

Environmental Management Systems: Implementation, Lessons Learned, and Best Practices
March 8 – 10, 2005
Abstracts

Date & Session

Titles, (Authors)

Plenary: Sustainable Environmental Stewardship throughout the Federal Government
March 8, Tuesday, 8:30-9:30 am, Conf Rm G

Sustainable Environmental Stewardship throughout the Federal Government (Ed Piñero, Keynote Speaker, Federal Environmental Executive)

Breakout A - Case Studies in Identifying and Integrating Environmental Aspects Into Work Planning
March 8, Tuesday, 9:45-11:45 am, Conf. Rm A

Identification of Aspects and Impacts at Pacific Northwest National Laboratory (Kami Lowry, Pacific Northwest National Laboratory)—

NWD identifies hazards (i.e., aspects) associated with its activities, products, and services at two distinct levels that have different purposes. The first level is the project/activities level. This level of analysis allows for the development of work planning associated with specific activities, that will reduce all hazards to the lowest level reasonably achievable, then mitigate the potential impacts of the remaining hazards. The second level is the Laboratory-level. This level of analysis takes hazards summary information from all the project/activity level analysis, determines those that are significant, in terms of ISO 14001, and prioritizes the significant hazards such that organizational environmental objectives can be established on an annual basis.

Project and Facility-Level: Hazards are reviewed and kept up to date for the individual projects/activities through the following mechanisms.

- Electronic Prep and Risk (EPR): All proposed projects conduct, review, and approve a preliminary risk assessment (i.e., documenting the hazards and risks associated with the activities). If funded, the information is updated and a Risk Mitigation Permit is developed, reviewed, and approved.
- F&O Procedures: Similar to the EPR process for R&D projects, hazards associated with facility maintenance and modification activities are evaluated.

Both processes integrate a National Environmental Policy Act review that evaluates environmental aspects and potential environmental impacts. Each process also contains criteria for updating evaluation when new activities are initiated or existing activities change.

Laboratory-Level: Significant environmental aspects are identified and prioritized utilizing the data generated at the project and facility level. The Laboratory-wide list of significant aspects, updated annually, is provided to support the input stage of the business planning cycle that is the primary mechanism for the establishment of organizational budgets, objectives, and targets.

PNWD works with a wide variety of potential hazards. The significant environmental hazards (i.e., aspects) with potential impacts include:

- chemical use and storage
- emissions to air
- energy use
- physical interaction with the environment (e.g., excavation of soils, building demolition, potential disturbance of wildlife, etc.)
- radioactive material use and storage
- regulated waste generation
- releases to water
- water use.

Making Prevention and Environment Part of Everybody's Job: Integrated Work Management at Los Alamos National Laboratory

(Patricia Gallagher, Los Alamos National Laboratory)—Worker involvement and integration of environmental controls at the work activity level is one of the more challenging aspects of developing an environmental management system. To gain buy-in, it is important to leverage existing systems and make environment an integral part of work planning. To assure success, environmental management responsibilities must shift from environmental support personnel to line managers and employees tasked with getting the work done on a daily basis. An added bonus is getting the prevention message to managers and employees at the work planning phase.

To meet this challenge, Los Alamos National Laboratory has implemented the Integrated Work Management Implementation process. This process integrates safety, security, and environment and requires prevention in each work planning document. The process is supported by a web-based work planning tool, the Job Hazard Analysis tool. This tool is in use at other NNSA sites as a safety tool, and LANL has leveraged this tool to include safety, security and environmental hazards.

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The slogan for this effort is, "Safety for You, Security for the Nation, Environment for the Future". The procedure is supported by a training video that emphasizes the importance of workers and line management in achieving a safe, secure and environmentally responsible workplace.

The Integrated Work Management effort looks at all aspects of environment from prevention to ecology, cultural resources, water quality, remediation, RCRA, solid waste, and air quality. A GIS-system provides desk-top access to information that helps planners identify outdoor area environmental hazards such as sensitive habitat, water course information, potential release sites, and cultural sites. This GIS system will save approximately \$500,000 year in avoided subject matter expert review time.

Integration of EMS & ISMS through the UT-Battelle Work Control Process (David Skipper, Oak Ridge National Laboratory)—The UT-Battelle work control process establishes the required procedures for managing and controlling work at ORNL. This work control process is based in Integrated Safety Management (ISM) principles and is designed to:

- Define the work scope
- Identify hazards, including environmental hazards (aspects)
- Develop and implement hazard controls
- Perform work within controls
- Provide feedback and continuous improvement

Work at UT-Battelle is classified into one of three categories:

- Activities associated with research and development (R&D) programs and projects, including theoretical work
- Activities associated with operations, maintenance and services, including those performed in support of R&D, but not directed by R&D personnel
- Activities associated with an office environment (e.g., management, office support, and clerical activities).

Work is evaluated and controlled through a web-based hazard analysis and control system. The product of this process is a Research Safety Summary (RSS) for planned R&D work and a Work Package for planned maintenance and operations type work. These documents define the limits within which the work activity is authorized to be conducted and identifies the environmental, safety and health hazards and controls, known as the Safety Envelope. The Safety Envelope takes into account work performed in nuclear facilities and incorporates other required environmental screening processes, such as are required by NEPA. Integrated Security and Safeguards Management principles are also woven into the work control process at UT-Battelle.

During the presentation, a demonstration of these web-based work planning tools will be presented.

Implementing an EMS that Integrates Pollution Prevention (P2)/Sustainability Concepts (Sara Cornwell, Ms. Janice Jackson, Mr. Wayne McMahon, BWXT Y-12)—BXWT Y-12 has implemented an EMS that integrates pollution prevention (P2)/sustainability concepts into environmental planning procedures/operations. The identification of significant environmental aspects/impacts was designed to give credit for positive impacts resulting from P2 activities. The aspect identification procedure included a scoring system assigning positive points to these aspects, and negative points to environmental impacts causing environmental harm. This successful integration of P2 into EMS efforts was reflected in new P2 initiatives.

Breakout B - Setting Objective & Targets, Establishing Programs and Monitoring Progress
March 8, Tuesday, 9:45-11:45 am, Conf Rm C

Using the UT-Battelle Performance Based Management model to establish EMS objectives and targets (Kathy Carney, Oak Ridge National Laboratory)—The expectation of ORNL management is to achieve simultaneous excellence in the areas of science and technology, laboratory operations, and community service. The Performance Based Management System (PBMS) defines ORNL's approach to utilizing business planning and assessment and to providing feedback and improvement information to ORNL staff. Efficient utilization of the performance-based management process guides line management and management system owners to monitor progress of objectives in support of business plans and assists management system owners in the effective, efficient, and well-deployed delivery and continued improvement of ORNL management systems.

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The ORNL Environmental Management System (EMS), which is registered to the ISO 14001 standard, falls into the PMBS under “excellence in laboratory operations”. Through the PBMS, the EMS defines the objectives and targets for the laboratory to achieve excellence in environmental performance and operations, while taking into consideration other strategic objectives of the laboratory. The EMS Management Review evaluates the effectiveness in meeting the environmental objectives and targets at the leadership level.

An example of an EMS Objective and Target as implemented through the PBMS is our aggressive two year waste reduction goal. This objective calls for the reduction of routine hazardous, radioactive and mixed waste generation by fifty percent over a two year period of time, to lessen the financial impact associated with the transition of responsibility for “Newly Generated Waste” from the DOE Office of Environmental Management to the DOE Office of Science. Goals are established through the Environmental Protection and Waste Services Division (EP&WSD) and through line organization business plans and performance assessment plans to achieve this reduction in waste generation. EP&WSD tracks and reports on waste generation and progress towards waste reduction goals on a monthly basis though the EP&WSD internal web site, but it is the line organization that is responsible for achieving waste reduction from routine operations. EP&WSD assists line organizations in developing meaningful and measurable goals and performs assessments of line organization performance and progress. When a waste generating organization is having difficulty in achieving their goals, EP&WSD will provide intervention to get the organization back on track. Division Directors of line organizations generating waste are held accountable to meeting EMS objectives and targets and are evaluated for such during the year end performance evaluation process.

Sustainable EMS: Performance Monitoring (*David J. Folse, Strategic Petroleum Reserve*)—Regardless of the EMS implemented; performance measurement, continuous improvement tracking and management review are critical areas for a sustainable system. As more federal facilities implement EMSs, the sharing of information about successful tools to enhance these areas becomes increasingly important. What tools are being used, how are they integrated, and what value do they contribute to the EMS and the business operation of the organization?

Part of the success of the Strategic Petroleum Reserve in maintaining 3rd Party Certification of its EMS for the past four years has been the integration of two information management tools. One provides views of progress toward performance indicator goals and one tracks corrective actions to resolution for continuous improvement. These tools are PBViews and the Assessment Tracking System (ATS), respectively. PBViews is a performance management software product that resides on the SPR main server, and the ATS is a compiled access database designed by the SPR that resides on a central site server.

PBViews provides a multilevel graphic view of each SPR performance measure, with the ability to input and track monthly progress through a visually simple display and easily accessed monthly results, trending charts and text explanations. The system automatically updates all measurement calculations and graphics based on simple input provided directly by the subject matter expert, eliminating errors and delays caused by duplication of input or transfer of raw data between individuals.

The Assessment Tracking System (ATS) allows easy input, tracking, and reporting of progress for all identified audit findings and opportunities for improvement. It documents dialog between the auditor and responsible party from planning to completion of a corrective action.

These systems are accessible by SPR personnel through their workstation PCs and via laptop or home PC via dial-up connection. As an added benefit, these tools allow the creating of views or classifications for individuals, departments, activities, or special interests by management, and they are available for use at many levels throughout the organization.

This presentation will provide a demonstration of these two systems, discuss their role in enhancing the success of the SPR EMS, and explain their value to long term system sustainability.

Performance Reporting to the Management Review Team (*Daniel McCollum, National Energy Technology Laboratory*)—Summary: The Environmental Management System (EMS) must have the ability to report to the senior management of the organization on the health of the EMS. NETL has developed a process for periodically reporting senior management the information they need to make appropriate decisions about and allocate resources to the EMS.

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Abstract: In 2001, the National Energy Technology Laboratory decided to pursue certification to ISO 14001:1996, Environmental Management Systems (EMS). NETL gained ISO 14001 certification in September 2003. Section 4.6 of the ISO 14001 standard requires that "The organization's top management shall, at intervals it determines, review the environmental management system, to ensure its continuing suitability, adequacy, and effectiveness."

Certification to the ISO 14001 standard is about conforming to the requirements of the standard. An organization can conform to the standard, but still have less than exemplary environmental performance. An effective EMS both conforms to requirements and performs to established objectives and targets. Good performance demonstrates continued improvement through reductions in the impacts to the environment. Since the organization's senior management is ultimately responsible for the performance of the entire organization it is important to have a process that periodically reports on the conformance and performance of the EMS and also documents this information and decisions that result.

NETL has developed a process by which objectives and targets are linked to each significant aspect. Each target has an environmental management plan which documents the activities which will be undertaken to support meeting the target. NETL also tracks internal and external audit findings, corrective and preventive actions, and other issues that are important to the operation of the EMS. Semi-annually, this information is presented to NETL senior management which consists of the Director, Deputy Director, and Office Directors by the EMS Representative. This senior management team is called the Management Review Team. During these semi-annual meetings, the MRT discusses this information, asks questions, entertains recommendations for improvements from the EMS representative, and then provides direction to the EMS Representative as to changes that are needed to improve EMS performance.

This presentation will present this process and a sample agenda and outcome of a Management Review Team meeting. The presentation will focus on the information that is most vital to the Management Review Team to aid in their decision-making.

EMAIL NOTE from D. McCollum: We done something in all of the areas mentioned below. Of note, we have been commended by our registrar for employee awareness and out corrective action tracking system. We are also doing a pretty good job of integrating our program elements with existing work processes. One thing that we have noticed, too, is that the ISO implementation has had a side benefit of bringing more discipline to other parts of the organization. For example, training - we built our own inhouse computer-based training process for ES&H training, used it to implement EMS, and now non-ES&H folks are wanting to use it. Similar things have happened in records management.

National Environmental Performance Track Program (Dan Fiorino, EPA Headquarters)—EPA launched the National Environmental Performance Track program in June 2000 as a way to recognize and encourage environmental performance that goes beyond legal requirements. To be eligible, facilities should have implemented an environmental management system (EMS), commit to measurable environmental results that exceed their requirements, work with the local community, and have a record of sustained compliance. In return, EPA and many states provide recognition, access to senior officials, opportunities for networking, faster and more flexible permitting, and reduced transaction costs. Currently some 350 facilities are members, including facilities from such federal agencies as DOE, NASA, the Coast Guard, and the Navy. This presentation will provide an overview of the program and its results and consider several lessons that have been learned regarding voluntary programs and the use of environmental management systems. The program offers excellent opportunities for federal facilities to be recognized for implementing an EMS and committing to measurable environmental results.

Breakout A - Managing your Legal & Other Requirements, and Assuring Compliance
March 8, Tuesday, 1:15-3:15 pm, Conf. Rm A

Using the Directives Process to Track EMS Requirements (Daniel McCollum, National Energy Technology Laboratory)—Summary: One of the requirements of an Environmental Management System is to identify and track legal and other requirements. This is being done through the existing Directives process at the National Energy Technology Laboratory.

Abstract: In 2001, the National Energy Technology Laboratory decided to pursue certification to ISO 14001:1996, Environmental Management Systems (EMS). NETL gained ISO 14001 certification in September 2003. Section 4.3.2 of the ISO 14001 standard requires the organization to "...establish and maintain a procedure to identify and have access to legal and other requirements to which the organization subscribes..."

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One of the philosophies used for NETL's implementation of ISO 14001 was to, where possible; use existing processes and procedures to support the EMS. This integration is efficient and effective since it is using existing infrastructure that have been proven. NETL used the existing Directives process, which was modeled after the Department of Energy's Directives process, as the vehicle for identifying and tracking EMS requirements.

The Directives process contains NETL's Tier I and II documents (orders, operating plans and procedures). The reference section each directive contains the legal and other requirements that are the drivers for that directive. These references can include: Codes of Federal Regulations, Department of Energy Orders, State regulations, local ordinances, and consensus standards upon which the directive is built. The directives are maintained in a tracking system which is used to compile a controlled document entitled "ES&H Focused Standards List." This list is a compilation of all legal and other requirements which drive the NETL ES&H program. The EMS requirements are part of this list, thus demonstrating the close integration with the existing Integrated Safety Management System and all ES&H programs.

This implementation strategy demonstrated the ability to modify an existing, stable process to meet ISO 14001/EMS requirements which was a cost-effective approach. This presentation will present the NETL Directives process and explain how legal and other requirements are identified and tracked for NETL's EMS.

Integration of Management Systems to Support Deployment of an Environmental Management System: (Glenn Hoenes, Pacific Northwest National Laboratory)—At PNNL, our standards-based management system (SBMS) translates complex and confusing regulatory requirements into a set of procedures, tools, and services to enable staff to do their work.

Standards-based management is composed of three major functions:

- **Requirements Management** identifies external requirements from regulators and other entities (including corporate offices) and facilitates the review for applicability with appropriate subject matter experts as well as identification of appropriate implementation methods.
- **Information Development and Integration** assists in the development and revision of policies, standards, and procedures used to implement new or revised external requirements. The primary responsibility of this function is to facilitate revision, consolidation, and modification of procedures to improve integration and provide more understandable and implementable procedures to research and development staff.
- **Operations and Administration** delivers and communicates new or revised information to staff and provides appropriate configuration control over the content of the system.

Requirements Management processes are key to the integration of an Environmental Management System approach that identifies laws, orders, regulatory requirements, corporate policy, and industry consensus standards applicable to the work of the Laboratory, but implemented through numerous functional areas. The applicable sets of external requirements and standards are translated into appropriate work controls owned by many functions or systems. Each management system (or functional area) is accountable for a specific set of requirements and for providing robust internal processes and procedures to implement them. Ownership and accountability of internal operating systems is the key to successful implementation of a robust Environmental Management System.

SBMS is a systematic approach that implements a management philosophy to integrate and emphasize environmental, health, and safety systems across all functions at PNNL. It accomplishes this by:

- establishing a hierarchy of information tailored to specific user needs
- implementing a process to ensure that only applicable external requirements are identified
- implementing a process for involving workers in the development and revision of Laboratory-level procedures applicable to their work
- delivering integrated information in a highly automated and user-friendly manner that supports its consistent implementation.

Flow Down of EMS Requirements to Contractors at NASA's Kennedy Space Center (Chris Spire, Kennedy Space Center)—The implementation of an Environmental Management System (EMS) at Federal Government facilities as required by Executive Order (EO) 13148 has been complicated by the fact that many of these facilities have a large contractor base. Often, the number of contractor employees exceeds the number of civil service employees at the site and these contractors are performing the majority of the tasks which can have a

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significant impact on the environment.

This presentation covers how this problem was addressed at NASA, Kennedy Space Center. The role of the contractor was established in the scope of the EMS and driven by the NASA EMS Requirement which is based on the ISO 14001 EMS Standard. The presentation will go on to look at the barriers to engaging the contractors in the EMS, the steps that were taken to bring them into the EMS development process and the results that were achieved at the conclusion of the EMS implementation.

Next Generation ISO 14001, the 2004 Revision (Susan L.K. Briggs, Battelle)—The International Standard on Environmental Management System Requirements, ISO 14001, has undergone revision and was reissued in November 2004. This revision focused on achieving two goals: (1) increased compatibility with the recently revised Quality Management System Standard, ISO 9001:2000, and (2) improved clarification to assist in understanding. The intent was to make changes that help users understand the requirements, thereby easing their implementation and enhancing environmental protection, without resulting in additional or diminished requirements.

The new standard contains subtle yet substantive changes to the requirements that companies must conform to when achieving third-party certification or self-declaring conformance. These changes are both administrative, in terms of format and structure, as well as technical, in terms of new or expanded requirements. For example, changes were made to enhance emphasis on regulatory compliance, external communications, and nonconformity. This paper presents the major changes embodied in the revised international standard, along with a synopsis of the implications of these changes for organizations who have an ISO14001 EMS.

Breakout B - Designing and Implementing an Integrated EMS
March 8, Tuesday, 1:15-3:15 pm, Conf Rm C

Crosswalk between Environmental Management Systems and the National Environmental Policy Act (Lucy Swartz, Battelle)—This presentation will provide a brief overview of the requirements for compliance with the National Environmental Policy Act (NEPA), followed by a detailed description of how NEPA compliance supports Environmental Management System (EMS) implementation and how EMS implementation supports NEPA compliance.

Overview

- NEPA requires preparation of an environmental impact statement for “major federal actions significantly affecting the quality of the human environment.”
 - The definition of “significance” is a key element of NEPA compliance.
- Mitigation and monitoring and public involvement are also components of NEPA compliance.

EMS-NEPA Crosswalk

- Both EMS and NEPA require an agency to identify potential environmental impacts of specific actions and require public involvement in those processes.
- A functioning EMS allows or facilitates the:
 - Determination of “significance” under NEPA
 - Preparation of site-wide NEPA documents
 - Development of a current environmental baseline (affected environment)
 - Assessment of direct, indirect, and cumulative impacts
 - Tracking and funding of mitigation and monitoring activities
 - Solution for incomplete and unavailable information
 - Method to improve environmental impact predictions
 - Community involvement

EMS does not replace NEPA, but is an umbrella under which NEPA compliance can become more efficient and effective.

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Deployment of the UT-Battelle EMS through the Standards Based Management System (Fay Frederick, Oak Ridge National

Laboratory)—The ORNL Environmental Management System (EMS) was successfully registered with International Organization of Standardization (ISO) 14001 standard for Environmental Management Systems in FY04 through an innovative process that utilized the UT-Battelle, LLC established Standards Based Management System (SBMS) as the basis for integration and implementation. The SBMS is the “bones” of the Laboratory-wide infrastructure for managing work/operations/compliance at ORNL.

By cross-walking the requirements of ISO 14001 Standard with the existing Management Systems, ORNL was able to identify those Management Systems that satisfied the ISO 14001 elements and was able to easily note any deficiencies. This process helped us integrate the ISO 14001 requirements into the ORNL Management Systems and cost-effectively pursue timely registration. Noted deficiencies were easily identified and subsequent changes to the appropriate Management Systems were made and distributed to ORNL staff.

This presentation summarizes the successful UT-Battelle approach to ISO 14001 registration and highlights.

Defining and Implementing an Environmental Management System that Aligns with Environmental Aspects of a Large Complex Facility

Fully Joined with Integrated Safety Management (ISM) (Bruce Angle, Idaho National Laboratory)—The Idaho National Engineering and Environmental Laboratory (INEEL) operates nuclear and non-nuclear facilities located in southeast Idaho for the U.S. Department of Energy and is responsible for conducting research and development, spent nuclear fuel management, waste management, and environmental restoration. The INEEL generates radioactive, hazardous, mixed, and industrial wastes, and releases effluents to the air, water, and soil in the course of conducting business. We developed an Environmental Management System (EMS) founded on the proper identification and understanding of these activities and the environmental aspects and environmental impacts associated with them.

The EMS integrates environmental protection, pollution prevention, and regulatory compliance into work planning and execution throughout all work areas as a function of the Integrated Safety Management System (ISMS). We developed the EMS program elements to integrate with the five core functions of the ISMS and the elements of the ISO 14001 standard. The EMS provides effective protection to workers, the surrounding communities and the environment through implementation of the ISMS, at the same time meeting operating objectives and compliance with regulations.

The presentation highlights our approach to designing and implementing a work activity-based environmental management system that aligns with environmental aspects of the site and integrates with Integrated Safety Management (ISM) for worker safety and environmental protection (e.g., Work Control).

Using Your EMS: Attaining Integrated Membership in State and Federal Incentive Programs (William Bozzo, Strategic Petroleum

Reserve)—The EPA Performance Track Program and a number of state programs offer incentives to high performing facilities with functioning Environmental Management Systems (EMS). To date, participation in these performance plus programs has been predominated by the private sector, as has been the case for facilities with demonstrated EMSs. With Executive Order 13148 mandating that federal facilities implement EMSs, many more federal facilities will have demonstrated EMSs in place by the end of 2005, and become eligible to participate in these performance plus state and federal incentives programs. What are the requirements to participate, what are the benefits to participation, and what are the costs to implementation? Are these programs a means of achieving a return on investment in your EMS?

The Strategic Petroleum Reserve has attained 3rd Party Certification of its EMS, membership in the EPA Performance Track Program, and National Leader status in the Clean Texas Cleaner World program. A bootstrap approach was utilized to build each succeeding program on the previous so that the program processes flow together in an integrated manner. The resulting suite of environmental performance systems and programs has proved relatively inexpensive to implement and maintain, while providing substantial tangible and intangible benefits.

This presentation will share the SPR's approach to implementing its EMS and how it has used that EMS along with allied activities to build a positive relationship with state and federal regulators through their performance plus programs. Although the incentives offered by these programs are still evolving, the SPR has received a number of benefits from the agencies. Moreover, the SPR's associated environmental commitments have served to focus management attention on environmental improvement enabling achievement of positive results well beyond those expected. These results will be discussed along with the program costs.

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Plenary Session - State and Federal EMS Programs

March 8, Tuesday, 3:45-5:30 pm, Conf. Rm G

EPA Strategy on EMS & Regulatory Programs (M. Martin, EPA Region 5)—For many years EPA has been involved in a wide range of activities designed to facilitate the adoption of EMS. These efforts have primarily been within our voluntary programs that include National Environmental Performance Track, Office of Water's EMS program for local Government, Design for the Environment, and the Sector Strategies Program. In April 2004, EPA finalized a strategy, EPA Strategy for Determining the Role of Environmental Management Systems in Regulatory Programs, which is a roadmap for exploring linkages between EMSs and regulatory programs. The Strategy identifies policy areas in which EPA would like to experiment with EMSs in the regulatory context and also provides direction for our collaboration with state regulatory agencies that are already linking rule development and permitting to EMS.

This session will provide an overview of EPA's Strategy and explore what policy issues are being tested through experiments with state agencies and voluntary programs and activities.

Interagency EMS Work Group Initiatives (W. Garvey, EPA Headquarters)—

Breakout B - Setting Objective & Targets, Establishing Programs and Monitoring Progress

March 8, Tuesday, 9:45-11:45 am, Conf Rm C

DOE Response to President's Management Council's Environmental Compliance Management Improvement Initiative (S. Woodbury, DOE Headquarters EH-43)—

Plenary Session - The DOE Perspective on EMS

March 9, Wednesday, 8:00-9:00 am, Conf. Rm G

The DOE Perspective on EMS – Keynote Speaker (Andy Lawrence, Keynote Speaker, DOE Deputy Assistant Secretary for Environment)—

Breakout A - Lessons Learned on Maintaining and Sustaining your EMS

March 9, Wednesday, 9:15-10:30 am, Conf Rm A(

Summary of Lessons Learned (Elizabeth Zimmerman, Pacific Northwest National Laboratory)—

- Approaches that work and don't work for:
- Aspects identification
- Compliance assurance and evaluating
- Objectives and targets
- Performance analysis
- Communication
- Internal EMS auditing

Specifics on keys to success, e.g.,

- Senior management commitment and involvement
- Project approach
- Line involvement
- Registrar selection.
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Lessons Learned from a Maturing EMS (George Goode and John Selva, Brookhaven National Laboratory)—

- 1) BNL's EMS History
- 2) Program deployment strategies
- 3) Effectiveness of Line involvement

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- 4) The right tools (Review of most effective tools in identifying Significant Environmental Aspects, Use of existing Procedures, Training)
- 5) Then and Now
 - a. Policy Communication - Competence, Training and Awareness
 - b. Management Involvement
 - c. Audit Findings
 - d. Management reviews

Breakout B - Case Studies of EMS Training and Awareness Programs
March 9, Wednesday, 9:15-10:30 am, Conf Rm C

EMS Training: Getting the Message to Employees (*Daniel McCollum, National Energy Technology Laboratory*)—Summary: A variety of educational and promotional tools can be used to educate the general employee workforce on the principles of the Environmental Management System. The effectiveness of these various tools is discussed in this presentation.

Abstract: In 2001, the National Energy Technology Laboratory decided to pursue certification to ISO 14001:1996, Environmental Management Systems (EMS). During the next two years, various educational tools were used to communicate to employees the principles behind the EMS and the requirements of ISO 14001. The tools used to communicate this information included: computer-based training, mouse pads, badge cards, contests, intranet web pages and postings, all employees meetings, staff meeting, and internal audits. NETL gained ISO 14001 certification in September 2003.

As expected, each of these individual tools was effective at different levels of the organization and to different audiences. Also, they were different in their overall effectiveness and efficiency. For example, the computer-based training was able to be delivered to 98% of the all employees easily so it was a very efficient tool. The training also provide for competence testing of all employees who took the training which helped to ensure that the training was effective as well. The badge cards were inexpensive tool, however, the effectiveness was very limited and badges is typically only referred to by the employee during audits to help them recall EMS principles.

This presentation will present all of the tools that were used and discuss their efficiency and effectiveness. The presentation will conclude with lessons learned that have been gained by this experience that can be used by other organizations when implementing and EMS.

EMS All-Employee Awareness Training at LANL (*Dennis L. Hjeresen, Los Alamos National Laboratory*)—Los Alamos has committed to ISO 14001 certification of its Environmental Management System (EMS). A key element of ISO 14001 is awareness, training and competence. Los Alamos is developing three EMS training modules: general employee awareness training, manager training in the effective use and maintenance of the EMS and audit training. These training modules are all based on a cost-effective software solution that allows web-based dissemination of the training, easy modification of course content and linkages to Lab-wide training record systems.

Plenary Session - Panel Discussion: Internal and External EMS Communication
March 9, Wednesday, 10:30-11:30 am, Conf Rm G

Internal and External EMS Communication (*Rachel Damewood, Idaho National Laboratory; Alice Ikenberry, Pacific Northwest National Laboratory; Gretchen Farnung, Battelle Science & Technology International; Jeanne D'Ascoli, Brookhaven National Laboratory; Kathy Carney, Oak Ridge National Laboratory*)—Critical to the success of any Environmental Management Systems are communications, internal and external, proactive and reactive. A panel of Battelle staff members will speak on the wide variety of communications that are necessary to manage and sustain an EMS, each emphasizing a different aspect of communications. These include routine communiqués to raise awareness and communicate requirements to staff, visiting scientists and contractors. A wide variety of external communications will also be covered, ranging from informing interested parties of both routine and volatile environmental issues, public notifications and reporting, and community involvement and outreach. Innovative methods, strategies, and approaches in each topical area will be shared.

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DEMONSTRATION

March 9, Wednesday, 11:30-12:00 (noon), Conf Rm A

Web-Based Environmental Information Management System (Robert S. Sheneman, Princeton Plasma Physics Laboratory)—In this presentation, Mr. Sheneman will demonstrate a new internet-based environmental information management system (EMIS) being implemented at the Princeton Plasma Physics Laboratory (PPPL). This highly flexible system provides a single platform to integrate compliance management activities by linking requirements, task assignments, scheduled activities and their associated regulatory drivers, implementing procedures and the resulting data. Direct hyperlinks can be provided to the applicable State or Federal regulations and weekly regulatory update notifications can be customized for each user. Advanced customized data calculations (e.g. wastewater loading or air emission monitoring) can be built by the user. Reporting capabilities include data reports, task assignments, activity schedules and system attribute reporting. The system implemented at PPPL includes aspects of the environmental compliance (permitting, monitoring reporting, etc.), environmental restoration, hazardous and radioactive waste management, and pollution prevention programs. A field deployable PDA-based application is expected from the vendor in 2005.

Breakout A - Assessing your EMS Effectiveness and Environmental Performance

March 9, Wednesday, 1:00-2:30 pm, Conf Rm C

Internal Auditing of Your EMS and Regulatory Compliance Status (Elizabeth Zimmerman, Pacific Northwest National Laboratory)—

Lessons learned and keys to success, such as:

- Auditing procedures
- Audit planning and preparation
- Clarifying respective roles and responsibilities
- Auditor training
- Audit team mix (environmental, quality, member of organization vs. independent parties, sharing auditors across a corporation)
- Use of checklists
- Reporting: In and out briefs and written reports (executive summaries and checklists)
- Audit methods for compliance assessments

Sustainable EMS: Corrective Action Tracking System (David J. Folsie Strategic Petroleum Reserve)—Regardless of the EMS implemented; performance measurement, continuous improvement tracking and management review are critical areas for a sustainable system. As more federal facilities implement EMSs, the sharing of information about successful tools to enhance these areas becomes increasingly important. What tools are being used, how are they integrated, and what value do they contribute to the EMS and the business operation of the organization?

Part of the success of the Strategic Petroleum Reserve in maintaining 3rd Party Certification of its EMS for the past four years has been the integration of two information management tools. One provides views of progress toward performance indicator goals and one tracks corrective actions to resolution for continuous improvement. These tools are PBViews and the Assessment Tracking System (ATS), respectively. PBViews is a performance management software product that resides on the SPR main server, and the ATS is a compiled access database designed by the SPR that resides on a central site server.

PBViews provides a multilevel graphic view of each SPR performance measure, with the ability to input and track monthly progress through a visually simple display and easily accessed monthly results, trending charts and text explanations. The system automatically updates all measurement calculations and graphics based on simple input provided directly by the subject matter expert, eliminating errors and delays caused by duplication of input or transfer of raw data between individuals.

The Assessment Tracking System (ATS) allows easy input, tracking, and reporting of progress for all identified audit findings and opportunities for improvement. It documents dialog between the auditor and responsible party from planning to completion of a corrective action.

These systems are accessible by SPR personnel through their workstation PCs and via laptop or home PC via dial-up connection. As an

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added benefit, these tools allow the creating of views or classifications for individuals, departments, activities, or special interests by management, and they are available for use at many levels throughout the organization.

This presentation will provide a demonstration of these two systems, discuss their role in enhancing the success of the SPR EMS, and explain their value to long term system sustainability.

How To Get Management's Attention When You're Not the Problem (Bruce Angle, Idaho National Laboratory)—An account of issues associated with demonstrating conformance with the Management Review requirements of the ISO 14001 Environmental Management System Standard at a large government-owned, contractor-operated facility, and the ways in which the issues were resolved. The ISO 14001 Standard requires that an organization's top management review the environmental management system to ensure its continuing suitability, adequacy and effectiveness and that the review be documented. Obtaining an adequate management review is problematic, because management tends to be focused on resolving the day-to-day operating problems of the facility. If the Environmental Management System is not having problems, and major environmental problems are not being discovered, then management would prefer to focus elsewhere. This presentation discusses the various means we used to facilitate and document management review to the satisfaction of our registrar.

(Breakout B) Pollution Prevention (P2) Programs – the Cornerstone of an EMS
March 9, Wednesday, 1:00-2:30 pm, Conf Rm A

P2 Program Integration with the LANL EMS (Dennis L. Hjeresen, Los Alamos National Laboratory)—As LANL implements its EMS it is taking several steps to merge the EMS and P2 programs. In this model, P2 will become an integrated tool in the ongoing use of the EMS. First, the LANL Integrated Work Management System was modified to require preventive actions in the process of work approval. Second, P2 requirements were structured into project approval processes. Third, pollution prevention opportunity assessment tools are being used to support EMS environmental aspect identification at the Division level. Fourth, financial incentives such as the Generator Set Aside Fund (tax on waste) program are being restructured to support prevention opportunities identified by Divisions during EMS implementation. Finally, Lab-wide objectives and targets with P2 requirements are being extended to the Division level.

Recycling and Affirmative Procurement Best Practices within DOE (Al Villareal, Sandia National Laboratory)—We have institutionalized some P2 practices such as affirmative procurement, green construction procurement, construction waste management recycling using contract specifications, recycling in general, etc.

Implementation and operation of NREL's EMS and Sustainable NREL program - via webcast (Denise Rayborn, National Renewable Energy Laboratory)—The National Renewable Energy Laboratory (NREL), a Department of Energy Lab managed by MRI and Battelle, began Environmental Management System (EMS) implementation in the '90's. The "Sustainable NREL" program was later launched to promote sustainability throughout the operations and management of the laboratory. Combined efforts have resulted in national and community recognition for NREL's environmental stewardship efforts.

Plenary Session - DOE Panel Discussion: Self Declaration & Reporting Conformance to DOE O 450.1
March 9, Wednesday, 3:00-4:30 pm, Conf Rm G

Self Declaration & Reporting Conformance to DOE O 450.1 (Steven Woodbury, DOE Headquarters EH-43 and DOE Regional Representatives)—