

This goal does not apply to NRC.

GOAL 4: Water Use Efficiency and Management

Goal description – Reduce potable water use intensity by at least 26 percent and landscaping, water use by at least 20 percent by FY 2020.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation methods – NRC has begun renovating 53 restrooms in the OWFN building. These renovations include the replacement of all water use fixtures. This project will be completed in phases with expected completion in FY 2013 pending availability of funds. When completed, the estimated water savings will be in the range of 25 to 40 percent for this building with a savings of 15 percent overall. The agency is currently investigating a project to modernize our landscape irrigation system by relocating watering heads, and installing soil moisture and rain sensors. It is estimated that this project will reduce landscape water usage by 10 percent.

Positions – Currently there is no full time person for this activity. These duties are handled as collateral duties.

Agency Status – Currently the agency is working to install new water use conservation fixtures throughout the OWFN building.

Return on Investment – No agency projects or initiatives included in the submission of the previous year’s Sustainability Plan have been deliberately cancelled or suspended due to a lower than expected ROI. Likewise, no agency projects or initiatives have been expanded due to a higher than expected ROI.

Highlights – The NRC has reduced potable water usage from the base year by 16 percent. These savings are attributed to aggressive maintenance of our cooling towers.

Planning Table

WATER USE EFFICIENCY AND MANAGEMENT	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
Potable Water Reduction Targets (gal/SF reduced from FY 2008 base year)	%	6	8	10	12	14	16	...	26
Planned Potable Water Reduction (gal/SF reduced from FY08 base year)	%	-8.3	1.5	1.5	1.5	1.5	1.5	...	26
Industrial, Landscaping, and Agricultural Water Reduction Targets (gal reduced from FY 2010 base year)	%	0	2	4	6	8	10	...	20
Planned Industrial, Landscaping, and Agricultural Water Reduction (gal reduced from FY 2010 base year)	%	X	2	2	2	2	2	...	20

GOAL 5: Pollution Prevention and Waste Reduction

Goal description – Divert at least 50 percent non-hazardous solid waste by FY 2015, and divert at least 50 percent construction and demolition (C&D) materials and debris by FY 2015.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation methods – The NRC has an effective building recycling program in place. We collect office paper, newspapers, metal, plastic and glass. In an effort to increase our reduction of waste, the agency is starting a direct office collection program where Grade 1 paper will be picked up once every 2 weeks. Currently the agency requires all C&D waste to be recycled and the documentation to be provided to the NRC.

The NRC uses only 100 percent recycled content paper, and has a policy to print and copy on both sides of a sheet of paper when possible. All hazardous materials used by the NRC are recycled in accordance with the Federal, state, and local regulations.

Positions – Currently there is no full time person for this activity. These duties are handled as collateral duties.

Agency Status – The NRC is currently exceeding the waste reduction FY 2020 requirements.

Return on Investment – No agency projects or initiatives included in the submission of the previous year’s Sustainability Plan have been deliberately cancelled or suspended due to a lower than expected ROI. Likewise, no agency projects or initiatives have been expanded due to a higher than expected ROI.

Highlights – The NRC is currently exceeding the FY 2020 waste diversion requirements. In FY 2010 the agency diverted 62 percent of total waste from the landfill.

Planning Table

POLLUTION PREVENTION & WASTE REDUCTION	Units	FY10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
Non-Hazardous Solid Waste Diversion Targets (Non-C&D)	%	50	50	50	50	50	50	...	?
C&D Material & Debris Diversion Targets	%	75	75	75	75	75	75	...	?
If agency uses on-site or off-site waste-to-energy, estimated total weight of materials managed through waste-to-energy	Tons or pounds	0	0	0	0	0	0	...	?
Number of sites or facilities with on-site composting programs	#	0	0	0	0	0	0	...	?
Number of sites or facilities recycling through off-site composting programs	#	0	0	0	0	0	0	...	?
If agency has on-site or off-site composting programs, estimated total weight of materials diverted to composting	Tons or pounds	0	0	?	0	0	0	...	?
% of agency-operated offices/sites with a recycling program	%	100	100	100	100	100	100	...	?
If agency offices located in multi-tenant buildings, % of those buildings with a recycling program	%	100	100	100	100	100	100	...	?
% of agency-operated residential housing with recycling programs	%	N/A	N/A	N/A	N/A	N/A	N/A	...	?

GOAL 6: Sustainable Acquisition

Goal description – Ensure 95 of all new contracts, including non-exempt contract modifications, require products and services that are energy efficient, water efficient, bio-based, environmentally preferable, non-ozone depleting, contain recycled content, non-toxic or less toxic alternatives.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation methods – In the area of sustainable acquisition, the NRC will provide information to its headquarters and regional office staff to ensure compliance with the 95 percent requirement and environmental laws and regulations, including EO 13514, EO 13423, and the U.S. Department of Agriculture’s BioPreferred Program. Given that the NRC leases its workspace from GSA there are few procurement actions associated with sustainable buildings or real property.

Action Item # 1: FY 2011 Milestone – The NRC will create a new local contract clause that addresses the 95 percent green requirement to be included in all solicitations and contracts.

Action Item #2: FY 2011 and FY 2012 Milestones – By July 30, 2012, the NRC will provide or facilitate annual green purchasing training for agency acquisition professionals.

Action Item #3: FY 2011 and FY 2012 Milestones – Periodic file reviews will be conducted to encourage and compel compliance with environmental laws and regulations.

Positions – The development and implementation of this plan is supported by one employee. The actual implementation of this green requirement goal is undertaken by Contracting Officers and Contract Specialists working in collaboration with the lead in meeting requirements as established by EO 13423 and EO 13514.

Planning Table

SUSTAINABLE ACQUISITION	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
New Contract Actions Meeting Sustainable Acquisition Requirements	%	*	95	hold	hold	hold	hold
Energy Efficient Products (Energy Star, FEMP-designated, and low standby power devices)	%	*	95	95	95	95	95
Water Efficient Products	%	*	95	95	95	95	95
Biobased Products	%	*	95	95	95	95	95
Recycled Content Products	%	*	95	95	95	95	95
Environmentally Preferable Products/Services (excluding EPEAT – EPEAT is included in Goal 7)	%	*	95	95	95	95	95
SNAP/non-ozone depleting substances	%	*	95	95	95	95	95

* No data was available for FY 2010

Planning Table

SUSTAINABLE ACQUISITION CONTRACT REVIEW	1 st QTR FY 11 (10/1/10 – 12/31/10)	2 nd QTR FY 11 (1/1/11 – 3/31/11)	3 rd QTR FY 11 (Planned)	4 th QTR FY 11 (Planned)
Total Number Agency Contracts	17	20	46	30
Total Number Contracts Eligible for Review	8	6	TBD	TBD
Total Contracts Eligible Contract Reviewed (i.e., 5% or more eligible based on previous OMB guidance)*	2	2	---	---
Number of Compliant Contracts	1	1	---	---

Discuss how contracts identified in the table above were selected for review.

The agency generated reports from the Automated Acquisition Management System (AAMS) to identify contracts awarded in the first and second quarters of FY 2011 as well as reports for planned actions included in the annual procurement plan for the third and fourth quarters of FY 2011. The contracts were then reviewed by NRC staff to determine which were applicable (eligible) for green mandates (e.g., energy efficient products, water efficient products, bio-based products, recycled content products, environmentally preferable products/services, and SNAP/non-ozone depleting substances). Of the narrowed list of eligible contracts, NRC staff conducted a brief file review of two files for each quarter to assess compliance. Of the four contract files reviewed, two contracts included environmental requirements in the statements of work (SOW). While the two remaining contracts were listed as eligible contracts, the work did not seem subject to any of the green mandates.

It is hopeful that the Office of Management and Budget (OMB), in response to concerns raised by the Federal Sustainable Acquisition and Materials Management Practices Workgroup, will issue guidance (including examples) to agencies so that it is more apparent whether or not a requirement would be eligible or ineligible for consideration.

Agency Status – In FY 2010, the NRC received a block of environmental training from Ms. Dana Arnold, Director, Program Analysis Division, FAS Office of Acquisition Management, GSA. In keeping with past practice, the NRC has invited Ms. Arnold to assist NRC with its green training for FY 2011. Ms. Arnold recommended that we register NRC’s acquisition workforce and project officers to take the 1-hour GSA green purchasing on-line training entitled, “Green Purchasing for the Federal Acquisition Workforce,” to increase awareness and understanding of applicable environmental laws and regulations.

Return on Investment – None

Highlights – A contract that we would like to highlight involves construction services at the new Three White Flint North (3WFN) building in Rockville, Maryland where the use of energy efficient, bio-based, and other environmentally preferable materials is required and where conservation is a key requirement and integral to the SOW.

GOAL 7: Electronic Stewardship and Data Centers

Goal Description – All equipment in the NRC Production Data Center is used in an environmentally friendly and responsible way, both in keeping with executive orders as well as OMB Federal Data Center Consolidation Initiative guidelines. As a general rule, Data Centers consume large amounts of energy to both power the equipment as well as maintain the temperature and humidity at optimal levels. The NRC will continue to work towards improved monitoring of power consumption as well as reducing energy usage in the Data Center through both the use of more energy efficient equipment as well as using new technologies such as server virtualization.

Agency lead for goal – Kathryn O. Greene, Senior Sustainability Officer

Implementation Methods – The NRC is improving Data Center sustainability through:

1. Improvements in what equipment is being monitored;
2. Replacement of older, less energy efficient equipment with equipment which is much more efficient; and
3. The use of server virtualization technology.

Positions – Currently, the NRC has a full-time Federal employee dedicated to managing the NRC Data Center; however, power utilization is a minor component of their duties.

Agency Status – Currently, the NRC is continuing to expand the use of server virtualization. The NRC will continue to replace the oldest, least power efficient servers with servers that will be able to support the continued expansion of virtualized servers. Due to the lag between equipment purchase and the arrival at the Data Center, purchases made in FY 2011 will likely be placed into service late in FY 2011 and throughout FY 2012.

Return on Investment – No agency projects or initiatives included in the submission of the previous year's Sustainability Plan have been deliberately cancelled or suspended due to a lower than expected ROI. Likewise, no agency projects or initiatives have been expanded due to a higher than expected ROI.

Highlights – In FY 2010, NRC purchased Data Center environmental monitoring hardware and software which is now being installed in two NRC headquarters Data Centers. This will allow power and temperature monitoring at the computer rack level. In addition, as part of the planning for a new Data Center in the 3WFN building now under construction includes a more sophisticated power and environmental management system for all mechanical devices (Chiller Tower on/off status, water pressure, water temperature (inlet, outlet), CRAC's, UPS, PDU's, leak detection, smoke/fire detection) which may affect the performance of the Data Center.

Since FY 2009, the Office of Information Services has replaced approximately 25 percent of the older computer servers with Energy Star® qualified equipment. These servers are the most energy efficient servers available in the industry. Beginning in FY 2011 and forward, requisitions will also seek EPEAT and FEMP

designated electronic products for the Data Centers whenever possible. Equipment which has exceeded its useful life is returned to the NRC Warehouse for disposition.

Also in FY 2010, in keeping with greening initiatives mandated by OMB and the Whitehouse, NRC began virtualizing servers. In an effort which began when the first virtualized server was deployed in production in April 2010 through September 30, 2010, a total of 39 servers, or 15 percent of the servers had been virtualized, well on the way to meeting the target of 50 virtualized servers in 12 months. As part of that effort, NRC retired 19 power-inefficient servers.

In addition, NRC is enhancing greening initiatives by implementing the following steps:

1. Replacing old computer racks without sides or doors, with new racks with sides, and installing blanking panels to improve airflow.
2. Removing excess cabling and removing and retiring unused equipment and performing proper cable management to increase airflow.
3. Reducing foot traffic in the data center by supporting enhanced remote access capabilities in order to reduce the demand for cooling.

Planning Table

ELECTRONIC STEWARDSHIP & DATA CENTERS	Unit	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Percentage of electronic product acquisition covered by current Energy Star specifications that must be energy-star qualified	%	100	100	100	100	100	100
Percentage of covered electronic product acquisitions that are EPEAT- registered	%	85	85	85	85	85	85
Percentage of covered electronic product acquisitions that are FEMP- designated	%	20	40	60	70	75	75
Percentage of agency, eligible PC, Laptops, and Monitors with power management actively implemented and in use	%	55	65	75	80	80	80
Percentage of agency, eligible electronic printing products with duplexing features in use	%	10	75	80	85	90	95
Percentage of electronic assets covered by sound disposition practices	%	100	100	100	100	100	100
Percentage of agency data centers independently metered, advanced metered, or sub-metered to determine monthly (or more frequently) Power Utilization Effectiveness (PUE).	%	0	0	66	66	100	100
Reduction in the number of agency data centers	#	0	0	0	0	1	1
Percentage of agency data centers operating with an average CPU utilization greater than 65 percent	%	5	25	40	55	55	55
Maximum annual weighted average Power Utilization Effectiveness (PUE) for agency	#	3.0	2.9	2.5	2.5	1.8	1.6

Section 3: Agency Self-Evaluation

Does your Sustainability Plan incorporate and align sustainability goals, GHG targets and overarching objectives for sustainability with the Agency Strategic Plan?	Y
Does it provide annual targets, strategies and approaches for achieving the 2015 and 2020 goals?	Y
Is the Sustainability Plan consistent with the FY 2012 President's Budget?	Y
Does the Sustainability Plan integrate all statutory and Executive Order requirements into a single implementation framework for advancing sustainability goals along with existing mission and management goals, making the best use of existing and available resources?	Y
Does your plan include methods for obtaining data needed to measure progress, evaluate results, and improve performance?	Y

Other Key Questions for FY 2011:

1. Did your agency meet the December 30, 2010, due date and/or is it now able to demonstrate comprehensive implementation of the E.O. 13423 "Electronic Stewardship" goals?

- **Acquire at least 95 percent EPEAT-registered electronics**

All of the agency systems leased from the current NRC seat management contract are 100 percent Energy Star® compliant and meet EPEAT standards today. The NRC has GFE equipment that is not currently registered with EPEAT. Because of this aspect, the NRC is currently 85 percent compliant.

- **Enable energy star or power management features on 100 percent of eligible personal computers**

Power management functions have been enabled on the seat managed monitors; however, due to difficulty with conflicts in the NRC operating system patching process, certain power management functionality has not been implemented.

- **Extends the life and/or uses sound disposition practices for its excess or surplus electronics.**

All leased equipment is returned to the lessor when no longer needed. NRC owned equipment is placed into surplus and/or donated in accordance with GSA guidelines.

2. Is your agency tracking and monitoring all of its contract awards for inclusion of requirements for mandatory federally-designated green products in 95 percent of relevant acquisitions?

The NRC does not currently have a formal method for tracking compliance with the 95 percent green requirement. Currently, the NRC is soliciting offers for a new acquisition software system which could be used to assist in tracking such information, but implementation of a new system may not occur until 2-3 years in the future. In the interim, the NRC will conduct periodic environmental desk

reviews to monitor compliance, investigate adding data fields into NRC's acquisition system, AAMS, to track green purchases, and provide for increased green information/awareness training for NRC staff to achieve greater understanding of and compliance with the 95 percent requirement.

3. Has your agency completed energy evaluations on at least 75 percent of its facilities?

The NRC has completed energy evaluations on 100 percent of our facilities.

4. Will your agency meet the deadline of October 1, 2012 (EPACT'05 Sec 103) for metering of energy use?

The NRC has met the EPACT'05 Sec 103 for metering of energy and 100 percent of NRC managed facilities are metered.

5. If your agency reports in the FRPP, will it be able to report by December 2011, that at least 7 percent of its inventory meets the High Performance Sustainable Guiding Principles?

The NRC does not report in the Federal Real Property Report system. The NRC buildings are reported through GSA.

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