Department of Information Systems

Arkansas. A State of Technology.

Strategic Energy Plan (StEP)

For

Arkansas Department of Information Systems

0470

Fiscal Year 2013

(REVISED October 31, 2012 with FY12 status and FY13 plans)

Energy Manager

Debbie L. Martin

One Capitol Mall, Little Rock, AR 72201

Telephone: 501-682-5203

E-mail: Debbie.L.Martin@arkansas.gov

Attention DIS Staff:

Please review the Strategic Energy Plan and supporting policies for DIS.

The Department of Information Systems (DIS) is committed to serve as a leader within State government in the responsible use of technology to minimize the impact on energy and natural resources. DIS is committed to reducing energy consumption and conserving natural resources wherever and whenever possible. We also believe that the prudent management of our State's technology infrastructure will be beneficial to our agency employees and taxpayers in financial management and energy savings.

In the section below please make a brief statement describing how your job duties relate to the Strategic Energy Plan and your commitment to support this plan.

Comments:

Signature: _____Date:_____

Manager Comments:

Manager signature: _____ Date: _____

Please note the original plan was created in October 2009 for FY2010 (black for template and blue text for DIS plans). The original plan was updated in October 2010 with status updates for FY2010 and new plans for FY2011; these are shown via red text. Second year updates were made in October 2011 for FY2011 status updates and new plans for FY2012; these are shown via bold green text. The most current update is October 31, 2012 for a FY2012 status and updated plans for FY2013; these are shown in bold aqua text.

Objective:

To meet the requirements of Executive Order (EO) 09-07 issued May 28th, 2009 and Act 1494 of 2009:

"TO ENCOURAGE THE REDUCTION OF ENERGY CONSUMPTION BY STATE AGENCIES AND THE ENVIRONMENTAL IMPACT OF STATE AGENCY OPERATIONS"

EO 09-07 requires Executive Branch Agencies and other agencies to develop individual agency strategic energy plans (StEPs). Each StEP must contain detailed provisions for the collection and periodic monitoring of data on the agency's annual energy use. The data will permit the agency to evaluate where and how energy is used.

Each affected agency shall transmit a copy of its StEP to the Office of the Governor, along with a proposed timeline for implementation of each aspect of its plan, on or before October 31, 2009. The plan will be updated annually.

Section I: Energy Team Overview

A. Description of Energy Team

The Arkansas Department of Information Systems (DIS) Energy Team is comprised of 18 representatives from the following divisions and functions within the organization: Administration; Enterprise Systems; Enterprise Network; Enterprise Operations; Finance; Contracts and Procurement; Customer Relations; AWIN; Project Management; and other Stakeholders. The Energy Team was established in October of 2009 and will meet **semi-annually** to carry out the agency's Strategic Energy Plan. Action Plans will be developed for applicable strategies in order to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates. The team will also discuss energy management issues, such as organization-wide energy use reduction policies, Data Center electrical usage, maintenance issues, and capital improvement plans.

B. List of Energy Team members:

i. Debbie L. Martin – Energy Manager / Operations Center Manager
ii. Claire Bailey – StEP Executive Sponsor / Agency Director, State CTO

iii. Jeff Dean – Executive Administration representative / Chief Operating Officer
iv. Scott Utley – Senior Staff representative for the DIS Strategic Plan Strategy 1.5 "Ensure responsible disposal of waste generated at DIS" / DIS Division Administrator - Enterprise Architecture & Services
v. Brian Fortson – State Data Center representative / DIS Division Administrator – Enterprise Operations
vi. Donnie Matthews – Customer Relations / DIS Technical Accounts Specialist
vii. Rachel Reginelli – Agency communications / Public Information Coordinator
viii. Rick Martin. – Enterprise Network representative for network equipment at DIS and the University of Arkansas, U of A Fayetteville and UAPB sites / State Network Support Lead
ix. Keith Glover – IT Asset Management (ITAM) representative / ITAM Manager
x. Lou Ann Elmore – Fiscal representative / Accounting Coordinator
xi. Mike Hill - Contracts and Procurement representative / Procurement Coordinator
xii. Marecia Griffin - Contracts and Procurement representative / Contracts and Buyer
xiii. Mary McCoy – Contracts and Procurement representative / Buyer
xiv. Jim Gay – Telephone systems - Service Orders representative / DIS Account Analyst - Service Orders
xv. John Benjamin – Project Management and Leadership Team representative / DIS Project Manager
xvi. Natalie Wyrick – Administrative Assistant representative
xvii. Chris Cockrell – Enterprise Network representative
xviii. Kevin Riedinger – Enterprise Systems representative (replaced Corbin Naekel)
xix. Barbara Head – Call Center representative (replaced Timothy Bales)
xx. Dan Frith – Quality Manager (replaced Judy Hollowell)

C. Policy statement developed regarding energy use and cost reduction (Approved October 2009)

AGENCY VISION:

Per the responsibilities charged to our agency in the Governor's Executive Order 09-07 and as the principal agency responsible for information technology in Arkansas, the Department of Information Systems (DIS) is committed to serve as a leader within State government in the responsible use of technology to minimize the impact on energy and natural resources. DIS is committed to reducing energy consumption and conserving natural resources wherever and whenever possible. We also believe that the prudent management of our State's technology infrastructure will be beneficial to our agency employees and taxpayers in financial management and energy savings.

METHOD FOR ACHIEVEMENT:

DIS has established an energy team for the efficient management of energy and natural resources. The fulfillment of this policy is the joint responsibility of the DIS Energy Team, the agency director and supporting personnel. Cooperation is required on all levels within DIS for the success of this policy.

DIS maintains accurate records of energy consumption and costs on a monthly basis through the use of ENERGY STAR® PORTFOLIO MANAGER (ESPM). An energy review will be conducted annually and recommendations will be made to update the Strategic Energy Plan. Energy conservation recommendations and initiatives will be reviewed and approved by the DIS Director. Information will be furnished to the Arkansas Energy Office and the Governor's Office regarding the goals and progress of our agency's Strategic Energy Plan.

Section II: Facility/Site Description

A basic list of facilities with gross square footages is included as an appendix to this plan via the Arkansas StEP Facility Data Sheet to identify and gather the data needed to benchmark building(s) and input the data to Green.Arkansas.gov for future use by the Arkansas Energy Office in accordance with EO 09-07 and Act 1494.

Information included is as follows:

Facility Name, Address (street, city, State, zip code), County, Year Built, Property Type, Space Type - Category, Gross Square Footage, Operating Hours, Workers on Main Shift, and Number of Personal Computers.

DIS leases office space from the Arkansas Building Authority (ABA) in the Multi-Agency Complex (MAC) at One Capitol Mall. The full service lease includes utilities in the lease payment. DIS is billed monthly, above the lease amount, for the Data Center's actual electrical usage as recorded via sub-meters. ABA will report all utility information for DIS leased space. ABA provides Data Center electrical usage and cost information for monitoring and benchmarking purposes to DIS. This information will be used for Goal 1, Strategy 1.3 to identify and implement five or more initiatives to reduce power consumption in the Data Center.

DIS leases warehouse space through ABA at 2201 Brookwood. ABA manages this space for a private owner. Electric and gas utilities are not included in this lease, therefore DIS will report utility usage for this facility.

DIS also leases space from the University of Arkansas on the Fayetteville and Pine Bluff campuses. These spaces house network equipment for two "Point of Presence" sites on the State network to provide redundancy for the network. These are full service leases which include utilities; therefore energy use for these sites will not be reported.

DIS manages the Arkansas Wireless Information System (AWIN) for Arkansas State Police (ASP) owned facilities.

UPDATE October 2011: DIS will assist ASP with reporting the facility and utility information for these AWIN tower sites, if required. Per Act 1494 rules, reporting is required for "Major facility" that is defined as a construction project larger than twenty thousand (20,000) gross square feet of occupied or conditioned space. "Major facility" does not include a transmitter building or a pumping station", therefore AWIN tower sites will not be reported.

UPDATE October 2012: There are no changes in the facilities that are leased or managed by DIS. All DIS facility data is current in the ENERGY STAR® Portfolio Manager (EPSM) system and the 0470 DIS Act 1494 StEP Compliance Reporting Template – "0470 DIS_Act 1494_StEP_Compliance Report2012.xls".

Section III: Energy Plan Elements

Goal 1: Reduce the agency's annual maintenance and operating budget devoted to energy consumption (usage) in accordance with Executive Order 09-07 and Act 1494 of 2009.

As stated in Act 1494, energy use in all existing State buildings shall be reduced by twenty percent (20%) by 2014 and thirty percent (30%) reduction by 2017 based on energy consumption for the 2007 - 2008 fiscal year (FY), if the savings can be justified by a life cycle cost analysis.

Strategy 1.1: Collect annual energy usage data for facilities owned or leased by the reporting organization.

UPDATE October 2010: This effort began in September 2009 and was submitted to the ENERGY STAR® Portfolio Manager (ESPM) system by the April 1, 2010 deadline. Data is entered monthly upon receipt of utility bills and ABA reports. The data is current as of October 31, 2010.

State Data Center:

UPDATE October 2010: In 2009, the State Data Center consumed 21.45% of the total electrical usage in the MAC building. The good news is that the Data Center usage is on a downward trend. For fiscal year 2010, DIS has reduced the overall electrical usage based on kilowatt per hour (kWh) for the State Data Center by 15.71% from the FY2008 total kWh usage.

UPDATE October 2011: The State Data Center continued a downward trend in electrical usage for FY2011, with a reduction of 17.11% compared to FY2008 total kWh usage.

UPDATE October 2012: The State Data Center electrical usage increased some in FY2012, but still has an overall reduction of 13.92% compared to FY2008 total kWh usage. This equates to a 13.90% reduction in kBtu. During the calendar year of 2011, the State Data Center accounted for 20.67% of the total electrical usage in the MAC building.

DIS Warehouse:

UPDATE October 2010: The DIS Warehouse reduced its electrical and natural gas usage for FY2010 compared to FY2008, with electric consumption down by 5.47% and gas consumption down by 19.49%.

UPDATE October 2011: The average reduction in natural gas CCF consumption for FY2011 compared to FY2008 is 28.14%. No reduction was made in the electrical consumption for FY2011, it actually increased by 0.04% compared to FY2008.

UPDATE October 2012: The reduction in natural gas CCF consumption for FY2012 compared to FY2008 is 42.36%. The reduction in electrical consumption for FY2012 compared to FY2008 was 7.08%. This was an improvement due to FY2011 seeing an increase in consumption. Overall, the site's energy intensity has a 35.06% reduction in kBtu for FY2012 compared to FY2008.

Objective 1.1.1: Describe provisions for the collection and periodic monitoring of detailed data on the agency's annual energy use in State-owned or leased facilities and offices. This should include a narrative for the first reporting year of FY2009 and the benchmark year of FY2008 (starting July 1, 2007 and ending June 30, 2008).

Because DIS is housed in a multi-agency building owned by ABA, DIS is not required to collect and report energy use data. DIS will partner with ABA to reduce energy consumption for leased space at the MAC.

The electrical usage for the DIS hosted State Data Center in the MAC is measured by four sub-meters. ABA provides monthly usage readings and cost calculations to the DIS Energy Manager. This information is used for monitoring and benchmarking purposes of the Data Center's power consumption, utility rates, and cost. The data has been collected since January 2007; therefore data for the benchmark year FY2008 and the first reporting year FY2009 is available. The data is stored in an Excel workbook and has been entered in the ESPM system. The Enterprise Operations Division management and the DIS Energy Team will have access to this information which is stored in the DIS Intranet SharePoint site.

DIS has collected electrical and gas utility data for the warehouse facility. This facility was leased in August 2006; therefore data will be available for the benchmark year FY2008 and the first reporting year FY2009. The scanned invoices are stored in the Fiscal area of the DIS Intranet SharePoint site and have been entered into the ESPM account. The DIS Energy Team will have access to this information via Excel spreadsheets and charts that are stored in SharePoint.

Objective 1.1.2: Gather energy usage from utility meters

Ongoing – see statements in Objective 1.1.1

Objective 1.1.3: For data collection and future reporting purposes, complete the data collection worksheets via the Arkansas StEP Facility Data Sheet (Excel workbook) and submit to the Green.Arkansas.gov website before April 1, 2010.

Tab 1 – Energy Team, Tab 2 – Facility Information, and Tab – 3 Space Type were completed and submitted by October 31, 2009.

UPDATE October 2010: Data collection information was reported for the State Data Center and warehouse facility energy usage by the April 1, 2010 deadline and is updated monthly to the ESPM account.

UPDATE October 2011 and October 2012: Data collection was submitted to the Arkansas Energy Office via the 0470 DIS Act 1494 StEP Compliance Reporting Template.

Strategy 1.2: Collect annual energy usage data for vehicle fleet owned or leased by the reporting organization in order to improve fleet vehicle efficiency. Include annual average mileage of fleet, number of vehicles in fleet, and age of vehicles in fleet.

Objective 1.2.1: Determine annual miles per gallon of vehicle fleet currently as a benchmark.

For the current year of FY2010, the DIS vehicle fleet totals seven, averaging 18.81 annual miles per gallon. There were no hybrid vehicles in the fleet during past years, but the current fleet includes three vehicles that can use alternative fuel types. DIS is in the process of calculating the actual annual MPG information for past years for comparison.

UPDATE October 2010: the DIS vehicle fleet remains at seven with an average of 18.74 mpg for FY2010.

UPDATE October 2011: the DIS vehicle fleet remains at seven and totaled 48,918 miles from April 1, 2010 to March 31, 2011. Miles per gallon was not calculated due to any data being kept on the number of gallons purchased. Total fuel expense for this period was $7,842.65.

UPDATE October 2012: the DIS vehicle fleet remains at seven and totaled 60,804 miles from July 1, 2011 to June 30, 2012. Miles per gallon was not calculated due to no data being kept on the number of gallons purchased. Total fuel expense for this period was $9,105.39. Using the 2012 Arkansas average gasoline price of $3.35 per gallon, this will equate to approximately an average of 19.13 MPG.

Objective 1.2.2: Determine annual miles per gallon of vehicle fleet after purchasing more fuel efficient vehicle(s)

UPDATE October 2010: No new vehicles have been purchased since March 2009. (Same status as of 10/31/2011 and 10/31/2012)

Strategy 1.3: Identify and implement five (5) initiatives to reduce power consumption in the Data Center or server room by **12/31/10**.

In many organizations, Data Centers are the largest consumer of energy. According to a fact sheet on the National Data Center Energy Efficiency Information Program published by the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) on March 19, 2008 "U.S. Data Centers consume a growing portion of the U.S. energy/electricity supply due to growing demand for the services they provide. Data Centers used 61 billion kWh of electricity in 2006, representing 1.5% of all U.S. electricity consumption and double the amount consumed in 2000. Based on current trends, energy consumed by Data Centers will continue to grow by 12% per year."

The responsibility for hosting the State Data Center comes with a high priority for DIS to be a good steward of energy efficiency. Green Information Technology (IT) isn't just about energy efficiencies but also about operational efficiencies that can improve IT overall.

With recent efforts of equipment replacement, consolidation, and virtualization of systems, DIS has seen a 5.84% reduction in Data Center electrical usage as reported in FY2008. DIS will continue to manage the State Data Center for optimal energy efficiency, but in the event that new State systems are developed and hosted in the Data Center or other agencies choose to relocate systems to the Data Center, the power load may increase. DIS may not see an overall power reduction, but will work to reduce consumption per operating system, which even if the total number of servers goes up and overall usage does not decrease, DIS should be able to show power consumption per operating system going down by the requested percentages of 20% reduction by 2014 and 30% reduction by 2017.

UPDATE October 2010: For fiscal year 2010, DIS has reduced the overall electrical usage based on kilowatt per hour (kWh) for the State Data Center by 15.71% from the FY2008 total kWh usage.

UPDATE October 2011: For fiscal year 2011, DIS has reduced the overall electrical usage based on kilowatt per hour (kWh) for the State Data Center by 17.11% from the FY2008 total kWh usage.

UPDATE October 2012: The State Data Center usage increased some in FY2012, but still has a reduction of 13.92% compared to FY2008 total kWh usage.

Objective 1.3.1: Develop and document initiatives by October 31, 2009

Initiatives:

1.3.1.1: Hot aisle/cold aisle configuration – maintain existing and continue in other areas as new equipment is commissioned and old equipment is decommissioned.

1.3.1.2: Air flow management - maintain existing and continue in other areas as with the proper placement of perforated / vented floor tiles, KoldLok brush grommets, SubZero cubes and blanking panels. Blanking panels are a sure-fire energy saver that blocks hot air from moving back into the front of the server rack, It's a pretty simply concept. If you've got an unused slot in one of your server racks, hot air can sweep back through that open rack to the front of the server

rack, defeating the whole cold aisle/hot aisle airflow system that basically pushes hot air out the back of the server racks. Blanking panels simply snap onto the back of the unused rack.

1.3.1.3: Cable management –to provide improved air flow under the raised floor area of the Data Center, continue the removal of decommissioned power and data cabling, utilize cable management trays in applicable areas, utilize structured cabling, and work toward meeting design specifications outlined in the TIA-942 "Telecommunications Infrastructure Standard for Data Centers."

1.3.1.4: Server consolidation and virtualization – is doing the same work on fewer physical machines and creates all kinds of benefits in terms of reducing power and cooling, reducing the overall Data Center footprint and avoiding capital costs for new servers and new Data Center space.

DIS is in the process of a server optimization project that is composed of two efforts:

1) Optimization of existing server resources using virtualization. This project is in progress with physical hardware for the new virtual infrastructure on site and other infrastructure preparations underway (i.e. racks, electrical, storage, toolsets, etc). We expect a majority of the servers used by DIS (i.e. internal servers) to be migrated to the virtual infrastructure by the end of 2009. Other appropriate workloads should be migrated by the end of FY2010.

2) Creation of a new line of service to offer virtual hosting to our customers. This offering will take advantage of the same virtual infrastructure above, but will offer a new line of service to customers that will save the State of Arkansas a considerable amount of energy, hardware, and administration costs for those participating in the service. On average, approximately $3,000 is saved for every workload that is virtualized. Advanced availability and recovery services will be available as a part of this service for customers who have a limited tolerance for downtime.

1.3.1.5: Energy-efficient server and network equipment that meets the Environmental Protection Agency **(EPA) ENERGY STAR®** certification **and/or** Electronic Product Environmental Assessment **(EPEAT)** rating requirements shall be installed as old equipment is refreshed or for new equipment installations. This would be as applicable for network and Data Center server equipment.

Server vendors such as Dell, Fujitsu, HP and IBM are designing their products for maximum efficiency. That means everything from the chipset to fans to power supplies to airflow. Energy efficient servers should be run at a high utilization rate in order to take full advantage of the server's capabilities.

1.3.1.6: Replace aging power and environmental systems with energy efficient systems, i.e. centralized Uninterruptible Power Supply (UPS), battery string, diesel

generator, and computer room air conditioners or handlers (CRACs or CRAHs). Equipment with variable speed drives should be installed. For energy efficient cooling, the new generation of computer room air conditioning (CRAC) units addresses the big energy hog in the Data Center. These units use advanced airflow techniques and even take advantage of cool outside air in order to slash cooling costs.

UPDATE October 2012: For FY2013-2014, a major data center cooling system upgrade project is planned. See Goal 4, Strategy 4.2.3 for more details.

1.3.1.7: Power distribution – bring transformers, switchgear, backup power systems closer to the load (servers, etc. in the Data Center). Ten to 15 percent of total electrical power is lost in these systems. Efficiencies can be gained by having these systems closer to the load.

1.3.1.8: Server power management - Always-on servers isn't always a good idea. Desktop power management is a well-accepted way to save money. After all, when users aren't there, why should their PCs still be on? But the same principle also applies to the Data Center. If servers are not being used, why not put them into power-saving mode.

1.3.1.9: Storage Consolidation and Tiering - Servers aren't the only physical devices in the Data Center than can benefit from green technologies. Putting together a set of storage technologies – archiving, compression, de-duplication, snapshots, thin provisioning can significantly reduce the storage footprint in the Data Center. And that increases utilization, reduces power consumption and cuts the actual floor space required for storage.

Tiered storage is the assignment of different categories of data to different types of storage media in order to reduce total storage cost. As an example of tiered storage, tier 1 data (such as mission-critical, recently accessed, or top secret files) might be stored on expensive and high-quality media such as double-parity RAIDs (redundant arrays of independent disks). Tier 2 data (such as financial, seldom-used, or classified files) might be stored on less expensive media in conventional storage area networks (SANs). As the tier number increased, cheaper media could be used. Thus, tier 3 in a 3-tier system might contain event-driven, rarely used, or unclassified files on recordable compact discs or tapes.

Data de-duplication (often called "intelligent compression" or "single-instance storage") is a method of reducing storage needs by eliminating redundant data. Only one unique instance of the data is actually retained on storage media, such as disk or tape. Redundant data is replaced with a pointer to the unique data copy.

1.3.1.10: Infrastructure management software provides real-time monitoring for the key to an efficient Data Center. By installing multiple sensors in key locations in the Data Center, and linking those sensors back to an infrastructure management system, IT can achieve automated Data Center efficiency. That means the system can control power, cooling, security and environmental systems. It can

produce alerts and deliver reports aimed at maximizing Data Center performance.

Objective 1.3.2: Document plans to implement initiatives **by December 31, 2010**

Initiatives: – Action Plans will be developed for each of these to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

1.3.2.1: Hot aisle/cold aisle configuration

UPDATE October 2010: As equipment is decommissioned and new equipment is installed, the Enterprise Operations Data Center Facility Management staff realigns equipment rows to work toward this configuration throughout the Data Center.

1.3.2.2: Air flow management

UPDATE October 2010: Appropriate floor panels, KoldLok brush grommets, SubZero cubes and blanking panels continue to be used to maximize the most efficient air flow management possible in the Data Center.

If a new State Data Center project is not approved in FY2011, future plans are to: extend the perimeter walls and print room walls from the subfloor to the bottom of floor above to create a return air plenum and to replace the suspended ceiling tiles with Data Center grade tiles with return air vents over all hot aisles.

UPDATE October 2012: For FY2013 and FY 2014, a major data center cooling system upgrade project is planned. See Goal 4, Strategy 4.2.3 for more details.

1.3.2.3: Cable management

UPDATE October 2010: Pre-made clearly labeled power cables are being utilized on all new installations. Unused power and data cable continue to be removed from under the raised floor area.

If a new State Data Center project is not approved in FY2011, future plans are to: install structured network cabling over-head to all racks and equipment and remove all cabling (except power cables that are in use and leak detection cables) from the sub-floor area.

UPDATE October 2012: Overhead network cabling is planned for FY2013 and FY2014 in conjunction with the cooling system upgrade project.

1.3.2.4: Server consolidation and virtualization

UPDATE October 2010: DIS has completed its in-house and test systems and has started moving the line of service (production - customer systems) into our State

of Arkansas private cloud powered by the virtual infrastructure, including an initiative underway at present to consolidate over seventy machines down to just seven physical machines. Actual completion date is difficult to say, it will be an ongoing effort for some time as DIS continues to virtualize into the future.

One example of the benefits from recent consolidation and virtualization efforts resulted in the reduction of servers required to support AASIS. By using new IBM POWER7 servers the count was reduced from twelve to two.

1.3.2.5: Install energy-efficient server and network **equipment that meets** the Environmental Protection Agency **(EPA) ENERGY STAR®** certification **and/or** Electronic Product Environmental Assessment **(EPEAT)** rating requirements.

UPDATE October 2010: As new equipment is being procured it is being evaluated for energy efficiency. At the current time, no Dell servers are on the EPEAT or ENERGY STAR® rating lists. The IBM POWER7-based (mentioned above) 750 Express and Power 755 models are the first four-processor systems in the industry to qualify for ENERGY STAR® status.

1.3.2.6: Replace aging power and environmental systems with energy efficient systems

UPDATE October 2010: DIS completed the UPS upgrade project in FY2010. In November 2009, the reliability of the State Data Center was dramatically increased as a project to replace an aging Uninterruptible Power Supply (UPS) and to install a secondary UPS was completed. The new units are approximately 96% efficient, which is approximately 21% better than the previous 23 year old unit.

If a new State Data Center project is not approved in FY2011, upcoming projects that are being considered include: replace the existing 500kW generator with dual 750kW generators with paralleling gear for increased capacity and redundancy; and the replacement of aging computer room air conditioning (CRAC) / air handling (CRAH) units with new dual-cool units.

UPDATE October 2012: For FY2013 and FY2014, a major data center cooling system upgrade project is planned. See Goal 4, Strategy 4.2.3 for more details.

1.3.2.7: Power distribution

UPDATE October 2010: In conjunction with the UPS upgrade project, two Power Distribution Units (PDUs) were installed in strategic areas of the State Data Center instead of using wall mounted panels.

If a new State Data Center project is not approved in FY2011, upcoming projects include load balancing on the Blue distribution bus via the distribution of power feeds from Bus B; and the installation of a second Remote Distribution Cabinet (RDC) in the south east corner of the Data Center floor area.

UPDATE October 2011: This project was completed in FY2011.

1.3.1.8: Server power management

This is planned for implementation in conjunction with the virtualization effort.

1.3.1.9: Storage Consolidation and Tiering

During FY2010, two high end disk storage units (total 42 terabytes) replaced three older storage units. Also a new IBM XIV (Tier 1.5) storage system was installed to provide 79 terabytes of storage.

Data de-duplication currently is not implemented but is planned for FY2011 with a project to analyze three different options for de-duplication solutions and provide return on investment (ROI) cases for each by March 31, 2011.

1.3.1.10: Infrastructure management software

Upgrade existing systems for Data Center facility management in order to have a true Data Center infrastructure management (DCIM) system. A DCIM system will provide a single-pane; contextualized, real-time view of Data Center physical infrastructure to enable centralized monitoring, management and capacity planning.

UPDATE October 2011: DIS has implemented these initiatives and continues to monitor energy consumption and look for more or new ways to conserve energy in the State Data Center.

UPDATE October 2012: Efforts continue in this area.

Objective 1.3.3: Develop a means to measure power consumption relative to work output, for example with metered rack power distribution units.

UPDATE October 2010: In FY2010, DIS standardized on using American Power Conversion metered rack power distribution units (PDUs) in the equipment cabinets for metering at the server level.

Objective 1.3.4: Develop administrative policies that support green initiatives.

DIS will develop policies by FY2011 that require the purchase and installation of ENERGY STAR® and EPEAT compliant equipment **as applicable** for the Data Center equipment refresh schedule; de-commissioning of unused equipment and cabling; use of blanking panels, KoldLoks, and SubZero cubes for airflow management; and consolidation of underutilized servers. A more specific date will be determined with the development of an action plan for this objective.

UPDATE October 2010: As of 6/30/10, all procurements will consider the benefits of energy-efficient equipment. See Appendix 1 Environmentally Preferable Purchasing Guidelines for more detail. For server decommissioning and the removal of unused equipment and cabling, see Appendix 3 ESM Server Decommission.

Strategy 1.4: Identify and implement five (5) initiatives to reduce power consumption in the office and support areas by 6/30/11.

Objective 1.4.1: Develop a power consumption model for office and support area assets

Research and monitoring of areas has been completed by DIS staff. A model will be developed by FY2011. A more specific date will be determined with the development of an action plan for this objective. For more detail, see Strategies 2.6 Computer Equipment; 2.7 Paper (and Printer) usage, and 2.8 Non-Essential Electricity Usage.

UPDATE October 2010: Energy use was monitored for an employee's office / workspace area and for a common food storage / preparation area. For the office / workspace area two scenarios were studied during a normal two week period with the office being equipped with a laptop computer, one flat panel monitor, CISCO IP phone, and the occasional use of a calculator, pencil sharpener, and mobile phone chargers.

Scenario 1: Normal operation, peripheral devices **not turned off** when the computer was shut down (nights and weekends). Total kWh used = 5.06 which equates to an annual cost of $8.83.

Scenario 2: Normal operations, peripheral devices **turned off** when the computer was shut down (nights and weekends). Total kWh used = 4.26 which equates to an annual cost of $5.04.

Result / recommendation: turn off and unplug all peripheral devices when the computer is shut down, or use a device such as the Tripp-Lite Eco-Surge power strip with Master Power Save options. It will terminate power to peripheral devices that are not turned off (thus still receiving power) when the computer is shut down.

Coffee makers for the common food storage / preparation area were also monitored during normal operations for seven days (weekend included). Two scenarios with different appliances were studied.

Scenario 1: Current Newco Coffee Maker with 2 pots on warmer plates. Total kWh used = 25.20 which equates to an annual cost of $91.98.

Scenario 2: New Bloomfield air pot with 2 air pots. Total kWh used = 12.62 which equates to an annual cost of $45.99.

Result / recommendation: the air pot type coffee makers use ½ of the energy required for coffee makers with warmer plates.

Objective 1.4.2: Develop administrative policies that support green initiatives

Policies will be developed by first quarter FY2011 to support power saving features on computer and peripheral equipment, recycling, paper usage, ENERGY STAR® and EPEAT equipment, non-essential plug load, and areas addressed more specifically in the Goal 2 strategies 2.3, 2.6, 2.7, and 2.8. A more specific date will be determined with the development of an action plan for this objective.

Each employee will be expected to take ownership for the environmental impact of their own work activities and to minimize that impact whenever possible.

UPDATE October 2010: numerous polices were developed and enforced in FY2010 and the first quarter of FY2011, those being for recycling (Appendix 2), ENERGY STAR® and EPEAT equipment (Appendix 1), and non-essential plug load (Appendix 4 in conjunction with the Facilities Use Policy). Others will be developed by the end of FY2011.

As of July 13, 2010, DIS reduced the agency plug load by adhering to the revised Facilities Use Policy and the removal of non-essential personal appliances. Approximately 100 personal appliances have been removed and eight common food preparation / storage have been designated for staff use. DIS has procured several ENERGY STAR® or more efficient appliances in the common food preparation / storage areas (as need warrants).

On July 16, 2010, DIS accepted the ENERGY STAR Challenge and was accepted into the Environmental Protection Agency (EPA) ENERGY STAR Partner Program. **DIS is the first Arkansas state government agency to make this list!**
http://www.energystar.gov/index.cfm?fuseaction=ESTAR_PARTNER_LIST.

UPDATE October 2011: DIS has implemented these initiatives and continues to monitor energy consumption and look for more or new ways to conserve energy in the office and support areas.

UPDATE October 2012: Efforts continue in this area. DIS still remains as the only Arkansas State Government entity to belong to the ENERGY STAR Partner program.

Goal 2: Promote agency operations and practices that will reduce, to the extent practicable, the environmental impact of the agency's overall operation

Strategy 2.1: Materials, Products and Services – develop new or revise existing standards and criteria for purchasing materials, products or services by 10/31/2009 which:

See Appendix 1 for the DIS Environmentally Preferable Purchasing Guidelines which address these objectives.

Objective 2.1.1: Align with the Environmental Protection Agency's ENERGY STAR® Qualified Products program

Objective 2.1.2: Consider the availability of bio-based products, as required by Act 542 of 2005

Objective 2.1.3: Express a preference for the purchase of products that are made from, and/or packaged with, recycled materials, and products that are, themselves recyclable in whole or in part

Strategy 2.2: Fuel-efficient Fleet - establish criteria for a more fuel-efficient fleet that will result in a more fuel-efficient agency and State-vehicle fleet

Objective 2.2.1: When replacing vehicles, consider fuel efficiency for the vehicles' intended use and return on investment (ROI) of flex-fueled vehicles

DIS will follow the Office of State Procurement (OSP) guidelines when replacing vehicles. According to section 22-8-206, all vehicles will be ordered by the Department of Finance and Administration (DFA) for all agencies classified as a Service Bureau Agency. After researching the vehicle contract on the OSP website and determining the type of vehicle needed, the agency will fill out a SAVA form through the Office of Information Services (OIS) web site. If the request is approved, the OIS will notify the agency. The agency will then provide necessary fund information including assets, to OIS, which will then prepare the requisition to order the vehicle. State procurement will only manage the order if it is over 1-ton, or if it is not on the existing contract, and only after receiving approval from the OIS.

UPDATE October 2010: No new vehicles have been purchased since March 2009.

Objective 2.2.2: Utilize electric vehicles for maintenance and operational needs

Action Plans will be developed for each of these (Objective 2.2.2 – 2.2.4) to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

UPDATE October 2010: Electric vehicles (forklift and pallet jack) are used in the warehouse and data center facilities.

Objective 2.2.3: Encourage walking and bicycle use via enhanced sidewalks, bike routes, and other pathways.

UPDATE October 2010: DIS must study this objective further. Many employees live a considerable distance from the workplaces. Also, the agency must consider the safety and liability issues of encouraging employees to walk or use bicycles for commuting to and from their offices. A small percentage of our employees do currently commute by public transit.

Objective 2.2.4: Choose a vehicle that fits the job

Objective 2.2.4: Combine trips when possible

Objective 2.2.4: Ride share

Objective 2.2.4: Reduce idling of vehicle.

Don't allow vehicles to idle on DIS property or while onsite at customer locations. Three percent of our nation's fuel is wasted by idling. Ten seconds of idling uses more fuel than restarting the vehicle. Idling also impacts air emissions. An idling engine produces more emissions because the vehicle is not running at an optimum level of performance. A policy patterned after ADEQ's will be developed by first quarter FY2011. A more specific date will be determined with the development of an action plan for this objective.

Strategy 2.3: Recycling Program – establish or revitalize recycling programs for paper and plastic waste, and participate in any statewide equipment recycling program that may be established for equipment that can be utilized by other State agencies

Objective 2.3.1: Implement a recycling program for paper, plastic, glass, cardboard, aluminum, and decommissioned IT hardware plus cabling (data and power) by 6/30/10

DIS implemented a recycling program for paper during FY2006 for Data Center print waste and confidential papers. This policy was updated to include all paper in FY2008. The policy is published at: http://home.dis.arkansas.gov/PROCESS_DOCUMENTATION/Process_Documents/Forms/AllItems.aspx. Select - Operations and the Shredding and Recycling Procedure. See Appendix 2 for the policy.

DIS has an established Recycling Committee. The members of this team include Johnny Young, Natalie Wyrick, Kenitra Woolfolk, Rick George, Keith Glover, and Kevin Morse, Coordinator. Scott Utley serves as the sponsor.

DIS also has a policy in place that addresses the decommissioning of IT hardware (servers, PCs, etc.) and cabling and preparing items for recycling via the Arkansas Marketing and Redistribution service. The policy is published at: http://home.dis.arkansas.gov/PROCESS_DOCUMENTATION/Process_Documents/Forms/AllItems.aspx. Select "Systems Management" and the ESM – Server Decommission document. See Appendix 3 for the policy.

Action Plans will be developed for other recycling policies to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

Policies and procedures will be posted on the DIS Intranet under Process Documentation. Announcements of these will be posted on DIS LiveWire, the agency electronic bulletin board, in DIS HotWire, the agency employee newsletter, and made during DIS manager meetings and employee forums.

UPDATE October 2010: DIS led the initiative for a coordinated effort to provide centralized recycling services in the State Capitol Complex for aluminum cans and plastic beverage bottles beginning in June 2010.

Also, improvements were made to DIS's paper and cardboard recycling process. See Appendix 2 for updated policies for shredding and the recycling of paper, plastic and aluminum. These policies are published at: http://home.dis.arkansas.gov/process_documentation/Process_Documents/Forms/AllItems.aspx. Select "Operations" and the Recycling Aluminum and Plastic Standard and Procedure and Recycling and Shredding Paper Procedure

UPDATE October 2011: DIS has joined efforts with neighboring Dept. of Workforce services for paper and cardboard recycling. Also, added this year was recycling for rechargeable batteries.

UPDATE October 2012: Efforts continue in this area.

Objective 2.3.2: Participate in any State-wide contracts for recycling of toner, electronics, and the above mentioned items.

DIS participates in the State Paper Recycling Program.

UPDATE October 2010: Electronics are sent to the DF&A / OSP Marketing and Redistribution center. Employees were encouraged to recycle home electronics via the Great Arkansas Cleanup event for E-Waste Collection on October 19-20, 2010.

Opportunities for toner recycling and the toner cartridge rebate that DFA has implemented this year are being explored.

UPDATE October 2011: Toner cartridges are being recycled via return to the supplier. DIS Staff has received training / direction on the proper handling and return of used toner cartridges for recycling purposes.

Strategy 2.4: Lighting Systems - establish and implement policies and practices that will reduce energy consumption attributable to lighting systems, including, but not limited to the following:

DIS will follow guidelines and initiatives from ABA regarding lighting systems.

Objective 2.4.1: Policies that ensure lighting systems are turned off during non-operating hours

Objective 2.4.2: Convert to more energy-efficient lighting systems and bulbs via compact fluorescent lamps (CFLs) etc.

ABA is working to replace ballasts and lamps in all T-12 fixtures with more energy-efficient lighting by installing electronic ballasts and T-8 bulbs in the buildings the agency maintains. See also the ABA Minimum Standards and Criteria Sections 2-802 and 803. http://www.arkansasbuildingauthority.com/about/manual.html

UPDATE October 2010: DIS staff cooperated with ABA during the replacement of T-12 lighting in #1 Capitol Mall. Approximately 1500 fluorescent lighting fixtures utilizing T-12 lamps and magnetic ballast were retro-fitted with new high efficiency T-8 lamps and electronic ballast. Many of these fixtures have had two of the existing four lamps removed due to the high lumen output of the new bulbs further reducing energy consumption by the lighting system.

DIS is in the process of completing an inventory of desk / workstation area lighting and will replace as necessary with CFLs.

Objective 2.4.3: Use of occupancy light sensors to prevent energy waste in unoccupied areas and/or buildings, along with copy rooms, conference rooms, etc.

DIS will support ABA if this is named as an objective, especially for the staff and office space. If ABA deems the installation of zone controlled light sensors in the Data Center area as necessary, DIS will support this objective. DIS will work with ABA according to the needs of staff working around the clock in the Data Center.

UPDATE October 2010: If a new State Data Center project is not approved in FY2011, DIS plans to replace the current light fixtures in the current Data Center with motion controlled light fixtures to allow energy savings on lighting in the Data Center.

UPDATE October 2012: this project is on hold and tentative until the data center cooling project is completed.

Objective 2.4.4: Maximize use of natural lighting whenever possible and consistent with temperature control

In recent years, DIS has remodeled much of its office space into open areas filled with cubicles. To the best extent possible, cubicle areas are arranged to benefit from natural lighting.

Objective 2.4.5: Remove and reduce other non-essential lighting such as decorative office lamps.

UPDATE October 2010: This was enforced via the non-essential plug load policy (Appendix 4 in conjunction with the Facilities Use Policy).

Objective 2.4.6: Install light emitting diode (LED) exit signs

Strategy 2.5: Heating, Ventilation, and Air Conditioning Systems - establish measures to ensure that Heating, Ventilation, and Air Conditioning (HVAC) systems operate at reduced levels during non-operating hours

DIS will follow guidelines and support initiatives from ABA regarding HVAC systems.

Objective 2.5.1: Implement schedules to control HVAC systems

Objective 2.5.2: Set/adjust timers for air conditioning, etc.

Objective 2.5.3: Install or expand energy management / building automation systems

Strategy 2.6: Computer Equipment – establish policies and practices designed to ensure that all electrically-powered equipment, including computer equipment, is turned off when not in use, and that personal computers are configured with default settings that ensure that computers go into "sleep mode" after 30 minutes or less of non-use

Objective 2.6.1: Purchase ENERGY STAR® / EPEAT certified computers, printers, copiers, etc.

Effective July 9, 2009, EPA has strengthened the requirements for earning the ENERGY STAR® in Version 5.0. For Desktop/integrated desktop and notebook computers, products must meet stringent TEC requirements for estimated energy consumption.

DIS plans to purchase and install equipment that meets the ENERGY STAR® certification and/or EPEAT rating requirements as it is refreshed or for new installations as applicable.

EPEAT is a system that helps purchasers evaluate, compare, and select electronic products based on environmental attributes. The system currently covers desktop and laptop computers, thin clients, workstations, and computer monitors. Desktops, laptops, and monitors that meet 23 required environmental performance criteria may be registered in EPEAT by manufacturers in 40 countries worldwide. Registered products are rated Gold, Silver, or Bronze depending on the percentage of 28 optional criteria they meet above the baseline criteria. EPEAT operates an ongoing verification program to assure the credibility of the registry.

Per the DIS October 21, 2009 equipment inventory, DIS has EPEAT rated equipment at the following levels: 0% Bronze, 0% Silver, and 15.7% Gold. This 15.7% Gold represents 49 of 293 computers, which are primarily Dell laptop / notebook computers. By FY2011, the DIS' goal upon equipment refresh is to reach the level of: 25% Silver, and 50% Gold for all desktop and laptop / notebook computers. A more specific date and target percentages will be determined with the development of an action plan for this objective.

UPDATE October 2010: Per the DIS September, 2010 equipment inventory, DIS has increased its number of EPEAT rated equipment to 35.3% which is near a 20% increase over the previous reporting period. Of this 35.3%, 34.14% is a Gold rating which represents 85 of 249 computers, which are primarily Dell laptop / notebook computers. Three other laptop computers are rated Silver.

DIS' goal upon equipment refresh of computers is to reach the level of 40% for FY2011 and increase by 10% each year in order to meet 100% at the end FY2017.

In regard to display devices, DIS has approximately 99% that are flat panels and utilize power saving features. As display and imaging devices are refreshed, DIS's goal is to have 100% at ENERGY STAR® and/or EPEAT rated devices at the end FY2017.

UPDATE October 2011: Per the DIS November 2011 equipment inventory, 26% of DIS's servers, workstations, and notebook computers are EPEAT Gold rated (83 of 319 devices). Flat panel monitors with power saving features continue to be utilized.

UPDATE October 2012: The current inventory has 23 % of the above mentioned equipment rated as EPEAT Gold (51 of 226 devices).

Objective 2.6.2: Set timers for computers to go into sleep mode after 30 minutes or less of non-use
A policy and action plan will be developed for this objective to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

On currently installed laptop computers running the Windows XP install image for laptops, some power management functions have been implemented, but not enforced. Users with administrative rights to their laptop have the ability to change those features.
DIS' plan is to enable group policy options to take advantage of power saving features in Windows 7. While DIS is not planning a mass rollout of Windows 7, the roll out will begin as desktops and laptops are refreshed beginning in 2010. A date and number of minutes for sleep mode to be enabled will be determined with the development of an action plan for this objective.

UPDATE October 2010: The DIS Enterprise Systems Management division is currently involved in testing the power management features and applications interactions of Windows 7. A policy will be drafted to outline the computer power management group policy for Windows 7 users. The sleep mode setting will be set for a 2 hour period of inactivity.

UPDATE October 2011: DIS is in the process of upgrading employee's workstations and notebook computers to Windows 7 in order to utilize more power management features.

UPDATE October 2012: Efforts continue in this area.

Objective 2.6.3: Implement virtual server technology or other innovative energy savings computer management actions

See Objective 1.3.1.4 and 1.3.2.4 for servers.

UPDATE October 2010: Virtual desktops for staff use will be piloted in FY2012. The ROI is not as great as in the server world due to storage having to be on the SAN (more expensive and network intensive). DIS expects to have a line of service offering for customers in the future.

Strategy 2.7: Paper Usage – establish policies and practices designed to reduce the use of paper, including but not limited to:

Action plans will be developed or expanded, since some already exist for several of these objectives and key indicators, to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.7.1: Reduce internal paper consumption by 25% by 07/01/11

Key Indicators

2.7.1a: Determine baseline paper usage by 12/31/09 – retroactive baseline from FY2009 (June 1, 2008 – June 30, 2009)

UPDATE October 2010:

The FY2008 data is incomplete; therefore the FY2009 data will be used for the benchmark year. DIS reduced internal paper consumption by 22.66% for FY 2010 compared to FY 2009.

UPDATE October 2011: Reduced internal paper consumption by 10.55% for FY 2011 compared to FY 2009. Did not meet goal.

UPDATE October 2012: Better year - reduced internal paper consumption by 20.96% for FY 2012 compared to FY 2009.

Fiscal Year (July - June)	Total sheets		
FY2008	476500	Benchmark year per Executive Order 09-07	
FY2009	**677500**	***Benchmark year per DIS data***	
FY2010	524000	77.34%	22.66% decrease
FY2011	606,000	89.45%	10.55% decrease
FY2012	*535,500*	*79.04*	*20.96% decrease*

2.7.1b: Set paper output standards by 3/31/2011

DIS currently has default printing options set to duplex queues and will work to eliminate non-duplex printers.

UPDATE October 2010: The current inventory of printers is being compared with existing print queues. Printers located in the common area are configured for duplex print, but users can override the settings.

By March 31, 2011 The Windows Support team will inventory the users' print settings via System Center Configuration Manager (SCCM). SCCM is a systems management software product by Microsoft for managing large groups of Windows-based computer systems. Global policies will be used to push out print setting to all users in order for the default to be set at duplex print.

UPDATE October 2011: SCCM could not be used for setting all users to default to a duplex print queue. DIS Staff have been instructed to change their individual print settings to default to a duplex print queue.

2.7.1c: Implement paperless detailed billing delivery by 07/01/11

The DIS billing system has this capability, but more customers need to take advantage of the service. DIS plans to convert to all paperless billing by first quarter FY2011. Customers who desire printed billing will incur a fee for this service. A target date will be determined later via the development of an action plan for this objective.

UPDATE October 2010: The DIS Agency Strategic Plan for Fiscal Year 2011 – 2013 includes Objective 2.1.2 to reduce the total amount of paper used in billing by 50% by June 30, 2011.

2.7.1d: Implement electronic administration forms by 07/01/11

For this objective and key indicator, the action plan that will be developed will focus on Human Resources forms, travel forms, and time sheets. DIS administration understands that clearance from Legislative Audit is required for automated forms that do not require a signature. Getting this approval will be the first item in the action plan.

UPDATE October 2010: DIS is working with the State Chief Security Officer and the Electronic Signature Working Group to adopt solutions for electronic signatures that will be suitable for use with DIS internal forms for Human Resources, travel, and time sheets.

Objective 2.7.2: Phase-out the use of personal on-desk printers

DIS will develop a policy by fourth quarter FY2011. At the current time, there is no documented policy, only an unwritten practice to not replace printers as the device reaches the end of useful life unless there are special circumstances. A date will be determined with the development of an action plan for this objective.

UPDATE October 2010: DIS is researching the use of multifunction (print/copy/scan) printers that are networked and have an authenticated print release feature which allows common multifunction devices and secured printing therefore reducing the number of personal printers. Other agencies such as the Department of Corrections and the Department of Finance and Administration have implemented a solution from Lexmark.

UPDATE October 2011: Several multifunction printers were tested and procured.

UPDATE October 2012: Lexmark multifunction printers are being deployed across the agency as older ones are removed from service.

Objective 2.7.3: Establish multi-user print stations that include printers, copiers, and scanners

DIS has approximately 25 multi-user print stations established. A target date and number will be determined with the development of an action plan for this objective.

UPDATE October 2010: See notation in 2.7.1b **and 2.7.2.**

Objective 2.7.4: Implement duplexer add-ons to printers which will automatically print dual-side prints of multi-page documents

DIS uses default print queues that are set to duplex for dual-side print of multi-page documents and will work to eliminate non-duplex printers.

UPDATE October 2010: See notation in 2.7.1b **and 2.7.2.** In FY2011 **and FY2012**, due to the current age of some printers, replacements will be procured with the capability for duplex print.

Objective 2.7.5: Encourage users to use the setting of typeface fonts and default page margins in word-processed or other agency-printed documents, so as to maximize paper and toner use

Key Indicators:

2.7.5.1: Update online templates to utilize margin and fonts

2.7.5.2: Use toner saving fonts, such as the Ecofont. This is using the Spranq eco sans 10 font which uses up to 20% less ink/toner.
http://www.ecofont.eu/ecofont_en.html\

2.7.5.3 In Microsoft applications, set the default font to use Microsoft Century Gothic font which per a March 2010 report from the University of Wisconsin will save 30% in ink cost over the Arial font.
http://www.dailyfinance.com/story/university-thinks-the-right-font-could-help-save-the-earth/19415212/

UPDATE October 2010: All DIS process documentation, including templates plus templates for meeting agenda/minutes have been changed to the Microsoft Century Gothic font. Approximately 10% of DIS staff has selected this font as their default font in Microsoft Outlook and Word applications.

The Windows Support team will investigate the use of the Group Policy Object (GPO) for setting all Microsoft applications to default to the Century Gothic 10pt font. If possible, this will be pushed out to all users by March 31, 2011.

Objective 2.7.6: Encourage and require, where appropriate, the use of electronic, "paperless" communication between agency employees, in lieu of printed materials.

UPDATE October 2010: The DIS Agency Strategic Plan for Fiscal Year 2011 – 2013 includes Strategy 2.2 to improve communications with DIS Customers and Stakeholders. Objective 2.2.1 is to create a customer portal/dashboard by 06/30/2011. Objective 2.2.4 is to enhance internal communication by creating an internal marketing campaign to encourage internal communications and utilization of new technology via SharePoint and Unified Communications by 03/01/11.

Strategy 2.8: Reducing Non-essential Electricity Usage - establish agency-wide policies designed to reduce "plug load" attributable to the use of non-essential appliances, such as personal coffee makers, toasters, space heaters, refrigerators, microwave ovens, fans, televisions, radios, etc.

DIS developed a policy to address this strategy in the second quarter FY2010 and will support ABA's current building rules. See Appendix 4 "Plug-Load Policy" and the updated "Facilities Use Policy " policy that was updated and officially published in fourth quarter FY2010.

A November 2009 inventory of DIS leased space identified the use of 32 small to medium size personal refrigerators in addition to six large ones in the common areas; 20 personal microwaves in addition to six in common areas; 39 personal coffee makers in addition to three large ones in common areas; and numerous other personal items such as toasters, fans, air purifiers, radios, heating pads, electronic picture frames, candle warmers, foot massagers, shredders, decorative lamps, and holiday decorations.

DIS will also support ABA with findings by the Arkansas Insurance Department Risk Management report. Per ABA, current findings applicable to DIS are: remove objects blocking access or sight lines to fire extinguisher and eliminate the use of all light-weight extension cords.

Action plans will be developed for these objectives to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.8.1: Develop standards for personal appliances

DIS has drafted a policy as per ADEQ's plug load policy. See Appendix 4 for the adopted Plug Load policy. This policy is also incorporated into the DIS Process Documentation for "Facilities Use".

Each employee is expected to take ownership for the environmental impact of their own work activities to minimize the impact whenever possible.

UPDATE October 2010: The non-essential plug load (Appendix 4 in conjunction with the Facilities Use Policy) was drafted and placed into effect on June 30, 2010. Periodic inspections will be conducted by the Energy Manager and area managers.

As of July 13, 2010, DIS reduced the agency plug load by adhering to the revised Facilities Use Policy and the removal of non-essential personal appliances. Approximately 100 personal appliances have been removed and eight common food preparation / storage areas have been designated for staff use. DIS has procured several ENERGY STAR® or more efficient appliances in the common food preparation / storage areas (as need warrants).

UPDATE October 2011: Continued monitoring of employees adherence to the revised Facilities Use Policy and the removal of non-essential personal appliances.

UPDATE October 2012: Efforts continue in this area.

Objective 2.8.2: Communicate standards through newsletters, employee forums, and broadcast media

The DIS Public Information Coordinator and Change Leader Team will assist with publicizing information via manager meetings and employee forums, DIS LiveWire, DIS HotWire, and training videos.

UPDATE October 2010: On-going process via the above communication means.

UPDATE October 2011: "Green Tips" are shared monthly via the DIS Galaxy DISPatch Employee Newsletter.

UPDATE October 2012: Efforts continue in this with "Green Tips" being published periodically instead of monthly.

Strategy 2.9: Training / Culture of energy awareness – establish a training program for agency employees and building Energy Managers in order to ensure better understanding and support of Green Initiatives by12/31/10

Action plans will be developed for these objectives to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.9.1: Establish a training program in the implementation of low- and no-cost operation and maintenance conservation measures

UPDATE October 2010: Behavioral change is as much a part of energy savings as technical fixes, especially when it comes to information and communication technology assets operated by individual users. Sessions have been provided at Manger meetings (June 8, 2010) and Employee Forums. A Lunch and Learn "brown bag" session will be held for DIS staff and customers on November 4, 2010 to provide education regarding energy use during a typical work day. The session is titled "Bring Your Green to Work".

On May 21, 2010, the DIS Energy Manager gave a "GREEN IT Initiatives" presentation at the Arkansas Users of Telecommunications & Information Systems (AUTIS) conference.

UPDATE October 2012: Training to DIS staff was provided at DIS Employee Forum and Manager Meetings.

Objective 2.9.2: Establish a training program for the designated agency supervisory personnel, who will be responsible for monitoring and enforcing energy-efficiency measures within the agency

UPDATE October 2010: The DIS Energy Manager completed two energy management training sessions during FY2010, those being:

March 31, 2010 – Electricity and Greenhouse Gas Reduction Workshop

May 10-14, 2010 – Comprehensive Five-day Training Program for Energy Managers and Certified Energy Manager exam

The Arkansas Energy Office plans to offer training to agency energy managers during 2011.

UPDATE October 2011: For DIS Energy Manager: plans in place to complete energy management training sessions during Fall 2011 to Spring 2012, those being:

- **September 2011 – Comprehensive Energy Manager Training for State Government (4 days)**
- **September – December 2011 - Advanced Facilities Management via the Marist College Institute of Data Center Professionals (IDCP) program.**
- **March 2012 – Comprehensive Five-day Training Program for Energy Managers and Certified Energy Manager Exam**

UPDATE October 2012: *The DIS Manager did not attend the March 2012 training due to travel and training budget limitations.*

Objective 2.9.3: Create an Energy Team comprised of representatives from throughout the organization

Completed and described in Section I. A and B

Objective 2.9.4: Create an energy policy to be accepted agency-wide

Completed and described in Section I. C

Objective 2.9.5: Hold regular meetings of the Energy Team to discuss agency-wide integration of energy, financial, and strategic goals

UPDATE October 2010: Team or work group meetings were held on 11/23/09, 12/17/09, 4/21/10, 4/29/10, 5/ 9/2/10, 6/23/10, 7/9/10, and 10/29/10. In addition, interviews were conducted with team members or subject matter experts as needed.

Objective 2.9.6: Hold an informational seminar on energy efficiency (e.g., a "lunch & learn")

UPDATE October 2010: A Lunch and Learn "brown bag" session will be held for DIS staff and customers on November 4, 2010 to provide education regarding energy use during a typical work day. The session is titled "Bring Your Green to Work".

UPDATE October 2011: see 2.9.1

UPDATE October 2012: None of these sessions were held.

Objective 2.9.7: Send out regular email alerts on energy efficiency measures

UPDATE October 2010: Energy savings tips and reminders were posted on the DIS LiveWire and sent out via "DIS All" email messages throughout the year. Most recent were for the October 2010 Energy Awareness Month and the Great Arkansas Cleanup event for E-Waste Collection on October 19-20, 2010.

UPDATE October 2011 and 2012: see 2.8.2

Objective 2.9.8: Set lights out and computer shut-down policies for end of day

DIS will follow guidelines and support initiative from ABA regarding lights out settings. Policies to be developed in Strategies 1.4, 2.6, and 2.8 will include computer shut-down policies, desk lighting light out policy, etc.

Objective 2.9.9 Discourage excess driving, encourage carpooling, not driving to lunch, etc.

Strategy 2.10: Central Plant – evaluate central plant for energy conservation opportunities

DIS will follow guidelines and support initiatives from ABA regarding the central plant.

UPDATE October 2010: DIS supported ABA's project for the replacement of central cooling chillers, towers and pumps at #1 Capitol Mall.

Objective 2.10.1: Complete engineering study for recommendations

Objective 2.10.2: Install air and water side economizers

Objective 2.10.3: Install Variable Frequency Drives (VFD) on pumps

Objective 2.10.4: Install thermal energy storage

Objective 2.10.5: Replace antiquated chiller plant with high efficiency centrifugal model

Objective 2.10.6: Replace single boiler with modular boiler in series

UPDATE October 2012: DIS supported ABA's project for the replacement and maintenance of central chillers and pumps in #1 Capitol Mall. For FY2013 and FY 2014 a data center cooling system upgrade project is planned that will also provide energy savings to the house chiller plant.

Strategy 2.11: Hot Water System(s) – Evaluate domestic hot water systems for energy conservation measures

DIS will follow guidelines and support initiatives from ABA regarding hot water systems.

UPDATE October 2010: DIS supported ABA's project for the replacement of central heating boilers and pumps in #1 Capitol Mall.

Objective 2.11.1: Install timers or integrate with energy management systems

Objective 2.11.2: Insulate tanks

Objective 2.11.3: Install instantaneous water heaters where appropriate

Strategy 2.12: Building Envelope – Evaluate building envelope(s) for energy conservation measures

DIS will follow guidelines and support initiatives from ABA regarding building envelopes.

Objective 2.12.1: Install insulation where needed

Objective 2.12.2: Install storm windows and doors

Strategy 2.13: Water Conservation

DIS will follow guidelines and support initiatives from ABA regarding water conservation.

Objective 2.13.1: Baseline water usage

Objective 2.13.2: Identify water conservation opportunities

Objective 2.13.3: Assess and prioritize opportunities

Objective 2.13.4: Implementation strategies

Objective 2.13.4: Repair leaky faucets

Goal 3: Integrate energy use considerations into maintenance plans

DIS will follow guidelines and support initiatives from ABA regarding energy use in maintenance plans.

Strategy 3.1: Enhance preventative and routine maintenance procedures to maximize energy efficiency

Objective 3.1.1: Perform filter changes for HVAC systems at regular intervals

Objective 3.1.2: Perform regular inspections for pneumatic leaks

Objective 3.1.3: Recommission high energy use equipment

Strategy 3.2: Integrate energy considerations into cleaning / janitorial activities

Objective 3.2.1: Evaluate need for / frequency of various cleaning activities

Objective 3.2.2: Utilize cleaning products that reduce energy and water consumption

Objective 3.2.3: Schedule custodial functions closer to operational hours

Strategy 3.3: Evaluate high efficiency replacements of all equipment

Objective 3.3.1: Replace all failed motors with premium efficiency ones

Objective 3.3.2: Replace all failing appliances with ENERGY STAR® as minimum standard

Goal 4: Integrate energy use considerations into capital improvement plans

DIS will follow guidelines and support initiatives from ABA regarding capital improvement plans.

Should DIS enter into a capital improvement plan, i.e. a new State Data Center, the design will comply with Act 1494.

UPDATE October 2011: DIS continues to work with various agencies and the Governor's Office to secure approval and funding to build a new State Data Center. If a new State Data Center project is not approved in FY2012, DIS will have several capital improvement projects in order to provide critical upgrades to support the current State Data Center housed at #1 Capitol Mall (MAC building).

UPDATE October 2012: DIS has requested approval and funding for a capital improvement project to upgrade the data center cooling system (primary and redundant) at MAC via the ABA Sustainable Building Revolving Loan Fund. The funding approval and award is expected by the end of January 2014. See details below.

Strategy 4.1: Incorporate energy efficiency considerations into procurement of equipment

Objective 4.1.1: Change from lowest-bid approach to life-cycle cost approach when purchasing equipment

Strategy 4.2: Incorporate energy efficiency considerations into new construction or renovation projects

Objective 4.2.1: Build to high efficiency standards as per legislation, Act 1494

Objective 4.2.2: Provide details on all new construction projects that will be started in the next year and note if life-cycle cost analysis was used to reduce water, energy, and other utilities, in compliance with Act 1494

Objective 4.2.3: Provide details on all major renovation projects that will be started in the next year and plans to comply with Act 1494.

UPDATE October 2012: For FY2013-FY2014, the data center cooling system upgrade project will include:

- **Replace the oldest 80 TON redundant cooling system chiller with at minimum rating of 75 TONS at 105 deg. ambient.**
- **Replace existing chilled water piping from the existing chiller plant to the DIS heat exchangers. The new DIS service would be fed directly from the main building chilled water headers. The new service would feed the Phone Room, Battery Room, and Uninterruptible Power Supply (UPS) Room. This will eliminate the need to run the redundant emergency pumps constantly. This will also reduce the amount of piping and the number of pumps.**
- **The cooling system piping main that serves the DIS heat exchange equipment needs to be increased from 4" to 6".**
- **Connect the redundant emergency chillers and pumps in series with the building chilled water plant to greatly simplify the emergency changeover sequence. Simplified changeover valving would be located in the existing chiller plant, readily accessible.**
- **De-commission the existing redundant emergency control system and upgrade the existing chiller plant building automation control system (BAS) to include the DIS service. Provide adequate temperature, pressure, and flow control and monitoring through the upgraded BAS.**
- **Provide DIS employees with adequate system monitoring capabilities at the DIS Data Center.**
- **Provide new copper piping mains to serve the data center. Provide new redundant path, valved, piping mains and branches to serve the replacement computer room air conditioner (CRAC) units and future high density heat exchange equipment.**

- **Replace existing CRAC units.**
- **Provide back-up cooling capability for the Phone Room and Battery Room.**
- **Replace the current raised access floor (RAF) with a uniformly sized and sealed raised access floor to better manage cold air flow and reduce leakage.**
- **Remove unused cabling under the current RAF along and install an overhead cable management system.**
- **Via a separate project, install digital sub-meters at electrical utility inputs to transfer switches which support the state data center electrical load. This will provide more knowledge and better management of all electrical usage of the IT load and supporting cooling systems.**

Objective 4.2.4: Provide details on all planned purchases of constructed or renovated buildings in the next year and plan to comply with Act 1494.

Objective 4.2.5: Provide details on agency's use of life-cycle cost analysis in projects implemented or planned to reduce water, energy, and other utilities.

UPDATE October 2012: A life cycle-cycle cost analysis is being done and will be provided to ABA for the FY2013 data center cooling system upgrade project. That project will reduce energy and possibly water usage.

Strategy 4.3: Water systems in new construction projects shall be designed and constructed to use at least 20% less potable water as per Act 1494.

Goal 5: Promote StEP timeline

Strategy 5.1: Develop a timeline for implementation of the StEP that is within a realistic time frame

Objective 5.1.1: A Work Breakdown Structure (WBS) developed via Microsoft Project is attached as appendix 5 of this plan. DIS will meet the required reporting requirements by October 31, 2009 and April 1, 2010. Energy use data for the Data Center and warehouse facilities will be maintained and reported as required each year through FY 2017. As action plans are developed, the WBS will be updated.

UPDATE: The WBS has been revised due to projected dates and additional strategies and objectives.

Appendix 1

Environmentally Preferable Purchasing Guidelines
Arkansas Department of Information Systems

1.0 Statement of Policy

It is the policy of the Arkansas Department of Information Systems to:
Purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practical, and

Purchase products that include recycled content, are durable and long-lasting, conserve energy and water, reduce greenhouse gas emissions, are mercury-free, and lead-free, use agricultural fibers and residues, and use wood from sustainably harvested forests.

2.0 Purpose

This policy is adopted in order to:

- conserve natural resources,
- minimize environmental impacts such as pollution and energy use,
- eliminate or reduce toxics that create hazards to workers and the community,
- support strong recycling markets,
- reduce the volume of materials that are land filled,
- increase the use and availability of environmentally preferable products that protect the environment,
- identify environmentally preferable products and distribution systems,
- reward manufacturers and vendors that reduce environmental impacts in production and distribution systems and,
- create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

3.0 Specifications

3.1 Source Reduction

3.1.1 The Arkansas Department of Information Systems shall institute practices that reduce waste and result in the purchase of fewer products whenever practical and cost-effective, without reducing safety or workplace quality, including but not limited to:

- using electronic communication instead of printed,
- using double-sided photocopying and printing,
- streamlining and computerizing forms,
- using "on-demand" printing of documents and reports as they are needed,
- sharing equipment and occasional use items,

reusing products such as but not limited to: file folders, storage boxes, office supplies, and furnishings

- choosing durable products rather than disposable,

- buying in bulk when storage and operations exist to support it

3.1.2 DIS shall purchase remanufactured products such as laser toner cartridges, tires, furniture, and equipment whenever practical, but without reducing safety, quality or effectiveness.

3.1.3 DIS shall require all equipment bought after the adoption of this policy to be compatible with source reduction goals and practices when practical, including but not limited to:

- Copiers and printers capable of duplexing
- Scanners
- Bulk storage and operation.

3.1.4 All Purchasers/Buyers shall evaluate short-term and long-term costs in comparing product alternatives, when feasible. This includes consideration of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives. Examples of products for which such cost comparisons can indicate significant differences between short and long-term costs include, but are not limited to office furniture, office equipment, and vehicles.

3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.

3.2 Recycled Content Products

3.2.1 Printing paper, office paper, and paper products shall contain the highest postconsumer content practical, but no less than the minimum recycled content standards established by the United States Environmental Protection Agency (U.S. EPA) Guidelines (see Definitions).

3.2.2 Janitorial paper products shall contain the highest postconsumer content practical, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

3.2.3 Other products for which the U.S. EPA has established minimum recycled content standard guidelines, such as those for, transportation, vehicles, and non-paper office products, shall contain the highest postconsumer content practical, or, when postconsumer material is impractical for a specific type of product, contain substantial amounts of recovered material, but no less than the minimum established by the U.S. EPA Guidelines.

3.4.4 DIS shall purchase products and equipment with no lead or mercury whenever possible, including automotive vehicles. For products that contain lead or mercury, DIS shall give preference to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.

3.4.5 All applicable computer and network equipment, currently, desktop, laptop, portable, and notebook PCs intended for individual use, and computer monitors purchased by DIS are required to have achieved a Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT). As other types of PC equipment become available under the EPEAT system from manufacturers participating in State computer procurement contracts, the equipment will be included in the list of products which must meet the Bronze ranking to be purchased. Additional consideration will be provided for products that have

achieved EPEAT Silver or EPEAT Gold registration. The registration criteria and a list of all registered equipment are provided at www.epeat.net .

3.4.6 End-of-life vehicles will be replaced with less polluting alternatives such as hybrids, vehicles that can run on bio-based fuels or electric batteries, and best available technology, when practical.

3.3 Energy

3.3.1 Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. When necessary, suppliers or manufacturers shall train equipment operators and maintenance personnel in the proper enabling and use of energy efficient and sleep mode functions on their equipment.

3.3.2 All appliances purchased by DIS and for which the U.S. EPA ENERGY STAR® certification is available shall meet ENERGY STAR® certification. Typically, this would include exhaust fans, water heaters, computers, printers, exit signs, water coolers and appliances such as refrigerators, dishwashers and microwave ovens. This also applies to leased appliances such as coffee stations.

3.3.3 When ENERGY STAR® labels are not available, energy efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program will be chosen.

3.4 Green Building – Construction and Renovations

3.4.1 All building and renovations undertaken by DIS shall follow green building practices for design, construction, and operation.

3.4.2 All newly constructed buildings owned or leased by DIS shall incorporate sufficient green building methods and techniques to qualify for the equivalent of a Leadership in Energy and Environmental Design (LEED™) or Green Globes™ rating system certification (see Section 4.0 Definitions).

3.4.3 Renovation of buildings owned or leased by DIS shall achieve as many prerequisites and credits as feasible as described in the LEED™ and/or Green Globes™ rating systems for Existing Buildings and any subsequent version adopted (see Section 4.0 Definitions).

3.4.4 DIS shall encourage agencies, vendors, and other members of the community, including architects, builders and contractors, to use green building methods and practices in Arkansas and to achieve standards set by the LEED™ and/or Green Globes™ rating systems.

3.5 Waste Minimization

3.5.1 DIS encourages vendors to eliminate packaging or use the minimum amount necessary for product protection, to the greatest extent practical.

3.5.2 Packaging that is reusable, recyclable, or compostable is preferred, when suitable uses and programs exist.

3.5.3 Vendors shall be encouraged to take back and reuse pallets and packaging materials.

3.5.4 Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be encouraged to offer a take back option for equipment for reuse or environmentally safe recycling.

3.6 Landscaping

3.6.1 Workers and contractors providing landscaping services for DIS properties, including those that are owned or leased, shall employ sustainable landscape management practices, whenever possible, including:

- The use of integrated pest management, including minimal pesticide use, is required at properties owned by DIS and encouraged for leased properties.
- Grass cycling (leaving the clippings on the lawn) is required for at least 50% of all mowing.
- Pruning shall be done on an as needed basis. Thinning is the preferred method of pruning. Minimal heading or shearing is encouraged.
- Fertilizing should be done on an as needed basis, as indicated by a soil analysis. Slow release and/or organic fertilizers are preferred.
- Irrigation scheduling based on weather or an as needed basis is required whenever possible. Drip irrigation is preferred whenever practical.
- Turf areas where drip irrigation is not appropriate should be limited to walking and recreation surfaces. All other landscaping, such as for views, should be accomplished with low-water plantings.
- Recycling of plant debris by composting and/or maintaining a minimum two-inch layer of mulch under trees, shrubs and groundcovers and a minimum three-inch layer in all open areas is strongly encouraged. Allowing leaf drop to become a part of the mulch layer in tree, shrub and groundcover areas is preferred.

3.6.2 Plants should be selected to minimize waste by choosing species that are appropriate to the microclimate, species that can grow to natural size in the space allotted and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

3.6.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged. Concrete substitutes are encouraged for walkways.

3.6.4 Because of the greater polluting characteristics of two-stroke engines, powered by an oil-and-gas mixture, compared to four-stroke engines, all contracts for grounds keeping should contain a provision to discourage the use of two-stroke engines and encourage the use of four-stroke, electric or alternative fuel engines such as propane or biodiesel. Manual equipment and tools are also encouraged. Further, a provision should be included in these contracts that retains the right of DIS to disallow the use of two-stroke engines should the grounds covered by the contract become part of a nonattainment area. A sample provision follows:
"Because of the greater pollution produced by two-stroke engines, which use an oil-and-gas mixture for fuel, compared to four-stroke, electric and alternative fuel engines such as propane and biodiesel, the use of two-stroke engines by the successful bidder is discouraged and the use of four-stroke, electric or alternative fuel engines is encouraged. Manual equipment and tools

are also encouraged. Special consideration will be given to those bidders who certify that they will use four-stroke, electric or alternative fuel engines rather than two-stroke engines. If the grounds that will be maintained under this contract become part of a nonattainment area based on air quality, DIS reserves the right to disallow the use of two-stroke engines by groundskeepers on its property; therefore, the successful bidder must be capable of performing all duties without the use of two-stroke engines."

3.7 Agricultural Bio-Based Products

3.7.1 Vehicle fuels made from rapidly renewable plant-based contents such as vegetable oils are encouraged whenever practical.

3.7.2 Paper, paper products and construction products made from rapidly renewable plant-based contents such as agricultural crops and residues are encouraged whenever practical.

4.0 Definitions

4.1 "Agricultural Bio-Based Products" means commercial or industrial products, other than food or feed, which utilize agricultural crops or residues but does not include products made from forestry materials.

4.2 "Buyer" means anyone authorized to purchase on behalf of this jurisdiction or its subdivisions.

4.3 The "Canadian Standards Association" (CSA) is a not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace. The CSA works to develop standards that address needs, such as helping to preserve the environment, enhancing quality of life, advancing public safety and health and facilitating trade (http://www.csa.ca).

4.4"Chlorine free" means products processed without chlorine or chlorine derivatives.

4.5 "Contractor" means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with DIS or serves in a subcontracting capacity with an entity having a contract with DIS for the provision of goods or services.

4.6 "Dioxins and furans" are a group of chemical compounds that are classified as persistent, bio-accumulative, and toxic by the Environmental Protection Agency.

4.7 "ENERGY STAR®" means the U.S. EPA's energy efficiency product labeling program described at http://www.energystar.gov .

4.8 "Energy Efficient Product" means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.

4.9 "Electronic Products Environmental Assessment Tool (EPEAT)" is a procurement tool designed to help institutional purchasers evaluate, compare, and select desktop computers, laptops, and monitors based upon their environmental attributes as specified in the consensus-based IEEE

Standard for the Environmental Assessment of Personal Computer Products (1680). More information on EPEAT is available at http://epeat.net .

4.10 "Green Globes™" is an online building and management environmental audit tool that helps building designers, property owners, and managers measure the environmental performance of buildings against best practices in areas such as energy, water, hazardous materials, waste management and indoor environment. Green Globes™ is a rating system for green buildings that is similar to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) rating system. More information is available at http://www.greenglobes.com .

4.11 "Green Seal" is an independent non-profit organization dedicated to safeguarding the environment and transforming the marketplace by promoting the manufacture, purchase, and use of environmentally responsible products and services (www.greenseal.org).

4.12 "Integrated Pest Management" or (IPM) is a pest control system that uses a combination of four techniques designed to prevent, eliminate or suppress pests to minimize the use of potentially hazardous chemical and biological contaminants. The four control methods are: cultural controls; mechanical/physical controls; chemical controls; and organic controls.

4.13 "Leadership in Energy and Environmental Design (LEED™) Rating System" means the self-assessing system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and high-rise residential buildings. Credits are earned for satisfying defined criteria and standards. Different levels of green building certification are awarded based on the total credits earned. The LEED™ Green Building Rating System is described at http://www.usgbc.org .

4.14 The "Organic Trade Association" (OTA) is a membership-based business association that focuses on the organic business community in North America. OTA's mission is to promote and protect the growth of organic trade to benefit the environment, farmers, the public and the economy (http://www.ota.com).

4.15 "Postconsumer Material" means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

4.16 "Practical" means whenever possible and compatible with State and Federal law, without reducing safety, quality, or effectiveness.

4.17 "Preconsumer Material" means material or by-products generated after the manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

4.18 "Processed Chlorine Free" (PCF) refers to a recycled product in which the recycled and virgin content of the product is produced using no chlorine or chlorine derivatives.

4.19 "Recovered Material" means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic

value, and includes pre-consumer and postconsumer material but does not include excess resources of the manufacturing process.

4.20 "Recycled Content" means the percentage of recovered material, including pre-consumer and postconsumer materials, in a product.

4.21 "Recycled Content Standard" means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as "recycled products."

4.22 "Recycled Product" means a product that meets DIS's recycled content policy objectives for postconsumer and recovered material.

4.23 "Remanufactured Product" means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

4.24 "Reused Product" means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

4.25 "SEER" stands for "seasonal energy efficiency ratio." Air conditioning units are assigned an efficiency rating that is known as its SEER. The SEER is defined as the total cooling output (in British thermal units or Btu) provided by the unit during its normal annual usage period divided by its total energy input (in watt-hours) during the same period. The SEER 13 rating is an energy efficiency standard that is governed by the U.S. Department of Energy.

4.26 "Source Reduction" refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

4.27 The "Toxics Release Inventory" (TRI) is a publicly available U.S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as Federal facilities. It includes chemicals that are classified as carcinogens under the requirements of the Occupational Safety and Health Administration (OSHA) Lists can be obtained from http://epa.gov/tri/chemical/index.htm .

4.28 "U.S. EPA Guidelines" means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for Federal agency purchases as of May 2002 and described at http://www.epa.gov/epaoswer/non-hw/procure/products.htm , or as updated.

4.29 "Water-Saving Products" are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets Federal standards.

5.0 Priorities

5.1 The health and safety of workers, citizens, and DIS employees is of the utmost importance and takes precedence over all other policies.

5.2 DIS developed a successful internal recycling system and recognizes that recycled content products are essential to the continuing viability of a sustainable market.

5.3 Nothing contained in this policy shall be construed as requiring a division or contractor to procure products that do not perform adequately for the intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

5.4 Nothing contained in this policy shall be construed as requiring DIS or a contractor to take any action that conflict with State or Federal requirements.

6.0 Implementation

6.1 This policy shall be implemented through the development of an advisory committee or Green Purchasing Team consisting of members representing all of the agency's divisions. The team's responsibilities shall include, but are not limited to:

- Evaluating opportunities for substituting environmentally preferable products,
- Designing and implementing programs and processes for increasing the purchase of environmentally preferable products,
- Ensuring that purchasing documents, specifications, and contracting procedures do not contradict each other and do not deter or inhibit the purchase of environmentally preferable products.
- Providing information to facilitate the evaluation and purchase of environmentally preferable products, including identifying appropriate products and sources and providing technical assistance
- Evaluating obstacles to purchasing such products in order to create solutions
- Educating division chiefs, section managers, purchasing liaisons and employees about DIS's Environmentally Preferable Purchasing Policy.

6.2 In compliance with State law, vendors shall be required to specify the minimum or actual percentage of recovered and postconsumer material in products, even when such percentages are zero.

6.3 Vendors and successful bidders shall verify environmentally preferable purchasing claims by certifying, under penalty of perjury, that the environmental attributes claimed are accurate. Such verification shall be accomplished by supplying signed verification from either a recognized certifying organization or the manufacturer, or by identifying claim verification on the product, such as the ENERGY STAR® symbol. This requirement for certification applies to products for which the vendor or successful bidder claims such attributes as apply to the product, including, but not limited to, recycled content, non-toxic, chlorine-free, reduced toxicity, sustainable forestry, and energy-saving features.

6.4 Buyers making the selection shall provide a written explanation for product choices that do not meet the environmentally preferable purchasing criteria in this policy. Such written explanations shall be filed with the DIS Purchasing Agent within 15 days of making the product choice (see Procurement Determination Form).

Department of Information Systems
Arkansas. A State of Technology.

Procurement Determination Form

Item: _____
This item is required to meet Environmentally Preferable Purchasing guidelines as described in DIS's policy.

___ I have considered the Environmentally Preferable Purchasing guidelines and searched for product or service options that meet them.

____ Compliance with DIS's guidelines was not attainable for this purchase because:

____ Item is not available within a reasonable period of time.
(Need date: _____ Date available: _____)

____ Item fails to meet a performance standard in the specifications.
Specifically, _____
_____

____ Item is not available, or is not available from 2 or more sources.

Market research was performed by calling _____ (insert number) vendors, but only _____ was able to supply the item.

____ Item was only available at an unreasonable price (i.e., EPP item cost more than non-compliant item).

Price of EPP item: _____

Price of non-compliant item: _____

____ Compliance would conflict with State or Federal law requiring that: _____

_____

_____ _____ _____
Signature of Purchaser Printed Name of Purchaser Date

Department of Information Systems
Arkansas. A State of Technology.

Appendix 2 - A

Shredding and Recycling Procedure

Arkansas Department of Information Systems

Required Outcome(s):

- The secure disposal of waste paper created from official DIS business.
- The responsible disposal and recycling of waste paper not created from official DIS business.

Procedure:

1. What goes where?

a) **All waste paper with official DIS business information on it goes in locked shred containers**. This may be from printers, copiers, fax machines, and hand written notes. See details below.

b) All waste paper that does not contain official DIS work product on it into a recycling container located in various locations throughout the office. This includes all other paper products that do not contain sensitive information or have food residue. Examples include all types of paper, soft-bound books, brown paper bags, newspapers, junk mail (including window envelopes), cardboard, catalogs, magazines, phone books, paper ream wrappers. See details below.

c) What goes in ordinary trash? Containers of any kind with food residue, plastic wrapping, hardback books

2. Recycling details:

- Staples do not have to be removed, but you must remove paper clips and binder clips
- If you have trouble locating a reasonably convenient container, see your manager for help.
- If your container is full, you can empty it (or find a willing volunteer) by taking it to the first floor loading dock and emptying the contents into the recycle dumpster.
- If your container not large enough, contact the DIS Recycling Coordinator. A larger size maybe available.
- Members of the recycling team should periodically check the paper recycle bins to ensure proper use
- Ideally members of the recycling team will be responsible for ensuring the paper recycle bins are emptied as need. They can rotate the task with staff that uses the bins.

3. Shredding details:

a) Shred containers are located around the department.

- If you have trouble locating a reasonably convenient container, see your manager for help.
- If your container is full, wheel it to DIS Operations Paper Storage Room and exchange it for a replacement.
- If your container not large enough contact Computer Operations, there are two sizes, we will work with the vendor to get the right size for your area. The containers are interchangeable, so don't worry about which one you have.

b) The shredder vendor does not require the removal of fasteners such as staples, paper clips and paper clamps. Of course clips and clamps should be removed for reuse.

c) If you have computer media (tapes, cd's, fiche, etc.) for disposal, please bring it to Computer Operations. They will put it in a separate container destined for the vendor's super-duty shredder.

d) To handle items that are too large to fit into the locked bins, call Computer Operations at 682-4905 between 9 a.m. and 4:30 p.m. and arrangements will be made to bring the items to the paper storage area.

e) To help with notification and to perform a monthly test of the overhead pager, the DIS receptionist will broadcast this message when the shred vendor is here and is ready to empty:

"Attention DIS, attention DIS, the shredder vendor has arrived to empty the shred containers. Please bring the shred containers from all areas to the hallway for immediate emptying. Repeat, the shredder vendor has arrived to empty the shred containers. Please bring the shred containers from all areas to the hallway for immediate emptying. This is also a test of the overhead paging system. If you have any trouble hearing this message, please report it to the DIS receptionist. Thank you."

f) Upon this announcement of when the shredder vendor has arrived, managers and staff in all work areas see that shred containers are wheeled to the hallway and then recovered as soon as they are emptied. Good safety practice prohibits us from leaving shred containers sitting for long periods in the hallways.

g) The Shredder Vendor will unlock the containers containing the materials for shredding. It is up to the employees retrieving containers to ensure that the containers are locked before they are put back in place to receive shredding materials.

h) If something is dropped into a locked container accidentally, see the Data Center Team Lead. Having keys around affects the security of the containers so please be careful and request this only if absolutely necessary.

Controls and Measures:

- The DIS receptionist will broadcast on the overhead pager when the shred vendor is here.

Responsibility/Assignment:

- All DIS Employees are responsible for
  a) Putting waste in the correct containers.
  b) Wheeling shred containers to the hallway, returning them as soon as they are emptied and assuring they are locked.
- Computer Operations is responsible for
  a) Assistance with shred bins
  b) Computer media disposal
  c) Assistance with large items
- DIS Receptionist is responsible for
  a) Notification via the overhead pager when the shred vendor is here.
- There is a DIS recycling team that nominates a Recycling Coordinator
  b) Members of the recycling team should periodically check the paper recycle bins to ensure proper use
  c) Ideally members of the recycling team will be responsible for ensuring the paper recycle bins are emptied as need. They can rotate the task with staff that uses the bins.

Appendix 2 - B

Recycling Aluminum and Plastic Standard and Procedure

Arkansas Department of Information Systems

Required Outcome(s):

This process is meant to assure that DIS recycles aluminum and plastic to comply with the Governor's Executive Order 09-07 (May 28, 2009).

Standard and Procedure:

1. Recyclable materials are rinsed aluminum cans and plastic bottles (neck smaller than body).

2. All recyclable materials must be in clear plastic bags.

3. Plastic and cans cannot be comingled at DIS. "Duo" type recyclers will be located in common areas of the DIS Office and Warehouse facilities in order to provide a means of sorting the recyclables upon disposal.

4. The DIS Recycling Coordinator and team will:

    a. Obtain containers and clear plastic liners to hold recyclable materials.

    b. Develop and publish informational material available through several different mediums to publicize the program, what can be recycled and the proper way to recycle materials.

    c. Identify recycling coordinators whose responsibility it is to maintain the receptacle in their area(s) and empty as necessary.

    d. Identify a location to store recyclable materials before they are taken to the recycle container.

5. Employees can bring recyclable materials from home and place into the recycle containers or have them in clear plastic bags.

6. The DIS Recycling Coordinator will notify the DIS Warehouse team that there are materials ready to be taken to the container and where they are currently located.

7. The DIS Warehouse team uses the DIS provided truck to haul the materials to the recycling container.

Controls and Measures:

The DIS recycling coordinator and members of the recycling team make periodic checks to ensure the containers are being used properly and that they are clean and serviceable.

Responsibility/Assignment:

- All DIS Staff are responsible to ensure that plastic and aluminum containers are recycled.
- The DIS recycling coordinator and team have coordination, facilitation and monitoring duties as described in the Procedure and Controls and Measures.
- The DIS Warehouse team hauls the materials.

Appendix 3

ESM - Server Decommission

Arkansas Department of Information Systems

1. Required Outcome(s):

When this procedure is followed successfully:

- A server from the computer floor at DIS is removed and sent to M&R
- All of the supporting hardware and software are removed or handled appropriately
- The Fiscal, Network and Operations Teams are informed of the change

2. Procedure:

Unless otherwise noted, ESM (UNIX/Windows Support Teams) will perform the following steps:

2.1 Determine application viability with customer.

2.2 Remove server from backup schedules.

2.3 Determine retention policy with customer.

2.4 Shutdown all applications, databases, and/or services.

2.5 Disable all scripts, cron/at jobs, and any other scheduled jobs.

2.6 Remove/release all product license keys.

2.7 Modify the DASD/Tape billing scripts on FTP/TSM servers.

2.8 Inform Fiscal of the change in CPU counts for billing purposes.

2.9 Identify and remove all SAN resources being used on the server.

2.10 Release storage resources (LUNs) on the Shark(s).

2.11 Identify the ports used on the SAN switches via WWPN.

2.12 Remove alias definitions and zoning information on the SAN fabric(s).

2.13 Remove Volume Group entries from SAN storage devices (DS8300, Shark, etc).

2.14 Unplug fiber cabling from SAN switch, if necessary.

2.15 Remove server entries in monitoring software (SPONG, Nagios, SCOM, etc).

2.16 Identify the VLAN/subnet and MAC address of all configured network interfaces.

2.17 Inform the Network Team of the VLAN/MAC address information so they can identify/release the switch ports.

2.18 Prepare internal hard drives IAW established procedures.

2.19 Remove fiber and Ethernet cabling from machine, and remove from subflooring.

2.20 Remove power cables from PDU(s).

2.21 Identify the breakers the unneeded PDUs are connected to, and give that information to Operations to reallocate power.

2.22 Give fiscal CS & AASIS Tag numbers.

2.23 Fiscal will schedule M&R pickup and update inventory.

3. Controls and Measures:

3.1 Periodic reviews of applications will be accomplished. This control will identify servers that need to be decommissioned.

3.2 Yearly reviews of maintenance costs will be accomplished. This control will identify which servers need to be replaced.

4. Responsibility/Assignment:

ESM is responsible for all steps above except the following:

4.1 Fiscal will:

4.1.1 Schedule M&R pickup.

4.1.2 Remove equipment from inventory.

4.2 Customer will:

4.2.1 Determine Application viability with Unix/Windows Support.

4.2.2 Determine retention policy with Unix/Windows Support.

4.3 Network will:

4.3.1 Remove the specified switch ports from the VLANs.

5 Flowchart: N/A

Appendix 4

Plug-Load Policy

Arkansas Department of Information Systems

June 9, 2010

In conformance to Governor Beebe's Executive Order 09-07 (May 28, 2009) which encourages the reduction of energy consumption by State agencies and the environmental impact of State agency operations, DIS has developed the Strategic Energy Plan to address sustainable building and operational practices that mandate no-cost or low-cost energy conservation measures. Item 3 (h) of the Executive order specifically addresses the reduction of plug-load attributable to non-essential appliances. Plug load control is an integral part of a comprehensive energy management strategy. The U.S. Department of Energy estimates that office plug load represents 26% of energy use in commercial offices.

Energy codes and green building initiatives are only beginning to address control of the growing electrical demand of plug loads. Many plug in products continue to consume energy even when turned off, such as a cell phone charger left plugged into a wall receptacle continues to consume energy even when the cell phone is disconnected.

The plug load, which includes appliances such as coffee makers, toasters, space heaters, copiers, faxes, computers, monitors, refrigerators, lamps, decorations, fans, collectibles, televisions, DVD/VCR players, etc., is significant. It is the single largest opportunity to cut energy costs with no capital investment. These devices individually are almost negligible in terms of power consumed, but together they add up to tens of thousands of dollars in energy costs. Plug load represents a two-fold burden. First, the electric power plug loads directly consume, and second, the additional cooling load on HVAC equipment.

In addition to energy consumption, safety is a great concern. The Arkansas Insurance Department, Risk Management Division, Facility Safety Inspections has addressed issues that not only affect energy usage, but also involve safety issues in State owned and leased buildings. Past inspections in the MAC revealed many plug-load issues that must be addressed, including:

- Inappropriate use of extensions
- Absence of surge protectors
- Prohibited use of fans and space heaters
- Electrical cords in disrepair and/or inadequate grounding
- Toaster ovens in tenant spaces (only allowed in employee break rooms)
- Toaster ovens plugged in extension cords
- Coffee pots in tenant spaces
- Refrigerators in tenant spaces

In keeping with tenant safety, the energy code and green building initiatives, DIS will adopt this plug-load policy effective July 1, 2010. In conjunction with Governor Beebe's Executive Order 09-07 and ABA Building rules, we must lead by example and ensure that we provide a safe working environment, while conserving energy for the future.

All personal, non-essential small appliances, such as coffee makers and pots, toasters and toaster ovens, space heaters, small refrigerators, microwave ovens, televisions, radios,

decorative lighting, personal cell phone chargers, electric blankets, heating pads, massage devices, and any other personal non-essential plug-load appliances will not be authorized in DIS occupied space effective July 1, 2010. Personal fans will be allowed to make the work environment more comfortable. This is due to the aging building HVAC system. Also due to the building overhead lighting arrangements, personal lamps used for supplemental lighting will be allowed and will use CFL or other ENERGY STAR® qualified bulbs (bulbs will be provided by DIS). Personal lamps used only for decorative purposes may be displayed in offices as long as they are not plugged in. Inspections will be conducted periodically by the DIS Energy Manager, DIS Management, and ABA personnel.

DIS will comply with the Americans with Disabilities Act of 1990. The published "ADA Standard and Procedure" has provisions to address employees request for reasonable accommodations. See http://home.dis.arkansas.gov/process_documentation/Process_Documents/Forms/AllItems.aspx - Policy Owner: Human Resources.

DIS has designated eight areas in the MAC building third floor area for food storage and preparation. The floor plan and designated areas are shown in the "Employee Seating Chart" " Visio drawing.
http://home.dis.arkansas.gov/security/Shared%20Documents/Seating%20Chart.vsd
This policy is also incorporated into the "Facilities Use Policy" Policy. See http://home.dis.arkansas.gov/process_documentation/Process_Documents/Forms/AllItems.aspx - Policy Owner: Security.

Controls:

Employees not following this DIS Policy are subject to standard DIS disciplinary procedures.

Department of Information Systems
Arkansas. A State of Technology.

Appendix 5

DIS StEP Timeline and Work Breakdown Structure

10/1/2009 to 6/30/14

WBS	TASK NAME	START	FINISH	NOTES
1	**StEP drafted & submitted by 10/31/09**	**10/1/09**	**10/30/09**	**Kick off**
1.1	Energy Team information compiled	10/1/09	10/21/09	Debbie Martin, Complete
1.2	Policy statement developed	10/1/09	10/21/09	Jeff Dean, Complete
1.3	Facility/Site Description information completed	10/1/09	10/21/09	Debbie Martin, Rick Martin, and Timothy Bales, Complete
1.4	Collect and review lease agreements for the MAC bldg, Warehouse, and network space at UAPB and U of A Fayetteville	10/1/09	10/21/09	Fiscal - Lou Ann Elmore's team will collect and provide this information, Complete
1.5	Develop work breakdown structure	10/16/09	10/30/09	John Benjamin developed work breakdown structure/ schedule for project and will be updated as needed. Complete
2	**Reduce the agency's annual maintenance and operating budget devoted to energy consumption**	**10/1/09**	**6/30/14**	**20% reduction by 2014**
2.1	Collect annual energy usage data for facilities	10/1/09	6/30/14	Ongoing
2.2	Collect annual energy usage data for vehicle fleet	10/1/09	6/30/14	Ongoing
2.3	Reduce power consumption in the Data Center	10/1/09	6/30/14	**For FY2011 DIS has reduced the overall electrical usage based on kilowatt per hour (kWh) for the State Data Center by 17.11% from the FY2008 total kWh usage.**
2.4	Reduce power consumption in the office and support areas	10/1/09	6/30/14	See notes in 3.6, 3.7, 3.8, and 3,9
3	**Reduce the environmental impact of the agency's overall operation**	**10/1/09**	**6/30/14**	
3.1	Develop new or revise existing standards and criteria for purchasing materials, products or services	10/1/09	10/31/09	Complete – see Appendix 1
3.2	Fuel-efficient Fleet	10/1/09	10/31/09	Choose a vehicle that fits the job: Combine trips when possible; Ride share; Reduce idling of vehicle.

3.3	Recycling Program	10/1/09	6/30/10	DIS led the initiative for a coordinated effort to provide centralized recycling services in the State Capitol Complex for aluminum cans and plastic beverage bottles beginning in June 2010.
3.4	Lighting Systems	10/1/09	6/30/14	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.5	Heating, Ventilation, and Air Conditioning Systems	10/1/09	6/30/14	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.6	Computer Equipment	10/1/09	6/30/14	DIS has increased its number of EPEAT rated equipment to 35.3% which is near a 20% increase over the previous reporting period.
3.7	Paper Usage	10/1/09	7/1/11	**DIS did not meet this goal of 25% by 7/1/11.**
3.8	Reducing Non-essential Electricity Usage	10/1/09	6/30/10	DIS reduced the agency plug load by adhering to the revised Facilities Use Policy and the removal of non-essential personal appliances. Approximately 100 personal appliances have been removed and eight common food preparation / storage areas have been designated for staff use. DIS has procured several ENERGY STAR® or more efficient appliances in the common food preparation / storage areas (as need warrants).
3.9	Training / Culture of energy awareness	10/1/09	12/31/10	**FY2011 & FY2011 ongoing**
3.10	Evaluate domestic hot water systems(s) for energy conservation measures	10/1/09	6/30/14	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.11	Evaluate building envelope(s) for energy conservation measures	10/1/09	6/30/14	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.12	Water Conservation	10/1/09	6/30/14	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
4	**Integrate energy use considerations into maintenance plans**	**10/1/09**	**6/30/14**	

4.1	Enhance preventative and routine maintenance procedures to maximize energy efficiency	10/1/09	6/30/14	
4.2	Integrate energy considerations into cleaning / janitorial activities	10/1/09	6/30/14	
4.3	Evaluate high efficiency replacements of all equipment	10/1/09	6/30/14	
5	**Integrate energy use considerations into capital improvement plans**	**10/1/09**	**6/30/14**	**Should DIS enter into a capital improvement plan, i.e. new State Data Center, the design will comply with Act 1494.**
5.1	Incorporate energy efficiency considerations into procurement of equipment	10/1/09	6/30/14	
5.2	Incorporate energy efficiency considerations into new construction or renovation projects	10/1/09	6/30/14	
6	**Promote StEP timeline**	**10/1/09**	**10/30/09**	
6.1	Develop a timeline for implementation of the StEP that is within a realistic time frame	10/1/09	10/30/09	DIS meet the required reporting requirements by October 31, 2009 and April 1, 2010