Department of Energy
Washington, DC 20585

September 5, 2000

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

Enclosed is the Department's response to your July 20, 2000, letter requesting additional information or clarification on presentations and material submitted at the Board's public meeting on May 31, 2000. If you have any questions concerning this information, please do not hesitate to contact me at (202) 586-1418.

Sincerely,

Theodore A. Wyka
Director, Safety Management
Implementation Team

Enclosure

cc:
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BOARD QUESTIONS AND DEPARTMENT RESPONSES

ISM Topic Area: Facility Status

Q. *The **Department of Energy (DOE) Institutionalization Workshop Results Summary** report submitted for the public record provided several options for institutionalizing the integrating and Integrated Safety Management (ISM) championing function performed by the Safety Management Implementation Team (SMIT). Once a decision has been made as to which option will be implemented, what process or mechanism will be used to ensure that the vital function is institutionalized such that it continues through administration changes?*

A. In June 2000, the Deputy Secretary announced that the Office of Environment, Safety and Health (EH) would take over the role of corporate champion for ISM when the SMIT is retired. The timing and details of transition from SMIT leadership have not been finalized.

Regardless of who serves as the corporate ISM champion, the Department realizes that ISM institutionalization must be built upon strong line management ownership and involvement, as it is the line managers who are responsible for safety. For sustained effectiveness in fulfilling the overall ISM objective, the Department recognizes that ISM institutionalization must address both the objective of being safe (protecting the workers, the public, and the environment) and doing work (accomplishing mission objectives efficiently and productively).

The Chief Operating Officers (COOs) are responsible for the overall effective implementation of ISM and continuous performance improvement within their program offices. The COOs Council is designed to serve as a forum for discussing implementation results and challenges, and for refining line management's policies for implementing and improving ISM. The institutionalization of the ISM championing functions will be documented in the next revision of the Department's Functions, Responsibilities and Authorities Manual.

Q. *It appears that Lawrence Livermore National Laboratory (LLNL) is at risk of not meeting the September 2000 implementation goal. What is being done to accelerate its implementation?*

A. Like many sites that are completing ISM verifications during the fourth quarter of Fiscal Year 2000, LLNL has some risk of not meeting the September 2000 goal. However, their progress in implementing ISM is sufficient to warrant a September 2000 verification. In May 2000, a DOE verification team identified weaknesses in the identification of hazards and establishment of appropriate controls at the facility and activity level. A second verification, originally planned for June 2000, to complete the Phase I/II reviews at the directorate levels was delayed to provide time to improve systemic weaknesses. A path forward was established in May 2000 to define the needed work scope and deliverables.

Accelerated implementation is taking place through a project approach with substantially greater resources. LLNL has committed to substantial permanent staff increases within its Hazards Control Department. LLNL recently hired a Branch Chief from the Nuclear Regulatory Commission (NRC) as Group Leader for this Department. Other permanent staff hires are in progress. In the interim, LLNL and contract resources are accomplishing the path forward under LLNL's leadership

LLNL is in the process of accomplishing a series of actions to develop, approve, and implement a Hazard Identification/Hazard Control process for 20 hazardous facilities. This set of facilities consists of at least two facilities from each major hazard type at LLNL and at least one facility from each of the 12 Directorates. A plan for implementation and monitoring/assessment for the remaining hazardous facilities is scheduled to be in place by September for the verification team's review. In addition, safety bases for those facilities with expired safety basis envelopes (hazardous and general industry facilities) are scheduled to be updated, reviewed, and approved as required by LLNL's five year requirement. Finally, updates for other General Industry Facilities are planned to be completed as resources permit.

Significant emphasis has been placed upon activity level work planning and control, change control and configuration management, and hazardous materials/chemical inventory control processes. Improved clarity between institutional and directorate level responsibilities for the establishment of implementing mechanisms has been achieved. The resulting gap analyses for the institutional level and directorate levels at LLNL should reflect more accurately the current status when completed in September.

The resources applied and progress made to date are appropriate for achieving implementation by September 2000, provided the results achieve an adequate benchmark of implementation for Hazards Identification/Hazards Control within the representative facilities. The determination of successful initial ISM implementation is based on an ongoing LLNL assessment and the September 2000 DOE ISM System Verification.

Q. *On May 19, 2000, the Secretary announced a new initiative designed to boost contractor performance management throughout DOE. The program emphasizes the use of performance measures in contracts to determine performance fees. How does this new initiative support ISM implementation and the use of performance measures associated with the Department of Energy Acquisition Regulations (DEAR) clause?*

A. On an annual basis, DOE Management and Operating (M&O) contractors, Management and Integrating (M&I) contractors, and other facility operating contractors are required to review and update, for DOE approval, their ES&H performance objectives, performance measures, and commitments consistent with and in response to DOE's program and budget execution guidance (DEAR 970.5204-2). Site- and facility-specific performance measures are

necessary to determine conditional payment of fee, profit, or incentives (DEAR 970.5204-86).

The basic set of performance measures for all DOE contractors that affect fee determination stems from the 'minimum requirements for Environment, Safety and Health (ES&H) program' [reference paragraph (a), DEAR 970.5204-86], and the Department's zero tolerance policy for catastrophic events. The basic set of ES&H performance measures consists of: 1) compliance with applicable laws, regulations, and DOE directives; 2) implementation of the DOE approved ISM System; 3) accomplishment of ES&H performance (work) commitments, and 4) prevention of catastrophic events.

If a contractor fails to successfully meet these measures, then all fee, profit and incentives are at risk. The contractor is expected to achieve these measures with available funding consistent with program and budget execution guidance.

The Office of Environment, Safety and Health, in conjunction with the Office of Procurement, has drafted a new conditional payment of fee contact clause intended to augment the current clause. The new provisions provide more specificity regarding fee reductions for poor ES&H performance. The contract clause is an action item from the Secretary's contractor accountability initiative and is consistent with the performance measure framework outlined above. The Department plans to finalize the DOE-wide review by October 2000 and proceed to interim rulemaking (i.e., promulgation of the revised conditional payment of fee clause) immediately thereafter.

Q. *In DOE's response to the last set of questions on ISM performance measures from the Board's public meeting, it was stated that the performance measures would be revised to improve their usefulness. What is the plan for revising the measures, who is involved, and what is the time frame?*

A. The EH Office of Performance Assessment and Analysis (EH-3) is now the designated lead for ISM performance measures. The path forward has not been finalized. The ISM Performance Measures Working Group (PMWG), established by the SMIT Director, last met on July 19, 2000. The PMWG is a cross-disciplinary group that includes both DOE and contractor representatives from the major DOE organizations. Current plans are for the PMWG to continue to advise and assist EH-3 with the ongoing efforts to mature the current set of ISM performance measures. The Department intends to keep the Board appraised of emerging plans in this area.

Q. *What have been the results of using the current performance measures? It is not clear how the current set will provide information on the effectiveness of ISM. Can you explain what a variance from the current control band on each of the measures will tell you about a site's ISM program?*

A. The objective of the performance measures report is to determine whether the ISM objective of "doing work safely" is being achieved. On December 3, 1999, the Deputy Secretary established the following measures as the initial set of ISM performance measures:

- Total Recordable Case Rate
- Occupational Safety and Health Cost Index
- Reportable Occurrences of Releases to the Environment
- Estimated Radiation Doses to the Public
- Worker Radiation Dose

The second performance measures report was issued on August 24, 2000. A copy of this report is attached. The report provides three views for each performance measure: 1) DOE-wide performance trend, 2) relative contribution by the Program Secretarial Officer (PSO) to the current DOE-wide performance, and 3) current performance by the PSO compared to historical performance. DOE-wide performance is shown on a control chart, a statistical tool that allows users to view data and determine if there have been any significant system changes effecting the results during the time interval reported.

The Department continues to refine the presentation of the existing measures to make them more useful to DOE senior managers. For example, in the most recent report, the performance data was provided for each Program Secretarial Officer (PSO) rather than for each Lead PSO. Additional refinements are under consideration. The PSOs are responsible and accountable for safety performance at their assigned sites.

The second issuance of the ISM performance measures report contains three changes to the data presentation: 1) Relative contributions to DOE-wide performance is broken down by PSO rather than by Lead PSO, 2) Absolute magnitude of measures for the current time-period is explicitly provided, and 3) DOE corporate staff leads or Subject Matter Experts (SMEs) within EH are identified for each measure. The Field Management Council (FMC) requested the breakout of data by PSO.

It is clear that additional evolution needs to occur on the set of measures as well as how they are being used. The current set of performance measures does not provide direct traceability to ISM. This was recognized at the outset. In order to move forward in using the performance measures to evaluate whether the ISM objective of "doing work safely" is being achieved, the FMC will need to consider DOE corporate performance objectives. The EH Office of Performance Assessment and Analysis (EH-3) has the lead in this effort.

Experience with performance measures indicates that development and effective use of a mature set of measures requires a multiple year commitment. As directed by the Deputy Secretary, the set of ISM performance measures and the presentation of this information is expected to continue to evolve as experience is gained.

ISM Topic Area: Lessons Learned

Q. *The SMIT Director sent a memorandum to the field emphasizing several points relative to lessons learned. Have any actions been taken in response to this memorandum?*

A. Environment, Safety, and Health. The new EH Office of Performance Assessment and Analysis (EH-3) has been assigned the Department lead for DOE-wide lessons learned. EH-3 has reviewed the existing lessons learned program and is planning to revise the breadth and depth of the program. EH-3 projects that a formal DOE program plan will be available in October 2000. The current efforts of Defense Programs and Environmental Management are provided below. These efforts will be integrated into the overall lessons learned program.

Defense Programs. Defense Programs (DP) has taken no additional actions in response to this memorandum. The DP plans for enhancing lesson-learned effectiveness, as described below in the following responses, were already consistent with the intent of the SMIT Director's memo.

Environmental Management. In response to the February 18, 2000, memorandum, the Office of Environmental Management (EM) is modifying its program to meet the guidelines of the revised DOE Standard on Lessons Learned Programs. Complementary to the existing DOE Lessons Learned program, EM has also developed its own program, as the Departmental effort was in its infancy. The EM program places enhanced emphasis on EM and its contractor personnel to capture and use lessons learned information and to promote sharing of knowledge, expertise, and good work practices to reduce risk and cost, and to improve safety performance by avoiding previous shortcomings.

EM continues to highlight and evaluate lessons learned programs in a variety of ways, for example:

- Inclusion of lessons learned activities as part of independent program and project reviews;
- Mid-year and year-end program reviews include sessions where lessons learned information is shared;
- Lessons learned language is incorporated into some contractor performance criteria;
- EM guidance documents and plans reflect lessons learned;
- The EM Functions, Responsibilities and Authorities Manual (FRAM) addresses lessons learned responsibilities;
- Forums are also provided to exchange lessons learned information, such as Technical Information Exchange Workshop and D&D committee meetings;
- EM management offers on-the-spot awards as an incentive to personnel to utilize lessons learned information in program activities; and
- EM management support and involvement is reflected in a developing effort by EM-5 to focus on using lessons learned from one site to another.

Q. *The response to the Board's previous questions on how DOE-Headquarters measures the effectiveness of the lessons learned program for the individual sites and across the complex was not very specific. It stated only that the responsibility resides in the program and field offices. Please provide more specifics on what organization or individuals in DOE-Headquarters are responsible for the complex-wide program and how that office evaluates and ensures the effectiveness of lessons learned.*

A. Environment, Safety and Health. EH has the corporate lead for the DOE lessons learned program. EH has assigned the leadership role to Dr. Neal Goldenberg, the Deputy Assistant Secretary for Performance Assessment and Analysis. Dr. Goldenberg has assigned the program implementation to his technical advisor, Ms. Mari-Josette Campagnone, who is supported by lead engineer, Mr. Dan Guzy. The measures for program effectiveness are under development and are intended to be part of the performance measures program as they relate to safety processes. The current efforts of Defense Programs and Environmental Management are provided below.

Defense Programs. The Office of Technical Support (DP-45) coordinates the DP lessons learned program under the direction of DP's Chief Operating Officer (DP-3), Mr. Robert DeGrasse. Effectiveness of lessons learned is the responsibility of each program office (line managers). Improved coordination is anticipated with the formation of a DP office of oversight in the near future.

Environmental Management. Ms. Mary McCune, Office of Program Integration and Disposition (EM-22), is the EM Lessons Learned Program Manager. Ms. McCune has the lead role and responsibility for the overall program, which includes development, implementation and integration. In addition, EM has identified lessons learned roles and responsibilities of management and line personnel in the EM FRAM. A technical support role is also assigned to the EM Office of Safety, Health and Security (EM-5) related to Safety and Health lessons learned. The EM lessons learned program information is regularly reflected in EM-5's monthly Site Safety Profiles, which are distributed to EM headquarters executive management and coordinated with field elements. Criteria have been developed and are being used to evaluate EM site lessons learned programs. Programs are evaluated on program effectiveness; sharing of lessons learned information across the DOE complex; links with intra-site elements; use of information in work planning/execution activities; and links with EM and/or the DOE Lessons Learned Program List Server.

Q. *The inadequate involvement of management at all levels in institutionalizing an effective lessons learned program is stressed in a letter from the Board dated May 25, 2000, in DOE's Office of Independent Oversight's (EH-2)* ***Topical Analysis Report on Lessons Learned****, and in the* ***DOE Verification Report on Effectiveness of Implementation of the Process of Issue Resolution****, completed as a deliverable under Recommendation 98-1. What steps will be taken to accelerate management involvement in the lessons learned program and to improve its effectiveness?*

A. Environment, Safety, and Health. The EH Office of Performance Assessment and Analysis (EH-3) is working with the DOE-Headquarters line managers and the Energy Facilities Contractors Group (EFCOG) to bring lessons learned data to the senior operating contractor management. EH-3 anticipates completion of a Memorandum of Understanding (MOU) with EFCOG by October 1, 2000. EH-3 plans to include lessons learned in the ongoing site analysis performance reviews as a vehicle for providing input to field management. The current efforts of Defense Programs and Environmental Management are provided below.

Defense Programs. Efforts to improve the NNSA/DP Corporate Lesson Learned Program are under way. Historically, DP Lessons Learned programs have been localized and somewhat isolated from each other in terms of program processes and implementation in general. There has been and continues to be support from DP headquarters for Lessons Learned programs including involvement in the DOE Lessons Learned Program sponsored by EH. This participation stems from the DOE Lessons Learned Process Improvement Team, which originated in DP, and later became known as the Society for Effective Lessons Learned Sharing (SELLS) organization. A DP-45 representative is currently an active Executive Committee Member in the steering organization for SELLS. List servers are continuously employed to communicate internal and externally generated Lessons Learned throughout the DP/DOE complex, as well as SELLS membership business. The Lessons Learned List Server subscription level is over 400 Federal and Contractor personnel across the complex. Each site has a "LL coordinator" who functions as the point of contact for SELLS and Lessons Learned dissemination as necessary. Conference calls are held biweekly alternating between the full SELLS membership and the Executive Committee. SELLS Lessons Learned Workshops are held in the Spring and Fall of each year. The next meeting is scheduled for October 17-19, 2000 in Boston, MA. (See website: http://tis.eh.doe.gov/ll)

The current DP Corporate Lessons Learned Program is being enhanced to better support headquarters management and staff located in the Germantown and Forrestal offices and to facilitate Lessons Learned access, integration and dissemination for all types of Lessons Learned. Some of the Program goals include:

- Creation and facilitation of an electronic process whereby all DP management levels understand, access, utilize (incorporate) Lessons Learned into daily tasks,
- Capability to share and deliver Lessons Learned to headquarters (and eventually DP Federal Field) staff via customized (user-defined) internet push technology,
- Utilization of Lessons Learned from DOE internal and external sources.

The DP Corporate Lessons Learned Program is being developed in three phases, Research and Scoping, Program Development, and Implementation. Research and scoping is essentially completed. Phase II is underway and involves developing pilot portfolios of Lessons Learned that are user-selected from available forms and types of software to automatically deliver the Lessons Learned to a customer desktop. Phase III is expected to begin within the next 6-9 months. Customer feedback and improvement is being applied in

the development of this program. To date, 42 different internal and external Lessons Learned programs have been reviewed to capture the best features of each for incorporation into DP's Program.

Environmental Management. The EM Lessons Learned Program Manager has been conducting one-on-one meetings with all EM Headquarters managers to discuss and advocate the EM lessons learned program. Discussions include each office's responsibilities, level of involvement, program needs and improvements, EM field oversight, and guidelines for participation. EM is also working with the EM field sites to eliminate the barriers of sharing lessons learned between field elements. An EM lessons learned program guidance document is being developed to further reinforce management commitment to all program elements. An EM-wide working group is being established to develop this guidance and to assist with implementation. In addition, EM-5 monitors, assesses, and evaluates safety performance for all EM sites and reports on safety performance to management via monthly Site Safety Profiles. EM-5 regularly meets with responsible managers to facilitate issue identification and resolution. Activities requiring management attention are discussed at staff meetings and tracked through resolution.

Q. *What is the role, if any, of the Secretary's Safety Council or Field Management Council in reinforcing the need for greater management involvement in the lessons learned program?*

A. The FMC plans to meet periodically with the Department lead on lessons learned to discuss the effectiveness of the Department's lessons learned program. Periodic reports and briefings on lessons learned effectiveness are expected to be provided to the FMC. The FMC's attention in this area focuses primarily on two items: 1) are lessons learned consistently identified and shared, and 2) do organizations substantively evaluate and effectively take actions on the lessons learned that have been identified and shared. The FMC will emphasize management involvement.

In addition, the Chief Operating Officers (COOs), as ISM champions for the line program offices, provide oversight and direction on the implementation of lessons learned programs throughout their program offices and associated field offices.

Q. *What steps have been taken in the complex to link corrective action programs to the lessons learned program?*

A. Environment, Safety and Health. As noted earlier, the Deputy Assistant Secretary for Performance Assessment and Analysis (EH-3) has been assigned the corporate lead for the development of the Department's lessons learned program. It was further noted that this Office is in the process of developing the methodology for evaluating the effectiveness of implementing the lessons learned program. Corrective actions and lessons learned are inherently bound together. In addition, as noted above, EH-3 is also responsible for developing performance measures to indicate the effectiveness of ISM, an important

component of which encompasses corrective actions. Thus, by placing responsibility for programmatic development of lessons learned, ISM performance measures, and corrective actions under one Deputy Assistant Secretary, the Department is focusing responsibility and accountability. The Office of Oversight (EH-2) is supporting EH-3 with field evaluations as requested. The current efforts of Defense Programs and Environmental Management are provided below.

Defense Programs: DP program offices actively review occurrence reports and other indicators of current operating experience, keeping management actively involved in the application of lessons learned to current operations. Additionally, DP program offices conduct regularly scheduled conference calls with the field during which ISM, Conduct of Operations, operational events, and so forth, are discussed. As an example of DP, linking corrective actions to the lessons learned, DP management directed action by the field based on a June 2000 memo from DP-1 to DP sites regarding recent Type "A" Investigation results, directing inspection of mechanical fittings and the use of teflon in radiation environments. The current process can be enhanced with added formality.

Environmental Management. This is an area that warrants enhanced focus by both EM and DOE as a whole. While a variety of EM field sites incorporate lessons learned into their corrective actions (e.g., Corrective Action Tracking System - CATS), improvements can be realized in this area. EM is looking forward to addressing this situation at a corporate level while working with cross-organizational groups such as the SMIT. Also, EM is exploring prudent methods and approaches for incorporating this linkage as part of planned guidance.

ISM Topic Area: Recommendation 98-1

Q. *What has been the response to the first Secretary's Quarterly Report on the Corrective Action Tracking System (CATS)? Describe the actions being taken to ensure the accuracy of the data.*

A. Three Corrective Action Tracking System (CATS) Quarterly Reports have been forwarded to the Office of the Secretary and DOE senior managers to date. These reports have prompted senior management (including the Deputy Secretary) to ask questions and hold subordinates accountable for assessing and completing their corrective actions. This report has been discussed at senior management forums such as the FMC and the Field Managers meetings. This practice is expected to continue.

The line is responsible for the accuracy of the system data. Line management is responsible in its operational oversight capacity to ensure the cognizant line managers are maintaining current status.

Q. *How will a corrective action plan be developed for the issues identified in the implementation report that was recently issued? Will they be tracked in the CATS, and if not, how will they be tracked to closure?*

A. The Corrective Action Plan (CAP) for the May 31, 2000 report was developed by the Integrated Corrective Action Management (I-CAM) team, and signed by the SMIT Director on July 18, 2000. A copy of the CAP is attached. The two main issues addressed in the CAP are: 1) the need to upgrade line process descriptions, including Functions, Authorities and Responsibilities documents and Quality Assurance Plans (QAPs), to reflect the 98-1 corrective action process defined in the Department's Quality Assurance Order, and 2) the need to link the corrective action process with the lessons learned process. The SMIT Director is responsible for tracking the CAP to closure and is following up on the open issues with the program and field offices. This CAP is expected to close in the near-term. If this expectation is not met, the SMIT Director plans to track incomplete actions in the CATS.

Q. *In response to a question from the Board about the Integrated Corrective Action Management (I-CAM) team and CATS at the January ISM meeting, it was stated that the Director of the SMIT "will ensure that this central coordinating role is institutionalized ... to ensure the corrective action process functions as needed." In the intervening 4 months, what steps have been taken to clarify and institutionalize this function?*

A. The I-CAM has developed a draft charter for the team's 'institutionalization'. It is envisioned that the charter will be finalized and approved upon completion of the corrective actions rising from the issues identified in the May 31, 2000 verification report. The institutionalization of the I-CAM is proceeding in coordination with the institutionalization of ISM.

Q. *What further steps have been taken to regularize and institutionalize the development of corrective action plans for issues that involve multiple sites and multiple Cognizant Secretarial Officers?*

A. Additional implementing information and recommended clarifications are being included in the Integrated Safety Management System Guide. The revised Guide is currently in final draft and should be approved within the next month. The Office of Oversight has not had cause to issue a multiple site/multiple CSO report since the 'legacy' reports were issued on April 01, 1999, so the process has not been refined based on any additional experience.

ISM Topic Area: Defense Programs, Headquarters

Q. *A February 22, 2000, memorandum from the Deputy Secretary tasked all DOE Operations Offices, contractor organizations, and the management of every facility with taking the time to critically evaluate ISM at every level and to take whatever actions are necessary to*

promote timely and effective implementation. What is the status of these reviews for DOE sites, and have any ISM implementation plans been changed as a result?

A. For DP sites, all have completed at least a Phase I (documentation) verification. These verifications have resulted in significant changes to some of the ISM Systems presented while others have stood fairly well. Actions remaining include completion of the Phase II (implementation) verifications (LLNL, NTS, Oak Ridge Y-12), completion of System verifications at DP operations offices, and an evaluation of the Headquarters System. These verifications are all scheduled at this time and are currently anticipated to be completed prior to the end of September.

The implementation of ISM Systems has revealed several systemic shortcomings that are vigorously being addressed. Most notable is hazard identification at the activity level and the associated development of a work control process that assures safe accomplishment of mission. The "expert based" culture remains a challenge that demands constant vigilance by management. The Phase I and Phase II verifications have been superb catalysts for initiating needed reforms. Defense Programs is revising its approach to oversight to assure that the identified improvements become fully implemented.

The Kansas City Plant ISM System Verification Phase I/II was successfully completed in 1999. Line oversight in accordance with DOE Policy 450.5 fosters continuing improvements in safety management implementation at this Voluntary Protection Program (VPP) Star site.

The DP program office supported the Pantex Plant ISM System Verification initial Phase I/II with the same team member that supported the initial DOE SRS ISM System Verification Phase I. The DP program office, in conjunction with ALO, decided to further reinforce ISM field implementation at Pantex through a repeat of the ISM System Verification Phase I/II under the auspices of DNFSB Recommendation 98-02, Pantex Safety Management. The Pantex Phase II implementation review was satisfactorily completed in June 2000, led by DP after a successful Phase I ISM System Verification earlier in 2000.

ISM System Verification of the Los Alamos Area Office (LAAO) is scheduled for September 2000. The recent Type A at Los Alamos National Laboratory (LANL) requires that a Corrective Action Plan (CAP) be prepared that reviews the process for hazard identification/controls. DP program offices plan to be involved in the formulation of the LAAO-lead CAP to ensure that the ISM field implementation focus is maintained.

A Y-12 Phase II re-verification was conducted in August, 2000. The DP program office participated in this effort to aid ISM field implementation focus at Y-12. In order to provide a consistent focus to the field's implementation of ISM, an ISM verification team member and certified team leader from Defense Programs participated in both the SRS and the Pantex ISM Verifications.

With the exception of Sandia National Laboratory, which has completed its ISM verification, formal verification of ISM system implementation is in final stages at the DP-10 sites. Follow-up of issues identified through the ISM system verifications is being accomplished through the appropriate local field change control processes, with DP line oversight per DOE Policy P 450.5.

In summary, DP program management has been intimately involved with ISM implementation at DOE/DP sites. DP-1 (Acting) signed out a memo to the Operations Office Managers on December 14, 1999 stating his concerns regarding implementation of ISM, directing a response by January 20, 2000, to inform him of any known obstacles to achieve implementation. DP-1 was briefed on responses from the field and has maintained continuing awareness of ISM implementation status, through the DP program offices.

Q. *The federal personnel performance standards were to be modified to incorporate ISM performance language. What is the status of incorporating these changes into DOE managers' performance standards?*

A. The Federal Manager has taken the necessary initiatives to implement fully the principles of the Department's Safety Management System Policy in programs for which the Manager is responsible. This includes the demonstration of an appropriate emphasis on ensuring the technical competence of the Federal staff associated with those programs and the conduct of effective oversight in the accomplishment of related work products and schedules. Appropriate performance standards have been established per DP.

Q. *The Deputy Secretary initiated a set of five ISM performance measures. What have these measures told you about the effectiveness of ISM programs at DOE sites? How is DOE involved in refining the performance measures?*

A. DP has reviewed the current set of ISM performance measures and believes it can be improved. For example, the first ISM performance measures report presented performance data by DOE Lead Program Secretarial Office (LPSO) groupings instead of more easily actionable PSO groupings. PSO specific indicators would provide clearer representations of program performance within and for DP. This issue was addressed in the second report, issued on August 24, 2000.

DP initiatives for an improved set of performance measures are being implemented through and in concert with the DOE Performance Measures Working Group (PMWG). Work is in progress to solidify the process by which ISM performance measures are selected for use across DOE. One specific measure that is in development by DP is the "Effectiveness of Event Corrective Actions". Although this measure is a subset of the more desirable "Effectiveness of all Corrective Actions", it is currently the most readily available for use by any PSO. This specific measure is thought to be of value because poor contractor performance typically manifests itself in operational events, thereby requiring reporting

through the DOE occurrence reporting program and eventual event inclusion in databases like ORPS and ORBITT for analysis and trending. The existence of a substantiated, degrading performance trend is translated from increasing numbers of recurring similar events and is typically a direct indication of ineffective corrective actions. Other potential ISM performance measures are being considered. DP plans to select some additional measures for use in DP, as determined useful by DP management. The performance measure set used in DP is expected to be a "living" set that is used to both monitor overall program performance and to drive performance in a positive direction. It will take time before these measures tell us about the effectiveness of ISM programs at DOE sites.

Q. *What do you see as the role of DOE-Headquarters in implementing ISM?*

A. The DOE-Headquarters role in ISM continues to evolve with an expanding understanding of the effectiveness of ISM to drive culture change. The headquarters roles described in DOE Policy P 450.5, Line Environment, Safety and Health Oversight, and DOE Order O 425.1B, Startup and Restart of Nuclear Facilities, are being emphasized as a next step in the evolutionary process.

The specific Headquarters role for DP facilities includes oversight, process improvement, and modeling. As the model, Headquarters must implement ISM in the FRAM and budgeting processes. For example, DP must provide budgetary direction that embodies safety and balances priorities at the highest levels. Regarding process improvement, Headquarters should coordinate a complex-wide lessons learned program to assist in getting the right information to the right people. The oversight process is evolving, as stated above.

Q. *What is the status of revising and implementing DOE's Functions, Responsibilities, and Authorities Manuals?*

A. A draft NNSA/DP FRAM that responds to a DP-3 vision of the path forward for ISM has been prepared. The existing draft has not yet been approved and is necessarily tied to the final realignment and reorganization of NNSA/DP. Adaptations of DOE Safety Management System Policy 450.4 and DOE Line ES&H Oversight Policy 450.5, as well as a Memoranda of Understanding between NNSA and other PSOs, are being drafted to accommodate the semi-autonomy of NNSA and mission/program changes. Now that the senior management positions in NNSA and DP have been filled, NNSA/DP promulgation of these documents for use is anticipated in the near future.

Q. *What ISM training have DOE managers received?*

A. All line managers have received the ISM Executive Course training, as a minimum. A large number have had additional training through participation in the ISM verification assessments, either as a team member or as a responsible line manager.

Q. *What is being done to reinforce ISM implementation in the field?*

A. DP has played a significant leadership role in the ISM field implementation effort since its inception within DOE, including:

- The second SMIT Director, Mr. Richard Crowe, was provided by DP;
- DP led development of the Verification Process and ISM System Verification Team Leader's Manual;
- DP provides Team Leaders and members for DP verifications, as well as Verifications for other PSOs;
- DP led development of DOE P 450.5 on line management oversight; and
- DP participated significantly in development of the ISM System Guide.

ISM System Verifications, in conjunction with DOE P 450.5, Line Environment, Safety and Health Oversight, has been one of the main tools used by DP program offices to reinforce field ISM implementation. ISM implementation efforts at DP sites follows.

The initial DOE site to have an ISM System Verification Phase I (program review) was SRS (Tritium, etc.) conducted in 1997/8. In addition to the ISM System Verification Team Leader from DP, the DP program office supported that initial ISM System Verification with another team member who was certified based on safety management experience/credentials by S-3 to lead ISM System Verification teams. The SRS ISM System Verification Phase II (implementation review) then followed at SRS on the FB line with subsequent contractor Facility Evaluation Board (FEB) ISM process reviews thereafter. DOE P 450.5 line oversight follows the contractor FEB review findings at SRS.

Q. *Describe the line oversight program in accordance with DOE P 450.5,* ***Line Environment, Safety and Health Oversight.***

A. DP has not formally implemented this process. The line organizations have concluded that the current activities in which they have been engaged meet the requirements specified. However, no formal review of the requirements, or gap analysis, has been performed. The draft DP Functions, Responsibilities, and Authorities document addresses this issue in great detail.

Q. *The Board has consistently encouraged the full use of lessons learned in all activities of DOE. Almost every review of site activities has identified a lack of active management support and involvement as a major shortfall in making use of past experiences to improve safety. What is the program office doing to strengthen the lessons learned program in this regard?*

A. Responsibilities for DP lessons learned activities are provided in the Office of Defense Programs Functions, Responsibilities and Authorities Manual (FRAM). As stated in the FRAM, draft 01/14/2000, "DP-1 is responsible for implementation of a Lessons Learned Program that is integrated with the DOE Corporate Lessons Learned Program and to remain

cognizant of information obtained from assessments which would be useful in improving performance of programs under DP's direction."

Efforts to improve DP management involvement in the NNSA/DP Corporate Lesson Learned (LL) Program are underway. Historically, DP Lessons Learned programs have been localized and somewhat isolated from each other in terms of program processes and implementation in general. There has been and continues to be support from DP headquarters for Lessons Learned programs including involvement in the DOE Lessons Learned Program sponsored by EH. This participation stems back to the DOE Lessons Learned Process Improvement Team which originated in DP and later became known as the Society for Effective Lessons Learned Sharing (SELLS) organization. A DP-45 representative is currently an active Executive Committee Member in the steering organization for SELLS. List servers are continuously employed to communicate internal and externally generated Lessons Learned throughout the DP/DOE complex, as well as SELLS membership business. The Lessons Learned List Server subscription level is over 400 Federal and Contractor personnel across the complex. Each site has a "Lessons Learned coordinator" who functions as the point of contact for SELLS and Lessons Learned dissemination as necessary. Conference calls are held biweekly alternating between the full SELLS membership and the Executive Committee. SELLS Lessons Learned Workshops are held in the Spring and Fall of each year. The next meeting is scheduled for October 17-19, 2000 in Boston, MA. (See website: http://tis.eh.doe.gov/ll)

The current DP Corporate Lessons Learned Program is being enhanced to better support headquarters program management and staff located in the Germantown and Forrestal headquarters offices and to facilitate Lessons Learned access, integration and dissemination for all types of Lessons Learned. Some of the Program goals include:

- Creation and facilitation of an electronic process whereby all DP management levels understand, access, utilize (incorporate) Lessons Learned into daily tasks,
- Capability to share and deliver Lessons Learned to headquarters (and eventually DP Federal Field) staff via customized (user-defined) internet push technology,
- Utilization of Lessons Learned from DOE internal and external sources (e.g., GIDEP, NFPA, etc.).

The DP Corporate Lessons Learned Program is being developed in three phases: (1) Research and Scoping, (2) Program Development, and (3) Implementation. Research and scoping is essentially completed. Phase II is underway and involves developing pilot portfolios of Lessons Learned that are user-selected from available forms and types of software to automatically deliver the Lessons Learned to a customer desktop. Phase III is expected to begin within the next 6-9 months. Customer feedback and improvement is being applied in the development of this program. To date, 42 different internal and external Lessons Learned programs have been reviewed to capture the best features of each for incorporation into DP's Program.

As the DP program offices continually strive to strengthen DOE P450.5 line oversight, DP plans to evaluate field use of SELLS data against existing guidance.

DP actively supports "lessons learned" activities directed by the DOE management (i.e., Criticality Safety Self Assessment, HEPA Filter Vulnerability Study, etc.) For these issues, the DP program offices track field status/approaches, review (or coordinates the review) responses for adequacy, and in the above cases, prepare appropriate correspondence for forwarding to DOE management. DP management may also direct action by the field based on significant events with a potential for broad DP applicability (example being the June 2000 memo from DP-1 to DP sites regarding recent LANL Type "A" Investigation results directing inspection of mechanical fittings and the use of teflon in radiation environments).

DP program offices actively review occurrence reports and other indicators of current operating experience, keeping management actively involved in application of lessons learned to current operations. Additionally, DP program offices conduct regularly scheduled conference calls with the field during which ISM, Conduct of Operations, operational events, and so forth, are discussed.

ISM Topic Area: Environmental Management, Headquarters

Q. *A February 22, 2000, memorandum from the Deputy Secretary tasked all DOE Operations Offices, contractor organizations, and the management of every facility with taking the time to critically evaluate ISM at every level and to take whatever actions are necessary to promote timely and effective implementation. What is the status of these reviews for DOE sites, and have any ISM implementation plans been changed as a result?*

A. The subject memo was issued during the middle of the EM ISM Implementation efforts. At that time, some sites had already declared ISM implementation, some had completed verification activities but not yet declared, and some were still in the verification process. As a result, in response to the February 22, 2000 memo, some of the completed sites engaged in renewed updates and reviews of their ISM processes, some conducted additional reviews before declaring ISM implementation, and the remainder continued their efforts to achieve and sustain ISM implementation. All EM sites are well on track for the September 2000 declaration of ISM implementation. As part of the overall EM program office declaration of ISM implementation, this overall issue - ensuring that ISM programs are real and effective - is being carefully reviewed. EM has no intention of declaring ISM implementation until it is convinced of the adequacy of its ISM system and those of its field offices.

Q. *The federal personnel performance standards were to be modified to incorporate ISM performance language. What is the status of incorporating these changes into DOE managers' performance standards?*

A. EM Headquarters has in place its Senior Technical Safety Manager (STSM) program. The position descriptions for all EM Headquarters STSMs were modified by attaching language describing STSM responsibilities, including those related to implementing ISM. Since that time, EM Headquarters was re-organized. STSM positions have been re-calibrated to the new organizational construct, and appropriate modifications are being made to the position descriptions for STSM positions. Appropriate language to measure performance in the area of ISM and STSM requirements is currently under development for incorporation into appropriate performance plans in the new standards with issuance for the next rating cycle, beginning October 1, 2000. Within the EM Office of Safety, Health and Security's (EM-5) Safety & Health Team, ISM is reflected in their personnel performance elements.

Q. *The Deputy Secretary initiated a set of five ISM performance measures. What have these measures told you about the effectiveness of ISM programs at DOE sites? How is DOE involved in refining the performance measures?*

A. It is too soon to draw conclusions concerning ISM effectiveness at DOE sites based solely on the five performance measures. Once ISM is fully implemented at all sites, these performance measures, and others, can be trended over time to determine the degree of improvement. Because most of these data are available quarterly or annually, it is expected to be several years before the trends are evident.

It should be noted that EM was already monitoring these measures before they were formally instituted. Occupational injury/illness data has been tracked by EM-5 and predecessors for several years and reported monthly in the Site Safety Profiles and Monthly Management Reviews with the Deputy Secretary and quarterly in the Quarterly Management reviews with the Field office Managers. We have also created a module within the Integrated Programming and Budgeting System (IPABS) so that line managers can retrieve data for their sites, contractors, and subcontractors for oversight and monitoring purposes. EM-5 also tracks worker radiation dose at its sites and prepares an annual analysis for line management. Releases to the environment continue to be monitored on a daily basis for each site by line managers responsible for the site.

The SMIT has formed a Performance Measures Working Group with members from the program offices, support offices, field offices, and selected contractor groups to refine these performance measures and evaluate additional measures. EM is an active participant. So far, the group has initiated improvements in the utility of these data, including breakout of the data by PSO area of responsibility. In addition, more than ten additional performance measures have been selected for further evaluation.

Q. *What do you see as the role of DOE-Headquarters in implementing ISM?*

A. In EM, as elsewhere in the Department, line managers are responsible for safety - including ISM implementation. EM-5 safety professionals monitor information reporting systems,

provide technical consulting, and assist site lead organizations and the Assistant Secretary in fulfilling their safety responsibilities. Headquarters line organizations are expected to continue to monitor and emphasize sustained ISM implementation and safety performance improvements by continued participation on assessment teams, monitoring and evaluation of the myriad safety performance data, interaction where appropriate to disposition emerging issues, etc.

EM line organizations (EM-20, 30 and 40 Principal Deputies and Site Office Directors) formulate confidence in the validity and strength of their site declarations through management involvement and by monitoring/evaluating Site Safety Profiles and other numerous data sources, including, but not limited to:

- Participating in site ISM System reviews.
- Phase I and II verification reports, including progress of corrective action commitments.
- ORPS, CAIRS, and similar operational performance data.
- EH or other external assessments, including accident investigations, DNFSB trip/staff reports, etc.
- Performance measures, such as those adopted by the SMIT for ISM tracking.
- CATS, to review timeliness and appropriateness of corrective action completion.

Issues, results and performance trends are evaluated individually as well as programmatically. Such evaluations reflect a sense of whether the information can be considered indicative of 1) general systematic or programmatic problems, 2) issues, which is left un-addressed, could lead to wide-spread systematic problems, or 3) isolated events.

Following the ISM System declarations, EM Headquarters is committed to sustaining emphasis and attention on ISM implementation by:

- Continuing monthly Headquarters safety performance evaluations via the EM Site Safety Profiles.
- Continuing emphasis on and performance of management walkthroughs of work areas.
- Participating in the EM authorization basis improvement initiative
- Using the National Safety Council, conducting worker perception studies/surveys to assess the impact of EM's enhanced focus on safety performance.
- Monitoring and evaluating DOE 450.5 (ES&H line oversight) implementation adequacy by the DOE field.
- Ensuring that contractual agreements are reflective of ISM System provisions, safety performance measures and appropriate requirements identification.
- Participating in annual site ISM System reviews/updates as appropriate.
- Continuing activities to strengthen and integrate the EM and DOE Lessons Learned Programs at all sites and in all management/worker levels.

Q. *What is the status of revising and implementing DOE's Functions, Responsibilities, and Authorities Manuals?*

A. EM has implemented DOE Manual M 411.1 by revising and issuing the EM-FRAM Rev. 2 in March 2000, pro-actively ensuring that the EM FRAM is maintained current (EM-5 function), and monitoring to confirm that the EM field sites have revised and implemented their respective FRA documents.

Q. *What ISM training have DOE managers received?*

A. All EM HQ technical and management personnel have received orientation training in the Core Functions and Guiding Principles of ISM and on both Revision 0 and changes to the EM FRAM. Some personnel have participated in verification reviews where they have received additional training. All HQ and field management personnel have been provided with the EM-5 pocket guides for conducting ES&H walk-throughs. Additional training is available and provided upon request in a variety of specialties.

Q. *What is being done to reinforce ISM implementation in the field?*

A. From a HQ perspective, Field Element Managers (FEMs) are responsible for ISM implementation at their respective sites. EM-1 requires FEMs to report implementation and performance status on a frequent basis. EM-1 requires HQ managers to participate in verifications, problem solving, and corrective actions. EM-1 requires HQ line managers and technical support staff to monitor performance and provide for necessary oversight functions.

Q. *Describe the line oversight program in accordance with DOE P 450.5,* ***Line Environment, Safety and Health Oversight.***

A. The EM Site Lead Office Directors have the responsibility to monitor/collect safety performance data from the field, established reporting systems, and organizations external to EM (EH, independent organizations, regulators, etc.). They participate in field oversight reviews of contractors when appropriate and conduct on-site performance reviews, generally twice annually and on an 'as-required' basis. They are assisted by EM-5 on a routine basis and as a focused resource upon request.

Q. *The Board has consistently encouraged the full use of lessons learned in all activities of DOE. Almost every review of site activities has identified a lack of active management support and involvement as a major shortfall in making use of past experiences to improve safety. What is the program office doing to strengthen the lessons learned program in this regard?*

A. The EM Lessons Learned Program addresses all elements of DOE and EM business activities, including safety. EM Headquarters Management is taking an active, supportive,

and visible role in the EM Lessons Learned Program. EM has identified management participation, especially FEM, and more effective linkage of Lessons Learned to corrective action as areas for improvement. EM is developing Lessons Learned Program Guidance to emphasize EM headquarters management commitment to the program and to achieve field management and line personnel acceptance and support.

ISM Topic Area: Hanford Site Briefing

Q. *Hanford appears to be having success in getting workers involved in the work planning process. What is being done to share the approaches used at Hanford with other sites?*

A. As a mechanism to share successes in worker involvement, the Hanford Site is planning to host the next complex-wide ISM workshop in December 2000. This forum would allow other organizations throughout the DOE complex to discuss the Hanford success first hand with a full range of DOE, contractor management, and workforce personnel.

The Fluor Hanford Automated Job Hazard Analysis process, as well as other contractor hazard analysis processes, has become a key mechanism for workers to become involved in safety management. Worker involvement in the early phases of hazard identification and control has resulted in an observable reduction in work stoppage and task re-work. Feedback during the recent ISM System Verification of Fluor Hanford, Inc., indicated that this increased worker involvement has allowed work to be done more efficiently with fewer changes made to individual work packages.

At Hanford the key to worker involvement has been senior management leadership in establishing and implementing this expectation. DOE and contractor senior managers are committed to obtaining worker involvement and continually communicate and reinforce this expectation to both the workforce and front line supervision.

In the past, RL has strongly encouraged contractors to allow workers to participate in DOE complex-wide ISM System Workshops. Hanford workers continue to be well represented at these workshops. Additionally, there have been three Hanford-wide ISM System workshops, all of which have highlighted the importance of worker involvement. In all cases, workers were a key factor in the planning and conduct of these workshops.

Q. *In DOE's February 29, 2000, response to the Board's reporting requirement on the Hanford 233-S Plutonium Concentration Facility, DOE and Bechtel Hanford Inc. committed to performing a number of actions. These actions included forming a multidisciplinary task force on hazard identification and applying lessons learned from 233-S to future decontamination and decommissioning (D&D) activities. Please summarize the implementation status of the task force's recommendations and lessons learned.*

A. Bechtel Hanford, Inc., has provided RL a list of improvement recommendations and an implementation plan resulting from the April 20, 2000 multidisciplinary task force workshop. The purpose of the workshop was to generate recommendations to improve the work planning process to include a more comprehensive approach to hazard identification and analysis at the activity level and apply lessons learned from the 233-S facility to future decontamination and decommissioning activities. The outcome of the workshop, the planned actions, and other elements of implementing the planned actions were discussed with RL on June 22, 2000.

The improvement actions are:

(1) Improve methods for integrating hazard controls (evaluate AJHA process for ERC applications, reinforce workflow process procedures, and maximize collocation of support organizations),
(2) Re-engineer hazard evaluation integration process,
(3) Improve job walk-down processes (develop performance assurance methods and develop interactive processes),
(4) Improve methods of communicating hazards and controls, and
(5) Early hazards identification.

Responsibilities have been assigned and all actions are underway. A status meeting with RL is planned for early September, with completion of all improvement actions scheduled for September 30, 2000.

Q. *Discuss the way in which DOE's Richland Operations Office (DOE-RL) intends to evaluate implementation of the ISM System once the verification reviews have been completed. Specifically, discuss the roles of the performance assessment, engineering, and line management organizations in these assessments.*

A. Day-to-day oversight of the contractor's ISM System implementation of their safety management system continues to be provided by the Facility Representatives, the RL program managers and RL technical support staff. On an annual basis, RL plans to conduct an overall assessment of the contractors ISM System implementation in coordination with the review and approval of the contractors' performance objectives, performance measures, and commitments required by DEAR 970.5204-2.

Additionally, RL's Office of Performance Evaluation performs periodic assessments of the contractors' ISM System implementation as required within the contract mechanism and in accordance with DOE P450.5, Line Environmental, Safety, and Health Oversight. RL has identified through the ISM System Verification process a need to strengthen RL's implementation of DOE P 450.5. Both short-term and long-term corrective actions have been developed to strengthen RL's implementation of DOE P 450.5. An independent review to

assess the adequacy of the short-term corrective actions is to be completed in September 2000.

Q. *Explain how the Richland integrated management System will transition the requirements in the DOE directives and the **Functions, Responsibilities, and Authorities Manual** to work processes defined in management Systems and the **Roles, Responsibilities, Accountabilities, and Authorities** (R2A2s) by Richland Integrated Management Systems.*

A. In accordance with the RL Integrated Management System (RIMS) Requirements Management Process, the responsible individuals and subject matter experts evaluate directives and requirements, such as those contained in the DOE FRAM (DOE M411.1-1A). This evaluation results in decisions regarding appropriate implementation of the requirements in one or more RIMS process documents and associated training requirements. These decisions are documented and subsequently executed by the affected staff through the RIMS documents.

The core set of R2A2s defines the primary delegations implemented by authority of the RL Manager to the RL staff. Each of the RIMS process documents adds additional specific responsibilities associated with that system for each role. The core R2A2s and the specific responsibilities from the RIMS process documents are compiled and published by the RIMS System steward as the central source of R2A2 information.

During the recent ISM System Verification, opportunities for improvement noted the need to strengthen the rigor of RIMS and better define roles and responsibilities. Several corrective actions have been identified and are being implemented to strengthen the process.

Q. *What benefits have been derived - by DOE, the contractor, and the verification team - by including stakeholders (e.g., the Hanford Advisory Board, worker representatives) as independent observers during previous ISM System verification reviews? What feedback have you received from these stakeholders and what are DOE-RL's plans for including them in future ISM (or similar) reviews?*

A. RL has continually stressed the importance of worker and stakeholder involvement. RL believes that worker and stakeholder understanding of ISM system objectives and principles adds credibility and helps sustain ISM over the long run. The worker and stakeholder representatives have participated in multiple ISM system verifications, including the recently completed (June 2000) FHI ISM system verification. These representatives are helping to communicate to their peers the positive attributes and value of ISM and the ISM system verification process. In three previous Hanford verification reports, the Team Leader included the participation of stakeholders and worker representatives as valuable "Lessons Learned".

Worker involvement has been especially helpful in evaluating if a Safety Conscious Work Environment exists (i.e., workers can raise safety concerns without fear of reprisal), and if

workers are truly involved in the work planning and hazard analysis processes. In addition, the stakeholder representative has been instrumental in determining if the contractor's ISM System truly encompasses the tenets of environmental protection (e.g., "environment" is truly integrated into the contractor's Integrated Safety Management System).

To date, feedback from both the worker and the stakeholder representatives indicate that they were happy to be involved in the process. This direct involvement in the verification process has given them a better understanding of ISM system and ISM system verification process. Therefore, they can better support and communicate the long-term value of the ISM system. RL is now in the process of determining how to best include stakeholder and worker representatives in the annual assessment of contractor ISM programs.

ISM Topic Area: Oak Ridge Site Briefing

Q. *What has been the role of DOE's Oak Ridge Operations Office in providing oversight of the contractor's implementation of ISM? Why was the need for additional verifications at Y-12 recognized only recently?*

A. Each line management organization (for example Assistant Manager for Defense Programs, Assistant Manager for Environmental Management, Assistant Manager for Laboratories) is responsible for ensuring that ISM is implemented by their respective contractor. The Office of the Assistant Manager for Environment, Safety, Health, and Emergency Management (AMESH) has the responsibility for ensuring that the DOE Oak Ridge Operations (ORO) ISM System Verifications are performed. AMESH is also the organization that provides ES&H subject matter experts to the line programs under a matrix concept. By performing and /or participating in all of the ORO ISM System Verifications and participating in line program operational awareness activities, AMESH supports the oversight of ORO contractor programs.

The DOE Y-12 Site Office (YSO) role in providing oversight of the contractor's implementation of ISM is to periodically perform assessments of the contractor's execution of various elements of the program from a facility/organizational level. Facility representatives from DOE YSO perform continuous assessments of the contractor's ability to execute in accordance with the five core functions of ISM, in the facilities to which they are assigned.

In August 1998, members from the DOE YSO participated in the Integrated Safety Management (ISM) review of the Y-12 site. Nine opportunities for improvement that focused on nuclear operations were identified from the review. Though all actions from the opportunities for improvement have been completed, Issue 3 is currently going through the closure verification process. This issue dealt with the maintenance and implementation of Standards and Requirements Identification Documents (SRID). During the first ISM System Verification, Enriched Uranium Operations (EUO) had not re-started from the September

1994 shutdown as had the rest of the plant. The contractor and DOE realized that EUO was not ready to support the August 1998 Y-12 ISM review. It was determined that EUO would be assessed for ISM implementation as an Operational Readiness Review and/or Readiness Assessment to be completed during restart. The Balance of Plant (BOP) ISM implementation schedule and completion were reported by LMES in early FY 1999; however, subsequent events pointed to significant weaknesses in BOP ISM implementation. During an April 2000 ISM implementation meeting, it was determined that an EUO and BOP review would be held prior to the end of the fiscal year. The ISM phase II review of Y-12 EUO and BOP was conducted from August 14-31, 2000.

Q. *Recent incidents at Oak Ridge raise some concern about the site's feedback and improvement program and sharing of lessons learned. Can you describe what is being done to ensure that the appropriate lessons learned are being provided to the workers performing the work?*

A. The Lessons Learned Program at Y-12 has been strengthened by revising procedures to clearly identify the roles and responsibilities of the Lessons Learned Coordinators and Organization Managers and by incorporating program information into the Front Line Supervisor Training Module. In addition, the Y-12 Operational Safety Board (OSB) members were retrained with a module which included emphasis on utilizing Lessons Learned in the Job Hazard Identification and Analysis processes and the execution of Occurrence Notification and Reporting of near misses and abnormal events. All the data from these Systems are used as lessons learned planning tools in preparing for work. This lessons learned program is a continuing activity as part of the fifth ISM System function of Feedback and Improvement.

The DOE-Y-12 Facility Representatives (FR) assess the contractor utilization of the lessons learned database during the planning stages of evolutions, during the preparation of authorization basis documents, and while planning assessments, especially if complex facilities and evolutions are involved. The FRs also ensure that the contractor routinely scans the lessons learned database for applicability to ongoing activities and reviews applicable lessons learned with all employees during safety meetings and routine shift briefings to maintain awareness of safe work practices both on and off the job.

Q. *The Board recently provided DOE with several reports prepared by the Board's staff that detail many recurring issues in the area of requirements flowdown, authorization basis improvements, and risk reduction in Building 9206. The repeated identification of the same issues raises concern about the effectiveness of the Y-12 feedback and improvement program, as implemented by its issues management system. Could you describe how issues are prioritized, tracked, and closed to prevent their recurrence at Y-12?*

A. Issues arise from a number of sources ranging from workers to external organizations. One example of worker originated issues relates to the age and condition of change houses.

External organizations focus on areas ranging from financial to environmental to safety and health issues. All must be evaluated and prioritized by objective and subjective means. The Y-12 contractor has recently organized its senior level managers into three functionally aligned Leadership Teams to facilitate communications across the organization. These teams (Production, Programs, and Services) coordinate and manage a number of actions including the identification of activities, products, services, and issues that require correction or improvement and the prioritization of these actions. These teams receive weekly reports as to the status of identified deficiencies and use their collective resources to achieve resolution. The Services Leadership Team has taken an additional step and identified the top ten issues with the most significant impact on plant operations and manages those issues with a high level of intensity. The teams present the results of their efforts to DOE at a monthly meeting specifically held to review the status of the issues management process.

For those issues that can not be immediately resolved, the contractor uses the Energy Systems Action Management System (ESAMS) database which is used to collect and track deficiencies identified by internal and external assessments. The DOE Site Office has a tie into the ESAMS data-base through the Deficiency Tracking System (DTS). This is used to track issues that arise from the Monthly Assessment Reports and from external sources. DOE approves the contractor's corrective action plans for DOE identified issues. After the plan is approved it is entered into the database. It remains open until the issue is resolved. Some issues are long term and require significant effort or resources to resolve. For externally identified issues, DOE verifies that the action is complete. The verification process used at DOE YSO to ensure contractor corrective actions are properly implemented is covered in procedure YSO 3.2,"Deficiency Processing." Essentially, the DOE-YSO staff reviews and evaluates the corrective action and then verifies implementation of the action through walkdowns or surveillance activities, and then documents the close out.

Q. *In 1998, DOE approved the Y-12 contractor's ISM System Description, noting that a number of implementation issues remained to be resolved. Since then, a series of occurrences and accidents at Y-12 have highlighted implementation deficiencies, but have also served to either validate or strengthen the underpinnings of the contractor's ISM program. Most recently, the DOE Office of Environment Safety and Health's (DOE-EH) February 2000 investigation report on the NaK accident in Y-12 Building 9201-5 identified numerous ISM implementation issues, but did not take exception to the ISM program itself.*

In accordance with Section M of DOE's Y-12 request for proposal (RFP), the bids are to be judged in part (12.5 percent of the evaluation criteria total) on the basis of the proposed ISM System approach. Additionally, in accordance with Section C.3, the winning contractor is to submit a proposed ISM System Description, Standards/Requirements Identification Documents (S/RIDs), and Authorization Agreements no later than 60 days after initiation of the contract transition. What is being done to ensure that the gains made in implementing ISM are not lost with the transition to the new contract? (Note that the RFP, Section C.3, requires the bidders to accept the existing DOE Oak Ridge Reservation Emergency Plan.)

A. Several actions are being taken to help to preserve ISM System gains. An ISM System Phase II Verification was performed for EUO operations and the balance of plant August 14-31, 2000. This current "snapshot" of the ISM System is expected to provide the successful offeror with a clear picture of the status of ISM System implementation at Y-12, and hence to help to preserve ISM System gains. If the contract had been awarded before August 31, 2000, the successful offeror would have been invited to participate as an observer during whatever portion of the August ISM review remained. Since that did not happen, the participation of the new contractor in examining the ISM review process is expected to be a key vehicle for ensuring that ISM gains are not lost during the contract transition. More importantly, a joint DOE/LMES transition team has been formed, and ISM transition issues have been identified as being an item for the team review. Significant attention to the ISM System is planned during transition to ensure that gains are maintained and opportunities for improvement are clearly understood. The RFP contains a clause (H.30, Advance Understanding on Human Resources) that requires that all incumbent non-management employees (for the purposes of this clause, non-management employees are defined as all employees below grade 16 level) become employees of the new Contractor. Since the large majority of workers are expected to be retained, loss of experience and training in an integrated safety approach is not anticipated.

With respect to the submission of a Safety Management System Description as required by Section C.3 of the RFP, this is consistent with DEAR Clause 970.5204-2 which requires the Contractor to submit to the Contracting Officer documentation of its System for review and approval. The RFP was written to be consistent with the DEAR clause, and to emphasize the importance of the ISM System at the Y-12 Plant. Since the ISM System is an important consideration in the selection of a new contractor, we wanted to evaluate the offeror's approach to fully implement the principles of ISM. The Contracting Officer still has the authority to require the adoption of the existing Safety Management System, if needed.

Section 4.3.2 in Chapter IV of the ISM System Guide (DOE G 450.4-1A) addresses changes of contractor. This section provides guidance on steps that could be taken by DOE should the existing approved ISM System program be substantially modified by the new contractor or if the existing approved program is continued through the transition. The steps listed for continuing the existing program through the transition are presently being planned or proposed for the Y-12 contract.

Note: During the development of the RFP, it was decided to specifically require potential bidders to accept the existing DOE ORO Emergency Plan since it is a single comprehensive umbrella plan encompassing all three local ORO sites allowing for shared resources (East Tennessee Technology Park (ETTP),Y-12, and Oak Ridge National Laboratory (ORNL)).

Q. *The Y-12 contractor's NaK corrective action plan (approved by DOE April 14, 2000) commits to a systematic improvement plan (SIP), which in turn commits to an independent assessment of ISM implementation. In providing the latest SIP revision to DOE, the Y-12*

contractor recommended that DOE participate in this review. Given the recent history of problems at Y-12 and the close proximity of the transition to a new Y-12 contractor (July/August award, control assumed October 1), what action is DOE taking to review the respective roles of DOE-Headquarters and DOE-Oak Ridge in the implementation of ISM at Y-12?

A. The DOE Office of Defense Programs is committed to conducting work efficiently and in a safe manner that ensures protection of workers, the public and the environment. The strategy for implementing these principles is defined by DOE P 411-1, Safety Management Functions, Responsibilities, and Authorities Policy. It is the local DOE ORO Policy that safety management systems shall be used to systematically integrate safety into management and work practices at all levels so that work can be accomplished while protecting the public, worker and the environment. The ISM Phase II Verification, performed August 14-31, 2000, assessed the adequacy of the ISM System implementation.

The Functions, Responsibilities, and Authorities (FRA) for the DOE Y-12 site office are contained in the DOE-ORO FRA manual. The ORO FRA manual in turn captures those FRAs that come from the DOE headquarters manual. Throughout these documents, line management is accountable for the implementation of ES&H and ISM programs.

Q. *What action is DOE taking to oversee the independence and rigor of the contractor's assessment?*

A. The contractor commenced an independent ISM assessment on August 7, 2000. A portion of the field-work of this assessment was evaluated by the DOE ISM System Phase II re-verification team, led by Joe King. Following that review, performed August 14-31, 2000, the cognizant DOE and LMES senior personnel plan to assemble and analyze the lessons learned from both the LMES independent review and the DOE review.

Q. *What action is DOE taking to ensure that the new Y-12 contractor participates substantially in the assessment?*

A. The original plan was that if the contract is awarded in time, the successful bidder would have been invited to participate as an observer during the August ISM review. Because of the delay in completing the contract evaluation process, the selection of a new contractor did not occur in time for participation in the scheduled ISM System review. Regardless, DOE plans to provide the results of the ISM review to the successful bidder. A joint DOE/LMES transition team has been formed, and the ISM transition issues have been identified as being an item for the team review. ISM System implementation is expected to be a significant area of discussion during the transition period to ensure that the contractor understands the gains and current status of ISM at the site as well as the areas where improvement is needed. The RFP contains a clause (H.30, Advance Understanding on Human Resources) that requires that incumbent non-management employees (for the purposes of this clause, non-

management employees are defined as all employees below grade 16 level) become employees of the new Contractor. Since the large majority of workers are expected to be retained, loss of experience and training in an integrated safety approach is not anticipated.

ISM Topic Area: Questions Specific to Oak Ridge National Laboratory (ORNL) and Building 3019

Q. *From ORNL's responses to the last set of questions from the Board, it appears that the verification review for the laboratory consisted of a review of documentation from other reviews. In contrast with what all other sites are doing, it appears that no one reviewed the implementation of the entire ISM program to determine how it is functioning or how various aspects of the program are integrated. Could you describe how your reviews have provided some degree of confidence that the ISM program is adequate and functioning?*

A. The verification process included a detailed field validation at ORNL. The DOE review included a determination of implementation along with an evaluation of performance. The validation effort was conducted over ten weeks beginning in January 2000. Of the 36 ORNL organizations, ten divisions, one program, and the Spallation Neutron Source (SNS) were chosen for detailed validation. Selections were made to ensure a cross section of laboratory research activities and operational activities, and included ORNL facilities located at the Y-12 plant.

A team of knowledgeable DOE personnel was utilized in this validation. Certified Facility Representatives conducted the evaluations on the four divisions with Category 1, 2, or 3 facilities. DOE ORNL Site Office personnel conducted the validations on the remaining divisions and program. A member of the SNS Project Office evaluated the SNS Project. Additionally, Subject Matter Experts from the Office of the Assistant Manager for Environment, Safety, Health & Emergency Management utilized the weekly operational awareness visits to conduct specific evaluations of the effectiveness of ISM System implementation.

Team participants were provided with detailed evaluation check sheets to use in their field activities. These check sheets cover all the ISM System core functions and were specifically targeted for three levels of employees (division management, first/second line supervisor, group leader, project manager, and worker). They also cover most of the objectives of the Phase II Criteria and Review Approach Documents (CRADs) contained in the DOE ISM System Verification Team Leader's Handbook.

After the completion of the Phase II verification by DOE personnel, the results were compared with the results from a similar evaluation that LMER, the ORNL contractor, had performed. The results agreed except in a couple of organizations. A follow-up Phase II verification was conducted August 28 – September 1, 2000, of the two organizations, Plant and Equipment Division and Chemical Technology Division, which includes Building 3019.

These verifications are the first step in a continuous improvement process to ensure an effective Integrated Safety Management (ISM) program at ORNL.

Q. *On April 1, 2000, UT-Battelle assumed the role of operating contractor at ORNL. The prior contractor, with DOE's approval, had issued an ISM System Description that utilized 36 independent division- and facility-specific ISM System program plans. Does DOE or UT-Battelle expect to amend the ORNL ISM program in any way to afford better integration?*

A. UT-Battelle has refined the Lab-level improvement agenda based upon the validation activities done to date. UT-Battelle has been aggressively building upon the work done previously at ORNL. Specific refinements include the accelerated deployment of a proven set of integrated management systems, the field deployment of ES&H subject matter expertise to support line ownership, and the importation of proven work planning tools. Further, ORNL plans to enhance the self-assessment program to cover all aspects of laboratory operations, using a performance-based philosophy with results rolled up to the Lab level to further improve integration.

The Phase II follow-up verification encompassed a review of the UT-Batelle ISM System program and their management.

Department of Energy

Washington, DC 20585

August 24, 2000

MEMORANDUM FOR DISTRIBUTION

FROM: Theodore A. Wyka, Director
Safety Management Implementation Team

SUBJECT: ISM Performance Measures - Second Quarterly Report

Please find attached the second quarterly report on ISM Performance Measures, as requested by the Deputy Secretary in his memo of December 3, 1999. This report covers the period ending March 2000. This report was developed in coordination with the Office of Environment, Safety and Health (EH) and the Performance Measures Working Group, which consists of representatives from field and program offices, as well as contractor organizations EFCOG and NLIC. The report concludes that all ISM performance measures are currently within their historical control limits. In other words, no statistically significant trend is indicated in either the positive or negative direction at this point.

This report addresses the five performance measures that the Deputy Secretary established for ISM. For each measure, the report provides the following information: 1) DOE-wide corporate performance trend, 2) relative contribution by each PSO, and 3) the current PSO performance in comparison to recent history. This format was initially developed and continues to be improved based on input from the Performance Measures Working Group. Please advise me of any additional information that you require to effectively evaluate and make use of the current set of measures.

The Performance Measures Working Group continues work on maturing this set of ISM effectiveness measures and developing proposed additions to the initial set of measures. The current goal is to propose additional measures in January 2001 for evaluation and potential inclusion into the performance measures set. Your comments and recommendations are always welcome.

Please provide any questions you have on this matter to me at (202) 586-1418.

Attachment 1: ISM Effectiveness Measures Report

Distribution:
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M. Whitaker, S-2
D. Stadler, EH-2
N. Goldenberg, EH-3
SMIT Performance Measures Working Group
SMIT Points of Contact

INTEGRATED SAFETY MANAGEMENT (ISM) PERFORMANCE MEASURES REPORT

Prepared by the Department of Energy
Safety Management Implementation Team

with support from the Office of Environment, Safety and Health
and the ISM Performance Measures Working Group

(For Period Ending: March 31, 2000)

ISM PERFORMANCE MEASURES REPORT

This is the second quarterly ISM Performance Measures Report. The objective of the performance measures report is to determine whether the ISM objective of "doing work safely" is being achieved. On December 3, 1999, the Deputy Secretary established the following measures as the initial set of ISM performance measures:

- **Total Recordable Case Rate**
- **Occupational Safety and Health Cost Index**
- **Reportable Occurrences of Releases to the Environment**
- **Estimated Radiation Doses to the Public**
- **Worker Radiation Dose**

Three views are provided for each performance measure: 1) DOE-wide performance trend, 2) relative contribution by Program Secretarial Officer (PSO) to current DOE-wide performance, and 3) current performance by PSO compared to historical performance. DOE-wide performance is shown on a control chart, a statistical tool[1] that allows users to view data and determine if there have been any significant changes effecting the results during the time interval reported.

This second issuance of the ISM performance measures report contains three changes to the data presentation: 1) Relative contributions to DOE-wide performance is broken down by PSO rather than Lead PSO, 2) Absolute magnitude of measures for current time-period is explicitly provided, and 3) DOE corporate staff leads or Subject Matter Experts (SMEs) within EH are identified for each measure. These upgrades were recommended by the Field Management Council (FMC) and the Performance Measures Working Group (PMWG). Additional recommendations are under consideration to more effectively use the initial set of measures.

> ***This report concludes that current DOE-wide performance is within control parameters for each of the five measures. DOE performance has neither significantly improved nor degraded during the current report period.***

In order to move forward in using the performance measures to evaluate whether the ISM objective of "doing work safely" is being achieved, DOE corporate performance objectives will need to be considered by the FMC based on their review and discussion of this and follow-on reports.

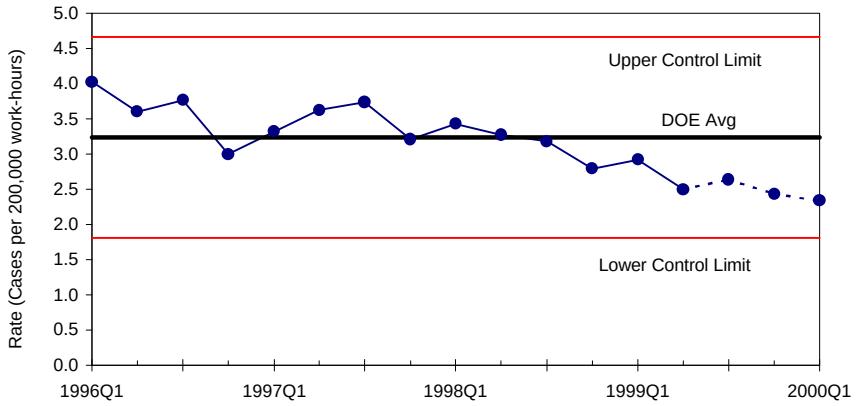
Experience with performance measures indicates that development and effective use of a mature set of measures requires a multiple year commitment. As directed by the Deputy Secretary, the set of ISM performance measures and the presentation of this information will continue to evolve as experience is gained. The PMWG is currently defining and evaluating some potential additions to the ISM performance measures set, with the goal of proposing additions to the FMC by January 2001. Feedback from responsible line managers on the set of measures and the report format is essential for the evolution of this report to proceed along a meaningful path.

For further information please contact:
Sam Rosenbloom (301-903-5749)
DOE Office of Performance Analysis and Assessment (EH-3)
e-mail: samuel.rosenbloom@eh.doe.gov

[1] See Glossary of Terms.

1. Total Recordable Case Rate

Figure 1A: DOE-Wide Performance Trend



Source: CAIRS

DOE SME – Janet Macon (EH-51); 301/903-6096

Data collection period: Quarterly

Definition: Work-related death, injury or illness, which resulted in loss of consciousness, restriction of work or motion, transfer to another job, or required medical treatment beyond first aid, per 200,000 hrs worked. The data includes both contract and federal employee cases.

Due to the lag-time in collecting final data on Total Recordable Cases (TRC) (e.g., number of worker hours, delays in reporting and final determinations on recordability of cases), the last 4 data points are expected to rise. The data from the most recent quarter is expected to rise by as much as 30-40% when mature. For the purpose of data analysis the following data analysis focuses on the reliable data - that through CY 1999Q2.

The data indicate that DOE performance trend continues within its control limits for time covered. In CY1999Q2 the total of 826 recordable cases represents a 25% decrease in the TRC compared to 1,108 cases for the same period 1-year prior (CY1998Q2). There were 3,762 total recordable cases for the 12-month period ending June 30, 1999.

The TRC significantly decreased about 40% since CY1996Q1 while the total work hours (DOE-wide) have also decreased approximately 12%. Reduction in the TRC rate has been the major contributor to reduction in overall recordable cases over the last 4 years.

Figure 1B: Relative Contribution by PSO (Cases for CY2000Q1)

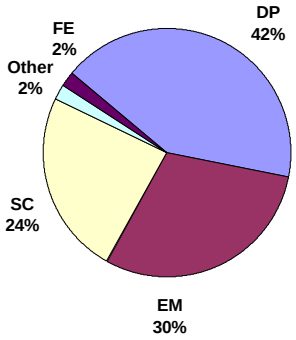


Figure 1C: Performance by PSO (Case Rate for CY2000Q1)

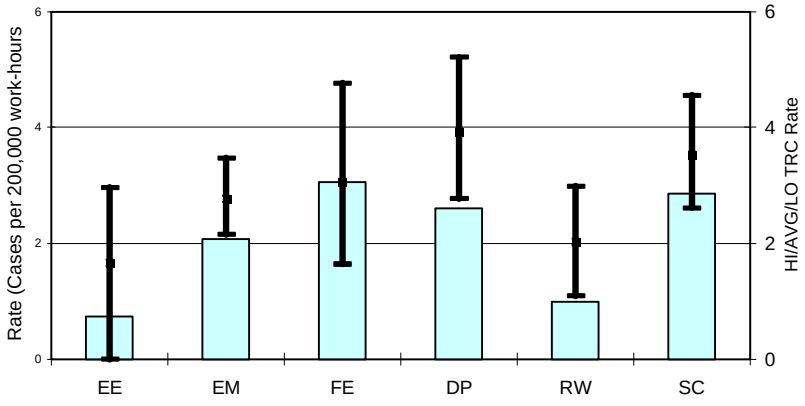
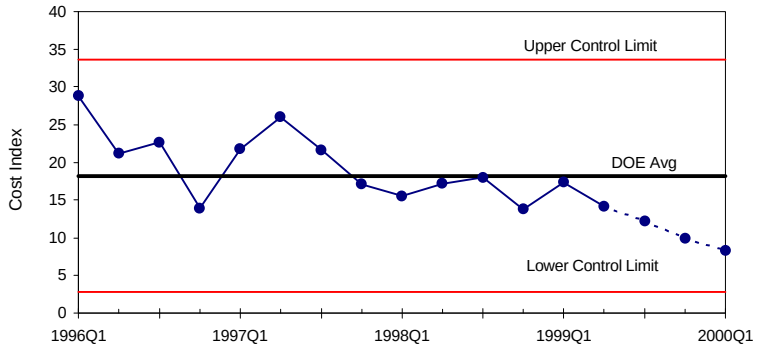


Figure 1C depicts the relative total recordable case rate amongst the PSOs. TRC data was allocated to PSOs based on DOE contracting office for contractors reporting TRC data.

Legend: The High Low and Average values are based on the previous 4 years from the most recent quarter.

2. Occupational Safety and Health Cost Index

Figure 2A: DOE-Wide Performance Trend



Source: CAIRS

DOE SME – Janet Macon (EH-51); 301/903-6096

Data collection period: Quarterly

Definition: The approximate amount of dollars lost (indirect and direct) per 100 hrs worked for all injuries/illnesses using the following formula. The coefficients used in the Cost Index formula are weighting factors derived from a study of the direct and indirect dollar costs of injuries. The index includes both contract and federal employee injuries/illnesses.

DOE sites use this index to measure improvement in worker safety and health. Due to the lag time in collecting final data, the last 4 data points are expected to rise. The cost index is calculated by assigning $1 million per fatality, $500k per permanent transfer or termination due to occupational injury or illness, $2k per lost workday case, $1k per day away from work, $400 per restricted day, and $2k per recordable case.

The data for the current quarter is not complete and can change as much as 30-40% by the time the data is fully complete. This is due to the fact that some data, such as number of days away from work, cannot be known until well after the close of the quarter. Subsequent lost work days are charged to the quarter in which the incident initially occurred.

Based on the cost index for the year ending June 30, 1999, the approximate dollars lost was $ 41.8 million (in 1980 dollars).

Figure 2B: Relative Performance by PSO (Total DOE Cost CY2000Q1)

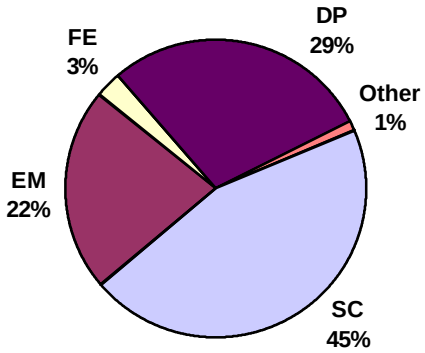
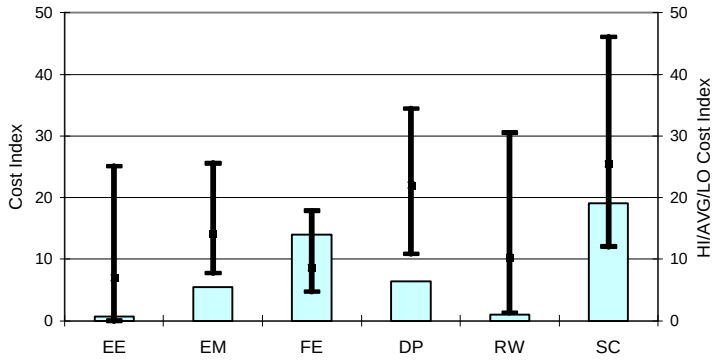


Figure 2C: Performance by PSO (Cost Index for CY2000Q1)

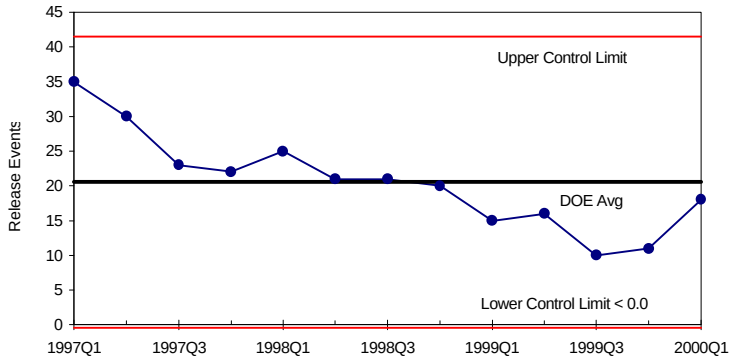


TRC data was allocated to PSOs based on DOE contracting office for contractors reporting TRC data. The DOE-wide cost index dropped from 18.19 in CY1998Q2 to 14.15 in CY1999Q2, approximately 22%.

Legend: The High Low and Average values are based on the previous 4 years from the most recent quarter.

3. Reportable Occurrences of Releases to the Environment

Figure 3A: DOE-Wide Performance Trend



Source: ORPS data, based on field office coding of environmental releases

DOE SME – Jeannie Boyle (EH-3); 301/903-3393

Data Collection Period: Daily

Definition: Releases of radionuclides, hazardous substances, or regulated pollutants that are reportable to federal, state, or local agencies. Category 2a and 2b from ORPS data are used and sorted by PSO.

Statistical analysis of the data shows that system performance is stable from 1997Q1 to the present. There is a small increase for the present quarter. For CY2000Q1, no releases to the environment were reported by FE, EE, NE, or RW.

There were 55 Releases to the Environment for the twelve month period ending March 31, 2000.

Figure 3B: Relative Contribution by PSO (for CY2000Q1)

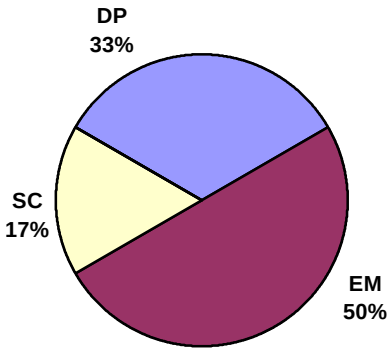
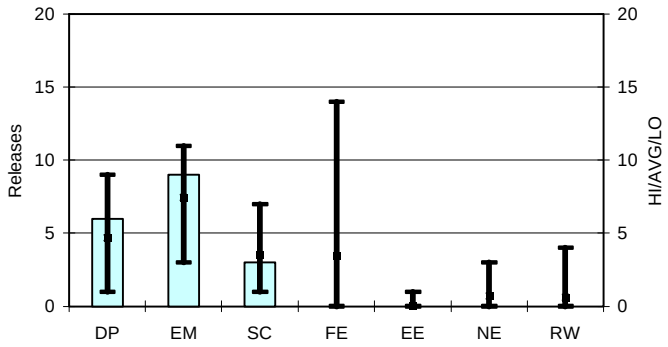


Figure 3C: Performance by PSO (CY2000Q1)

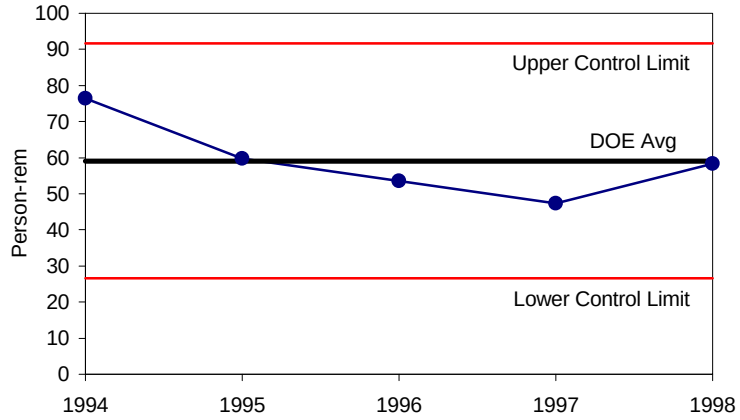


The PSO data has not been normalized to reflect the degree to which PSO activities involve reportable substances.

Legend: The High, Low, and Average values are based on 3 years of data including the most recent quarter.

4. Estimated Radiation Dose to the Public

Figure 4A: DOE-Wide Performance Trend



Source: Annual Report EH-4

DOE SME – Steve Woodbury (EH-41); 202/586-4371

Data Collection Period: Annual - CY1999 data should be available in CY2000Q3

Definition: Total collective radiation dose (person-rem) to the public within 50 miles of DOE facilities due to radionuclide airborne releases.

For 1998, the estimated radiation dose to the public was 60 person-rem. The estimated collective dose in 1998 was 21% higher than in 1997. More than 75% of the estimated collective dose came from 5 sites: Oak Ridge, Lawrence Livermore-Site 300, Savannah River, Brookhaven National Lab and Rocky Flats.

For perspective, natural background radiation is a much greater source of radiation exposure for the public than releases of radionuclides from DOE facilities. The collective background radiation is actually ten thousand times higher than the collective dose received by the same population within a 50-mile radius of DOE facilities.

Figure 4B: Relative Contribution by PSO (for 1998)

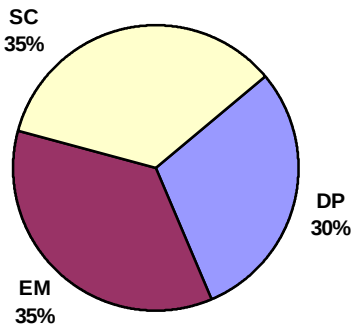
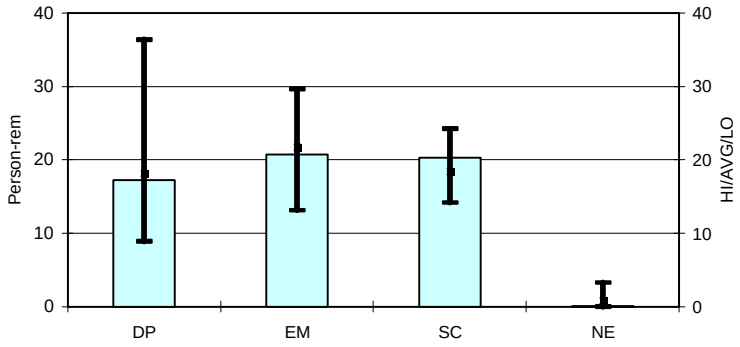


Figure 4C: Performance by PSO (for 1998)



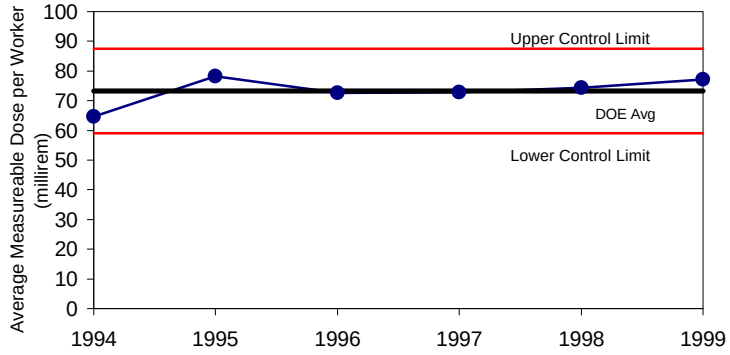
At Rocky Flats, there was a 24-fold increase from 1997 (0.27 to 6.5 person-rem) due to the draining of Building 788 clarifier tank during the 1998 calendar year.

At Lawrence Livermore there was a 50% increase (7.2 to 11 person-rem) due to an increase in the quantity of depleted uranium used in explosive tests conducted at the site.

Legend: Blue column represents 1998 data. Hi/Avg/Lo bars are based on 5 years of data including the most recent annual data.

5. Worker Radiation Dose

Figure 5A: DOE-Wide Performance Trend



Source: Annual Report EH-52

DOE SME – Nirmala Rao (EH-52); 301/903-2297

Data Collection Period: Annual

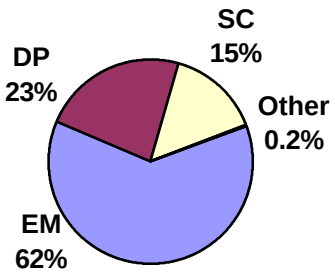
Definition: Average measurable dose to DOE workers, calculated by dividing the collective total effective dose equivalent (TEDE) by the number of individuals with measurable dose.

In 1999, 15% of the monitored individuals (slightly less than 13% of the DOE workforce) received a measurable dose during the past five years. There were no exposures over the DOE limit of five rems.

There has been no significant change in the average measurable dose per worker since 1994.

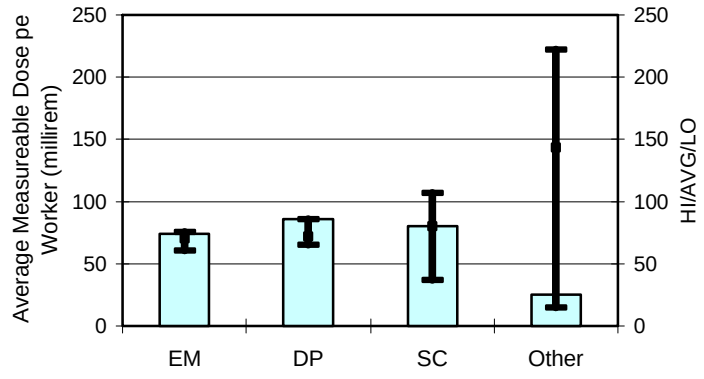
For CY 1999 the total collective worker dose was 1,278 rems, the total number of workers exposed was 16,589 and the number of workers monitored was 112, 745.

Figure 5B: Relative Contribution by PSO (Total Dose for 1999)



Legend: Percentage is based on total dose for each PSO for 1999 divided by total dose for DOE.

Figure 5C: Performance by PSO (Dose Rate for 1999)

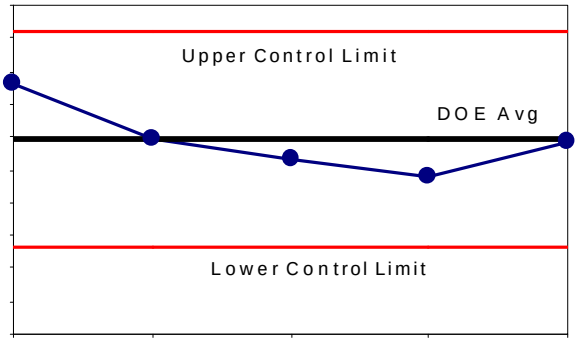


Five contractors (or 4.9% of a total of 103 contractors) contribute 61.3 % of the total collective TEDE. These five contractors are: Rocky Flats Prime Contractors, Fluor Daniel Hanford, Lockheed Martin Energy Systems Y-12, Los Alamos National Laboratory, and Westinghouse Savannah River.

Sixty Seven percent or 2/3 of the contractors contribute individually less than 1/10 of 1% of the total collective TEDE.

Legend: Blue column represents 1999 data. Hi/Avg/Lo bars are based on 5 years of data including the most recent annual data.

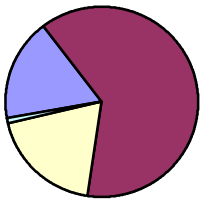
Glossary of Terms

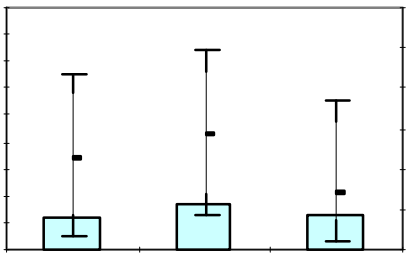


Control Chart - A Control Chart has statistically-generated upper and lower control limits. A process is in statistical control when the process measurements remain within the control limits. This means the variation is consistent and predictable over time. Control limits are computed from process information data.[2]

Fluctuations in the data are caused by a large number of minute variations or differences: differences in materials, equipment, the surrounding atmospheric conditions, the physical and mental reactions of people. Most of these differences are extremely small. They cause the pattern to fluctuate in what is known as a "natural" or "normal" manner. Experience shows that there are definite detectable differences between the "natural" and "unnatural" patterns. It is possible to discover and study these differences by means of simple calculations based on well known statistical laws. This makes it possible to detect, identify and study the behavior of causes. [3]

Pie chart - A type of presentation graphic in which percentage values are represented as proportionally-sized slices of a pie. [4] Pie charts are used to depict relative contributions of PSOs to overall DOE performance. To improve DOE performance, the best place to start is with the PSOs with the largest pie wedges. In some cases, a large pie wedge may indicate a larger work force, rather than poorer performance, relative to other PSOs.





Hi/Avg/Lo chart - A type of presentation graphic where Hi/Lo marks indicate how high and low each bar has been during a specific period. The Hi/Avg/Lo chart is used to depict recent performance by PSOs in comparison to historical performance. Comparisons across PSOs must be done with care as the nature of work can vary significantly.

[2] Mark J. Kiemele and Stephen R Schmidt. Basic Statistics: Tools for Continuous Improvement. Air Academy Press, 1990 p. 2-18.
[3] Handbook of Statistical Control, Western Electric Company, 1956, p. 6.
[4] http://e-comm.webopedia.com/TERM/p/pie_chart.html

Corrective Action Plan
for 98-1 Verification Team Report

Background: The Department's March 10, 1999 Plan to Address and Resolve Safety Issues Identified by Internal Independent Oversight (98-1 Implementation Plan) called for an independent review of plan implementation. This independent review, led by Mosi Dayani of Savannah River Operations Office, was completed on schedule on May 31, 2000. The Safety Management Implementation Team (SMIT) Director has directed the Integrated Corrective Action Management (I-CAM) team to evaluate the findings and opportunities for improvement identified in the verification report, and develop an associated Corrective Action Plan, in accordance with DOE Order 414.1A, Quality Assurance.

The Independent Review identifies two issues that must be addressed before the 98-1 Implementation Plan can be considered complete. In addition to these two issues, the review identifies opportunities for improvement to be considered in for institutionalization and enhancement of the Department's corrective action management process.

Issue 1: "The documentation of roles, responsibilities, authorities, and procedures covering the program, particularly at the PSO and field levels, is lagging behind commitments made in the 98-1 Implementation Plan. In order to ensure that the program will continue to operate as intended, it is important that Headquarters offices and the sites finish and issue appropriate implementing instructions, including FRAs [Functions, Responsibilities, and Authorities documents, required by DOE M 411.1-1A], QAPs [Quality Assurance Plans, required by DOE O 140.1A], and other internal procedures, and keep these up to date as organization changes occur." (Section 4.1).

Action 1: The SMIT is documenting the headquarters and field office the status of implementation of the FRA and QAP requirements. The QAP requirements may be fulfilled via equivalent documentation. The evaluation of this documentation will be complete by July 31, 2000. A reminder memo will then be sent from the Deputy Secretary to any offices that have not reported completion of these activities. This follow-up memo will direct program offices to ensure these updates are accomplished by September 29, 2000 and to track completion in the Department's Corrective Action Tracking System (CATS). CATS will track two actions per program office: one for outstanding FRAs and one for outstanding QAPs.
Deliverable: Updated FRAs and QAPs (or equivalent documents)
Responsible Individual: Joe Hassenfeldt (I-CAM Chair)
Date of Initiation: June 19, 2000
Expected Date of Completion: September 29, 2000
How it will be tracked to closure: SMIT Director will track initial completion statistics, outstanding FRA and QAP completion will be tracked in the CATS.
Completion verification method: Review by I-CAM team

Issue 2: "There needs to be a stronger link between the 98-1 and the DOE lessons learned program. Identification and dissemination of lessons learned during every step of the process execution was identified as one of the four principle system requirements in Section 5 of DOE's 98-1 Implementation Plan, to ensure a more proactive approach to the resolution of safety issues identified by EH-2." (Section 4.1)

Action 2: The Safety Management System Guide will be revised to strengthen this link.
Deliverable: Revised Safety Management System Guide.
Responsible Individual: Bud Danielson
Date of Initiation: ongoing
Expected Date of Completion: August 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Completion verification method: Review by I-CAM team

Action 3: The I-CAM team will prepare recommendations to improve the linkage between the lessons learned process and the corrective action management process and provide these to the responsible manager for the Department's lessons learned program.
Deliverable: Memo from the I-CAM to the Lessons Learned manager
Responsible Individual: Joe Hassenfeldt (I-CAM chair)
Date of Initiation: June 2000
Expected Date of Completion: August 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Completion verification method: Review by I-CAM team

Opportunity 1: "Some directives and procedures would benefit from additional guidance and clarification. (1) Documentation of responsibilities for maintaining the CATS system, producing the quarterly report from CATS for the Secretary, and any other responsibilities currently handled by ICAM that need to be continued past the end of September should be added to DOE M 411.1-1A to enhance understanding and keep responsibilities current." (Section 4.3.a.(1))

Action 4: The EH FRA document will be revised to clarify that EH-72 has the responsibility for maintaining the CATS system and EH-2 has the responsibility for producing the quarterly report on CATS for the Secretary.
Deliverable: Revised EH FRA document
Responsible Individual: Rich Stark
Date of Initiation: ongoing
Expected Date of Completion: August 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Completion verification method: Review by I-CAM team

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Action 5: The I-CAM team will prepare a charter for the coordinating body that will take over from the I-CAM. This charter will document how process responsibilities that need to continue beyond September 2000 will be handled.
Deliverable: Charter for Coordinating Body
Responsible Individual: Joe Hassenfeldt (I-CAM chair)
Date of Initiation: ongoing
Expected Date of Completion: August 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Completion verification method: Review by I-CAM team

Opportunity 2: "Some directives and procedures would benefit from additional guidance and clarification. (2) The determination by EH-2 reviewers of which concerns rise to the level of "safety issues" requiring formal corrective action and tracking within CATS could be improved to provide more clarity. This could be done by providing further discussion or examples within the EH-2 review protocol or in Appendix G of the ISMS Guide, as is already under consideration." (Section 4.3.a.(2))

Action: No further action required. The EH-2 protocols adequately address the definition of safety issues. The corrective action management process provides sufficient checks on EH-2 including: 1) line review and comment prior to finalization of EH-2 reports and safety issues, and 2) line disposition, including potential rejection, of EH-2 identified issues. The I-CAM and EH-2 judge that the current process is working adequately and no further action is warranted.

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Opportunity 3: "Some directives and procedures would benefit from additional guidance and clarification. (3) The ISM Team Leader's Handbook should be reviewed to determine whether it should be revised to include in future ISM verifications a review of the process for dispositioning EH-2 oversight issues." (Section 4.3.a.(3))

Action 6: If the ISM Verification Team Leader's Handbook is going to be used in the future and if there is an intent to revise and update this Handbook, the I-CAM team will provide recommended changes and updates to the manager responsible for the update of the Handbook (Joe King).
Deliverable: Memo from the SMIT Director to the ISM Verification Team Leader's Handbook manager
Responsible Individual: Ted Wyka (SMIT Director)
Date of Initiation: June 2000
Expected Date of Completion: August 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Op *Completion verification method:* Review by I-CAM team

certain items are open or closed, and appropriate steps should be taken to reduce or eliminate the problem." (Section 4.3.d.(2))

Action 10: The CATS system will be modified to link the "approved" field with the "approval date" field. This will prevent contradictory information for all future CATS items.
Deliverable: Revised CATS System
Responsible Individual: Betty Beavers
Date of Initiation: June 2000
Expected Date of Completion: Complete
How it will be tracked to closure: None required.
Completion verification method: Review by I-CAM team

Opportunity 7: "Enhancements to the CATS system would improve its effectiveness. (3) Capability to sort status of actions by field office would be useful." (Section 4.3.d.(3))

Action 11: The CATS system will be revised to add the capability to sort status of actions by field office.
Deliverable: Revised CATS system
Responsible Individual: Betty Beavers
Date of Initiation: June 2000
Expected Date of Completion: July 2000
How it will be tracked to closure: I-CAM Chair will maintain status
Completion verification method: Review by I-CAM team

Prepared by: Joseph J. Hassenfeldt
Joseph Hassenfeldt, I-CAM chair

Concurred by: Steve Scott
Steve Scott, I-CAM chair

Approved by: 7-18-00
Ted A. Wyka, SMIT Director