Department of Energy

Environmental Management System Status Report for Fiscal Year 2009 Pursuant to Executive Order 13423

Introduction

This report provides a summary of the progress of DOE facilities and organizations in implementing the Environmental Management System (EMS) requirements of Executive Order (EO) 13423. In addition to the tabulation of EMS responses, the Report contains a summary of responses to the narrative questions on DOE experiences with EMS implementation and a summary of DOE strategy for implementation of EMSs at "all appropriate levels". The report was prepared in accordance with the documents provided in the letter from the Federal Environmental Executive (FEE) to Agency Senior Sustainability Officers, dated November 2009.

Sections I through V of this report reference Parts I through V, respectively, of "Facility/Organization EMS Metrics Fiscal Year 2009" (Attachment C to the FEE letter).

Section I: Facility-Level or Multi-site Organization EMSs

a. Number of EMSs

The total number of EMSs that have reached their Implementation Date is 47. These are reflected in the percentages in Section III.

Three newly identified EMSs have not yet formally established Implementation Dates; of these two reported data this year (their information is reflected in Section IV) and one did not.

One previously reporting site is closing, and did not report in FY 2009.

Forty-nine EMSs are represented in the FY09 metrics in Section IV reflect (including two not yet fully implemented).

b. Description of Changes

The following table describes changes to the Agency's list of EMSs since the 2008 EMS report submission.

Name of Facility or Organization	Description of Change
Hanford -- Office of River Protection -- Waste Treatment Facility	Added to list - newly identified facility EMS; EMS deadline not yet established.
Savannah River Salt Waste Processing Facility	Added to list - newly identified facility EMS; EMS deadline not yet established.
Savannah River site -- Mixed Oxide Fuel Facility	Added to list - newly identified facility EMS; EMS deadline not yet established.
Savannah River Site -- Security Contractor	Previously reported as part of Savannah River Site.
Idaho Naval Reactor Facility	Previously reported as part of Bettis Atomic Power Laboratory.
Yucca Mountain Project	Removed from list. The Administration is terminating this program, and currently there is no activity at the Yucca Mountain Site.

Section II. Declarations of Conformance

Based on responses to *Part II EMS External Audit and Declaration of Conformance*, DOE EMSs (facility EMSs and multi-site organization EMSs) declared in conformance are as follows:

Number of EMSs Declared in Conformance	Percent of EMSs Declared in Conformance
47	100%

Section III. Environmental Management System Scorecard Metrics

This section reports summary information on the status scores of individual facility/organization EMSs *and* the agency/department-level rating for the OMB Environmental Scorecard.

a. Facility/Organization Score Summary

Based on responses to *Part II EMS Scorecard Metrics*, DOE EMSs (facility EMSs and multi-site organization EMSs) scored as follows:

Score	Number of EMSs	Percent of EMSs
Green	39	83%
Yellow	8	17%
Red	0	0%

b. Agency/Department-Level Rating

Based on the individual EMS scores in the table above, DOE's department-level OMB scorecard rating for FY09 is **GREEN**.

Section IV. EMS Relationship to Sustainable Practices

Based on responses to *Part IV EMS Relationship to Sustainable Practices*, DOE EMSs (facility EMSs and multi-site organizational EMSs) reported the following:

		a. Has an assessment of...been conducted?		b. Is... identified as a 'significant aspect'?		c. Have objectives and targets been established to address...?		d. Are these objectives and targets included in the EMSs?		e. Have plans and programs been implemented to address...?		f. Are these plans and programs included in the EMSs?	
		Y	**N**	**Y**	**N**	**Y**	**N**	**Y**	**N**	**Y**	**N**	**Y**	**N**
1. Energy Use		44	5	39	10	45	4	42	5	44	5	42	5
2. Greenhouse Gas Emissions		27	22	24	25	25	24	23	20	27	22	26	17
3. Renewable Energy Use		37	12	21	28	35	14	31	13	36	13	35	9
4. Water Use		39	10	29	20	38	11	36	10	39	10	38	7
5. Purchasing		39	10	27	22	38	11	37	11	44	5	41	8
6. Solid Waste Generation		47	2	38	11	42	7	41	6	47	2	45	4
7. Purchasing and using Toxic or Hazardous Chemicals	None	43	6	36	13	39	10	36	11	46	3	43	6
	0												
8. Construction/Lease /Operation/Maintenance of Buildings		38	11	31	18	37	12	36	9	40	9	38	7
9. Vehicle Fleet Use /Petroleum Products Use	None	41	7	31	18	37	12	36	8	39	10	37	7
	1												
10. Purchase/Use/Disposal of Electronic Equipment		45	4	24	25	39	10	38	8	46	3	41	8
11. Environmental Regulatory Compliance		47	2	42	7	39	10	38	8	47	2	45	4

Section V. Environment Management System Experiences

This section provides selected comments and summary information based on responses to *Part V EMS Experiences.*

a. EMS Best Practices/Lessons Learned Facilities/organizations were invited to provide up to three statements identifying best practices and/or lessons learned in the past year.

> "A methodology and process were established to characterize and segregate low-level [radioactive] waste from mixed low-level [radioactive and hazardous] waste. An 85% reduction of mixed low-level waste was achieved within a six-month period. The monthly reduction of mixed low-level waste was 20.88 cubic meters resulting in a total savings of $876,960 for the first six months in 2009."

> "Surveillances under the EMS noted a need to reinforce a program to screen contractor chemical usage. Contractors were briefed on material usage expectations and more emphasis was placed on using materials that were already on the site. The [facility] was able to reduce chemicals brought on site."

> "Development, implementation, and expansion of 'off the shelf' radio frequency identification devices for paperless on-site shipping of waste to landfill by IT including multifunctional organizations and projects. Accurately tracks shipping information (waste profile information, classification of waste, & other data), location of truck (physical security), and location of waste as placed in landfill cell. Reduces fuel usage and greenhouse gas emissions."

> "Involving internal and external expertise to develop best PCB remediation approach of site-wide ponds. [State] Wildlife and [site contractor] team avoided extraction of hundreds of thousands of cubic yards of slightly PCB-contaminated sediment and transporting to landfill (muck & truck) through innovative removal of bottom feeding fish, clean cover at pond/land interfaces, aquatic grass to cover and hold sediment, and restocking pond with small game fish that are not bottom feeders."

> "Environmental incident reports, spills, and other events are tracked and trended to provide improvements of controls used."

> "Best Practice: Communications completed in FY 2009 to improve employee and management knowledge of the EMS. These were the design and use of an EMS Sustainability poster, an EMS summary booklet for reference by all managers, and regular EMS content in issues of the weekly [site newsletter]."

“Involving [the organization’s] site managers in the review of the significant aspects, targets and objectives increased understanding and awareness of the EMS program to a larger group.”

“The Employee Concerns office conducts periodic surveys on safety culture [environment, safety, and health]. They achieve a remarkable 95+% return rate. The high response rate is attributed to the fact that the employees are given time ‘on the clock’ to complete the survey.”

“The ground water group identified a ‘single point of contract’ for 24 hour reporting of spills to reduce inconsistencies in reporting thresholds and descriptions.”

“Lesson learned: Too many Environmental Management Programs (EMPs) can lead to a paper exercise/nightmare and not really anything getting accomplished. Focus EMPs to a limited number, say 10 total, incorporate interdisciplinary teams/programs with specific tasks/milestones, reduce the environmental footprint, and evaluate progress using meaningful metrics (e.g., reduced water or energy use).”

“As the EMS matures, it is important to adapt the internal assessment process to better identify opportunities for improvement.”

“Establishment of annual goals and objectives has allowed area management to identify and focus on important ESH issues within their organization's framework.”

“[Organization]’s Environmental Management Team meets bi-monthly to discuss EMS initiatives and to plan environmental activities for upcoming maintenance and construction projects.”

“A Record of Decision to document improvement actions is signed by senior management following the annual EMS Management Review.”

“Tie in environmental responsibility to employee's home as well as at work.”

“Best Practice: Formally established a sustainability project and began work on identifying a set of sustainability metrics utilizing the Global Reporting Initiative (GRI) framework.”

“Lesson Learned: Training program needs constant vigilance in order to keep pace with personnel assignment changes and procedure revisions. Increased emphasis is needed on systems approach (vs. expert-based model) due to staff turnover and rapidly changing requirements.”

“Close working relationships between environmental professionals, facility operations, procurement and experimental operations provide the best opportunities for adoption of sustainable practices.”

b. EMS Challenges Facilities/organizations were invited to provide up to three statements identifying EMS implementation challenges.

> "The 'that's the way we've always done it' paradigm (teaching the old dogs new tricks issue)."

> "Information 'overload' with competing initiatives."

> "Challenge - Ensuring subcontractor performance of work in accordance with the site's EMS. To help overcome this challenge: All work performed by subcontractors at the [site] requires the submittal of detailed work documents. These proposed work instructions are reviewed by a representative from the Environmental Affairs department to ensure all regulatory requirements are met and that all principles of the site's EMS are followed. Subcontractors are encouraged to use "green" practices as well as the procurement of products containing recycled materials and/or bio-based products."

> "A young work force that has multiple training requirements due to the hazards of the D&D/RA mission, and can't fully appreciate potential impacts of significant environmental aspects with their experience base. This is an EMS awareness and educational challenge."

> "Cost-plus contract does not identify pollution prevention or energy management costs in the baseline."

> "Facility is undergoing Decontamination and Demolition and most structures do not have water or electrical meters."

> "Radioactive contamination prevents most recycling and reuse efforts."

> "Retrofitting an ISO 14001 EMS based strictly on site[-identified] activities, aspects and impacts [to also address] non-significant aspects, impacts, and related objectives levied by EO 13423."

> "Incorporating new sustainable requirements into existing EMS."

> 'Keeping Leadership involved with management reviews."

> "Balancing the right level of EMS training is a challenge; clearly general environmental awareness is important to achieve throughout the facility. However, for competency-level training, it is important to really target the audience who will help make the most difference."

> "Revision of aspects analysis process to provide more in-depth and detailed analysis."

“The biggest challenge is continuous improvement particularly once a site has achieved 3rd-party ISO 14001 certification. These 3rd-party audits can be very weak and only evaluate at the surface level; the auditors don't really have the time or expertise to fully evaluate a complex site for continuous improvement. Unless you have a strong internal audit program, continuous improvement is difficult to evaluate in a one-week audit.”

“Funding for large infrastructure improvement projects is difficult to acquire; disconnect between money sources and programs makes life cycle planning difficult to implement, which is critically important in the area of energy and environment.”

“Environmental budget competition with other plant mission activities.”

“It has been a challenge to develop an EMS for construction activities that will eventually merge into operations, this has resulted in the need to develop procedures for construction only and some for operations only.”

“Turnover of personnel in key management positions in which ESH compliance is a major function of that job.”

“Streamlining the EMS to a consistent format.”

“Ensuring awareness across all elements of the organization.”

“Greenhouse gas tracking.”

“Many staff carry multiple environment, safety, and health responsibilities that frequently result in conflict with each other for priority.

“Modifying EMS to better integrate energy, transportation, and building goals.”

“Integration of new (e.g. EO 13514) and emerging requirements into existing tools and processes.”

“EPA termination of Performance Track program resulting in loss of some external recognition of EMS successes and one internally perceived benefit of EMS progress.”

“[Laboratory] is transitioning its EMS to prepare for registration against the ISO 14001 standard, requiring the EMS to become a more visible system to employees. In the past, the EMS was intended to be transparent to most employees by integrating it with existing work processes. Additional employee education and training may be necessary.”

“[Site]’s Energy Savings Performance Contract was cancelled in FY09 due to cost/return on investment concerns, resulting in a near-term setback to achieving more progress on the energy and water reduction goals.”

c. External Communication Facilities/organizations were invited to provide up to three statements identifying how the facility/organization uses the EMS to facilitate communication between the facility/organization and its stakeholders and neighbors.

> "Held public 'Lunch and Learn' series at [laboratory] Visitors' Center on: EMS, Electronics Stewardship, Campus Planning and construction, including Q&A sessions."

> "Provided information for [laboratory] community outreach newsletter including Environmental Stewardship/NEPA/Campus Planning articles."

> "[Site contractor] representatives have been working with DOE to include EMS themes in the annual Integrated Safety Management safety expo."

> "Developed EMS Fact Sheets for management/employees, a brochure, and an EMS puzzle that define EMS, environmental aspects, to convey [organization]'s significant environmental aspects, potential impacts of not managing these aspects, and contact information for additional assistance. All were shared at Safety Picnic with employees and vendors."

> "We strive to integrate our EMS with our NEPA compliance process, and we are currently in the process of preparing an Environmental Assessment that has gone out (in early FY10) for stakeholder/public review and comments."

> "EMS brochure developed and provided to all site visitors."

> "[Site] Regulatory Integration Team (SRIT). The DOE [site] office, EPA [regional office] and [state regulatory agency] have formed the SRIT to effectively implement the regulatory integration process at [the site]. The SRIT identifies issues that are cross-cutting and require high-level agency agreement so that actions can be taken consistently across multiple programs. The SRIT commissions IPTs, designates a team lead, defines the overall scope, objective, and deliverables, and provides guidance to facilitate resolution of an issue or build upon an opportunity."

> "The Executive Director [of the local] Concerned Citizens for Nuclear Safety stated, "[The site] is the gold standard for public participation."

> "Best Practice as stated in the 2009 third party EMS audit: "The [site] external communications programs and practices are thorough and well executed."

> The Annual Site Environment Report provides communication with the public about [the site's] environmental aspects."

“Environmental issues are discussed 3-4 times/year with an Environmental Advisory Committee of community stakeholders to promote awareness of [organization’s] activity and elicit feedback.”

“[Program] Update Newsletter is sent to 6,000 stakeholders quarterly.”

“[Site] involvement in community recycle program.”

“Presentation on green building and recycling topics at community-based action group.”

“[Site] involvement in community ‘Earth Day’ activities.”

“EMS-sponsored participation in Earth Day activities and the annual [laboratory] picnic helps community gain awareness of environmental issues and performance improvements.”

“Energy Town Halls, co-sponsored by the county, communicated on issues important to both the Lab and the county including renewable energy projects and cutting edge energy research at the Laboratory.”

“The EMS requires that our annual aspects and targets are provided to the public through the annual [site] Environmental Report.”

“Maintenance of shelf space at local libraries to allow public access to documents pertaining to ESH operations.”

“[Organization] utilizes its external website to convey information regarding EMS, environmental compliance issues and natural resource sustainability to customers and stakeholders. The website both encourages, and provides a mechanism for, feedback from interested external parties.”

“The EMS is available on the internet to any interested stakeholder, customer, or neighbor and allows them to learn more about [the organization]’s environmental program.”

“Several avenues have been used to communicate the environmental status of [the laboratory] to the public including a public website, the Site Environmental Reports, and the [laboratory] open house in which 22,000 members of the public visited [the laboratory] in one day.”

“EMS fosters a coordinated effort between the Communications and Environmental Directorates on high profile activities.”

“Annual Report to the Director on the [Laboratory] Environment is made available via the internet to the public.”

"The Annual Site Environmental Report and the associated summary document are available to the public. The ASER summary document is prepared, in part, by a local high school class."

"[The laboratory] is actively engaged with the local municipality and nearby schools on environmental issues and energy efficiency as part of its outreach programs as an ENERGY STAR Partner."

"[The laboratory] conducts annual briefings with the local environmental advisory committee."

"[Laboratory] representatives have spoken at numerous professional meetings and conferences about our EMS and sustainability programs."

d. Highest Priority Aspects Facilities/organizations were invited to provide up to three of their highest priority significant environmental aspects.

The most commonly mentioned environmental aspects were:

- waste (hazardous and radioactive)
- energy use
- wastewater discharges
- air emissions.

Also frequently mentioned were:

- transportation/fleet/fuel use
- toxic and hazardous materials
- water use
- greenhouse gas emissions.

Other sites noted specific issues such as PCBs, asbestos, beryllium or mercury. Several mentioned concerns with disturbing cultural or historic resources, and impacts on endangered species.

e. EMS Benefits to Agency Mission Facilities/organizations were invited to provide up to three statements identifying how EMS implementation has enabled the agency to operate more effectively in accomplishing its mission (e.g. reduced number of off-normal events that disrupt agency schedules or operations; greater interoperability among sites; better relations with host communities, states, and their elected representatives; greater speed and agility in responding to unexpected events; improved ability to write performance based contracts).

"[The laboratory] uses the EMS to maintain its environmental performance and thus provide an example of environmental stewardship in direct support of its DOE mission, specifically the strengthening of America's energy security and environmental quality."

"Management review has provided a new venue for discussion of company-wide issues. Though ostensibly focused on EMS topics, the scope facilitates

input and discussion from a variety of perspectives, which is insightful for many, and supports improved integration across functional and organizational boundaries."

"Having the EMS requirement provided management attention to environmental issues that are contemporary instead of relying on the assumption that because the mission is environmental restoration of legacy issues, the work is by default environmentally positive."

"Plans and goals are site-wide and signed by all contractors and [DOE site office]. This has increased interoperability among contractors."

"EMS has now reached six years without a [State] Department of Environmental Quality finding."

"Accomplishment of mission through better risk control of significant environmental aspects as a result of EMS education efforts related to significant aspects and their potential impacts.

"Improved definition of role and responsibilities."

"Improved evaluation of potential new aspects or impacts during upfront work planning process."

"EMS implementation has initiated awareness among employees to the benefits of practicing energy conservation and waste minimization."

"Achieving the objectives and targets enables [the laboratory] to focus on its research mission."

"Saves taxpayer money otherwise spent to correct environmental upsets such as crude oil spills and discharges that exceed permit limitations."

"[Facility's] EMS takes [the facility] beyond compliance to thinking about sustainability, energy efficiency, and environmental design."

"[Streamlines the process of identifying and flowing down environmental requirements to [site]'s workforce."

"Reduces notices of violations from federal and state regulatory agencies."

"Improved ES&H integration into business operations."

"Reduced risk to operation and mission programs in a manner that also increases capacity such as reduced waste generation, reduced energy and water use, and reduced compliance concerns."

“Cost savings from improvements can support expansion of research and mission work and reinvestment in infrastructure and facility improvements.”

“New or expanded activities are better evaluated for environmental aspects and regulatory compliance.”

“Reduction of excess materials on the plant has led to improved general housekeeping of the plant.”

“Better ability to respond to unexpected events.”

"The EMS process mandates that goals consider high-priority, compliance, and mission-related issues. These goals have been able to serve a practical and value-added service to the organizational mission.”

“The EMS has provided a standard and agreed-upon mechanism that informs senior management of mission-related environmental program status, progress, and potential problems. This has been helpful as high-level issues arise during the year.”

“Environmental issues are systematically identified, controlled, and monitoring to avoid regulatory citations.”

“The process of determining and rating significant environmental aspects helps greatly in prioritizing projects that will be cost effective to [the laboratory]. Any project that is cost effective helps lower operating costs, thus making research at the Lab more competitive with other options.”

“The compliance component to the EMS helps keep [the laboratory] in good standing with environmental regulatory requirements, which again, aids in keeping the focus on research.”

“Less regulator impact on research.”

“Lowered total energy costs with savings identified in energy audits.”

“Reuse of experimental equipment lowered costs and reduced experimental setup times.”

“The EMS provides a consistent and common framework for tracking environmental performance, improvements, and accomplishments for the lab and the Department.”

“EMS forces senior management to discuss environmental performance once a year in the Senior Management meetings, and measure performance on a quarterly basis.”

Section VI. Implementation of Environmental Management Systems at All Appropriate Organizational Levels

a. EMS Strategy

Under E.O. 13423, agencies are required to "implement within the agency EMSs at all appropriate organizational levels." The CEQ *Instructions* (http://www.fedcenter.gov/Documents/index.cfm?id=6825) contain guidance, and the Federal Environmental Executive issued further guidance in October 2008 (Attachment D to the FEE letter.)

DOE sites are largely government-owned, contractor-operated (GOCO). To address the EMS requirements of E.O. 13423, DOE's strategy is to include EMS requirements in the major operating and cleanup contracts at DOE sites. At Government-owned, government-operated (GOGO) sites, DOE implements the EMS. This is required under DOE Order 450.1A *Environmental Protection Program.*

b. Higher-Tier EMSs

DOE has not implemented "higher-tier" EMSs in addition to the facility EMSs and multi-site organization EMSs described above, and identified in Section I.

We will continue to examine appropriate opportunities to implement "higher-tier" EMSs, particularly at large DOE sites with multiple contractors.