

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

INTEGRATED SAFETY MANAGEMENT SYSTEM PHASE I VERIFICATION

FINAL REPORT  
Volume I

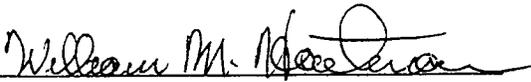


April 1999

U.S. Department of Energy  
Washington, D.C.

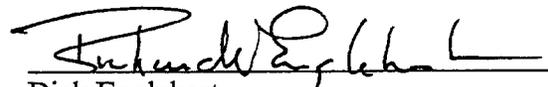


I, by signature here, acknowledge that I concur with the TEAM LEADER in the findings and conclusions of this report in my assigned functional area.

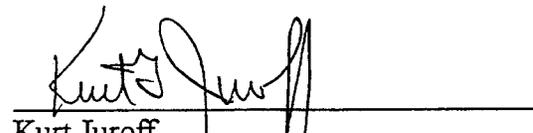
  
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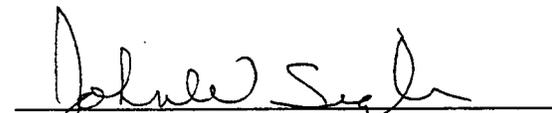
  
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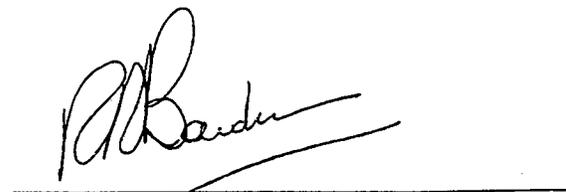
  
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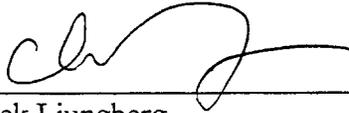
  
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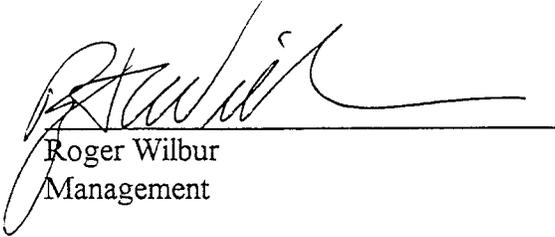
  
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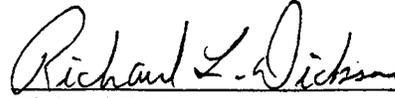
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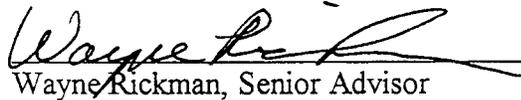
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## EXECUTIVE SUMMARY

The Department of Energy (DOE) commits to accomplishing its mission safely. To this end, contractors must integrate safety into management and work practices at all levels so that programs, processes, and objectives are achieved while protecting the public, the worker, and the environment. The contractor is required to describe the integrated safety management system to be used to implement the safety performance objective. To ensure these objectives are met, the Department issued a Safety Management System Policy 450.4 (P 450.4), and the DOE Acquisition Regulations (DEAR, 48 CFR 970.5204-2 and 970.5204-78).

This report documents the results of the review conducted to verify: (1) that the Idaho National Engineering and Environmental Laboratory (INEEL) Integrated Safety Management System (ISMS) Description (PDD-1004, Revision 1) and supporting program and process documents conform to the guidance provided by the DOE Management; and (2) that DOE Idaho Operations Office (DOE-ID) has documented responsibilities and processes that integrate their safety activities and oversight with those of the INEEL ISMS. The general conduct of the review was consistent with the direction provided by the Under Secretary's Memorandum of March 1997, Protocol for Review and Approval of Documented Safety Management System Descriptions Associated with Defense Nuclear Facilities, and the Integrated Safety Management System Guide P 450.4-1.

This team was tasked with verifying that the ISMS Description was responsive to the P 450.4, DEAR 970.5204-2 and 970.5204-78, and the July 29, 1998 Contracting Officer's guidance and with recommending to the DOE-ID Manager whether or not to approve the ISMS Description. In addition, some aspects of INEEL ISMS were previously reviewed as part of the recent accident investigation and the results documented in that report provided valuable insight into the status of ISMS. That report was utilized by this Verification Team so that previously identified deficiencies were not repeated, but the currently described ISMS was evaluated to determine that lessons learned in the previous review had been incorporated.

To conduct the review, the team was divided into four functional area review teams. The functional areas were: Business, Budget and Contracts (BBC); Management (MG); Hazard Identification and Standards Selection (HAZ); and DOE-ID (DOE). These teams conducted their review over a period of approximately three weeks on site. The reviews were conducted using Criteria and Review Approach Documents that were based on the Core Functions and Guiding Principles from the DOE policy and associated guide. Summaries of the reviews are contained in Appendix A with details in Volume II.

## COMMENTS

The team found the PDD-1004, Revision 1 to be responsive to the requirements of P 450.4, the DEAR Clause, and the DOE contracting officer's guidance. It is an excellent road map to the INEEL ISMS through the integrated programs. Of special note

are the sections that describe the ISMS infrastructure, line management responsibilities, and the integration of the requirements management program with the competence commensurate with responsibility process. The Verification Team observed that the competency process could be utilized to improve the training and qualification program for certain disciplines such as safety analysis, and radiological protection engineers.

DOE efforts have been integrated with those of Lockheed Martin Idaho Technology Company (LMITCO) under a common Project Office structure to further implementation of ISMS at INEEL. The Verification Team observed that some DOE-ID processes are lagging and are not well documented, and opportunities exist to more fully involve the DOE-ID staff beyond the Office of Program Execution as ISMS is implemented. The DOE-ID self-assessment program needs to be developed and put in place along with a strengthened quality assurance program per DOE Order 414.1. DOE-ID senior management leadership will need to continue and complete DOE-ID staff involvement will be required during the upcoming contractor transition to ensure the ISMS Description is implemented without significant changes.

It was clear to the Verification Team that senior line managers in both DOE-ID and LMITCO are engaged and leading efforts to implement ISMS at INEEL. All of the line managers, in the organizations that were reviewed, were positive with regard to the INEEL ISMS effort and were preparing for full implementation consistent with senior management policy and tailored direction. Line Managers are responsible for safety in the conduct of work in their organizations. Although the line management roles and responsibilities are clearly defined in the Site Operations Manual, program responsibilities for scope, cost, and schedule must continue to be managed at Senior levels to remain integrated with facility manager and Site Area Director responsibilities for directing and conducting work. The managers utilize the Operational Excellence Program, the Executive Steering Group, the Senior Operations Review Board, a Plan of the Day, and the Facility Excellence Program assessments as mechanisms to initiate and continuously improve the safety management system and in particular Conduct of Operations and Conduct of Maintenance implementation.

Other feedback and improvement mechanisms, such as self-assessment, trending, corrective action, and lessons learned programs, have recently been upgraded and put in place by the contractor's Office of Independent Oversight and Trending. The Verification Team concluded that these feedback mechanisms are well-structured and documented, but management attention will be required to ensure this new process will improve as it matures.

The work force has enthusiastically welcomed the opportunity to have increased participation in assuring their abilities to perform work safely. LMITCO has a number of good mechanisms in place such as their Voluntary Protection Program (VPP), the Worker Applied Safety Program (WASP) the Lockout/Tagout Mentoring Program, and the Company Employee Safety Team (CEST) to further implement their worker involvement safety principle.

The team was concerned that procedures are not in place to effectively integrate the sets of facility hazards and environmental hazards into the various processes available for hazards categorization and analyses. This issue was briefed to senior management, both LMITCO and DOE-ID, and various corrective actions were discussed. DOE-ID and LMITCO should review this issue to determine the appropriate action in order to strengthen their hazards identification, categorization, and analyses processes.

The INEEL ISMS mechanisms include the contractor's manuals, requirements documents, and procedures which have been significantly revised to reflect the lessons learned (including lessons learned from other DOE sites and Lockheed Martin companies) as ISMS was developed. Implementation of ISMS will be a large challenge due to the amount of training required on the new procedures concurrent with a number of other INEEL workload drivers in the coming months including ongoing work and upcoming milestones, contractor transition, and corrective action implementation from the recent fatality.

The number of ISMS issues related to engineering support activities suggests that Engineering Support could be better integrated into the operation of INEEL. While any single issue is not of the significance to warrant organizational restructuring, the total of these concerns suggests that an organizational review of Engineering Support would assist in improving the Engineering Support integration.

If the coordination between the new contractor and DOE-ID can continue and the new contractor continues to pursue the three efforts below with the attitude and accountability demonstrated in this review, then chances for full, successful implementation of ISMS will be increased.

- Within LMITCO, there were two organizational aspects that contributed to the successful development of the ISMS. The first was the establishment of the Site Operations Director and the establishment of Site Area Directors. That allowed the standardization and formalization of the establishment of ES&H hazard control and the standardization of the methodology for the verification of readiness and authorization of work execution.
- The second important action taken by LMITCO was the use of project management tools and procedures (including detailed WBS) to correct the identified gaps in the ISMS. The use of the project controls allowed detailed accountability with specific dates. Without the utilization of these two organizational processes, the readiness for full implementation of the System would have been very deficient.
- In addition to the above processes, the development, implementation and execution of the VPP program has led to a strong work force participation in identification of safety hazards and the development and implementation of the controls for those hazards. The enthusiasm demonstrated by the workforce should assist in the implementation of improvements in the System.

## CONCLUSIONS

We recommend that the DOE-ID Manager approve the INEEL ISMS Description (PDD-1004) upon correction of the five system description issues identified in Section 3.0.

Also, we recommend that the DOE-ID Manager proceed with the schedule as outlined in the current implementation plans for Phase II verifications of selected facilities to evaluate the implementation of the described ISMS.

## NOTEWORTHY PRACTICES

### LMITCO

**Use of Project Management Tools for Implementation of ISMS.** The implementation plans and project schedules have been developed to guide completion of a very ambitious and demanding schedule, and project controls with detailed accountability and due dates.

**Business Management Practices.** Business management systems are well established, mature and applied consistently throughout the company. Line managers demonstrated excellent knowledge and made full use of the business management systems to plan, execute and evaluate their programs.

**Worker Involvement.** Worker initiatives are being institutionalized with program requirements, documents, and procedures. LMITCO has established a Company Employee Safety Team (CEST) as a forum for employees to be involved directly in the safety and health processes. The LMITCO workers have also developed the Worker Applied Safety Program (WASP) to perform observations. A checklist guides the observer to focus on targeted safety-related behaviors.

**Positive Attitude of LMITCO Personnel toward ISMS.** Throughout this review, the positive attitude of senior management, line management, support personnel, and workers, demonstrated a sense of personal responsibility and demonstrated a consistently positive attitude toward ISMS implementation at INEEL.

**Site Operations Manual.** LMITCO has a well-constructed program in place with the Site Operations Manual, PDD-1005, which is very comprehensive regarding roles and responsibilities and the development of the operations organization concept that uses Site Area Directors reporting to a Deputy Vice President for Site Operations. This ensures common and consistent conduct of operations and maintenance, a trained workforce, and embeds integrated safety management system principles in all work accomplished at the site.

### **Other Strong Support Programs.**

- Facility Excellence Program
- Emergency Preparedness Program
- Environmental Management System
- Integration of feedback, Issues Management and Performance Measures and Trending Program

## **DOE-ID**

**Management of Contractor Execution of Programs.** Within OPE, the Operations plan for management of the contractor's execution of programs has been well thought out and the system of Facility Directors, Facility Engineers, and Facility Representatives, supported by Subject Matter Experts is effective.

**Operations Excellence Program.** The Operational Excellence Program has been effective in driving many of the activities necessary for ISM implementation.

**VPP and Worker Involvement.** DOE-ID personnel have demonstrated a positive attitude towards ISMS. DOE-ID encouragement of the VPP program and involvement with the unions on site has had a positive impact in getting the workers involved with ISM.

**Environmental Management System.** The INEEL EMS is modeled after ISO 14001 in response to DOE direction. This will facilitate INEEL (and DOE) registration for ISO 14001.

## OPPORTUNITIES FOR IMPROVEMENT

### LMITCO

**Configuration Management.** The level of configuration management program development is not yet mature enough to ensure that an adequate program will exist. Configuration management for non-process software systems, e.g., PASSPORT, is not scheduled to be developed until the next phase of the configuration management program, which could impact the ability to perform work safely.

**Integration of Environmental Hazards and Controls.** The Team noted that the sets of facility safety and health hazards and facility environmental hazards are not integrated in the processes and procedures that are utilized to determine facility categorization, hazard analysis and the establishment of controls for those hazards. This issue was briefed to all levels of LMITCO management and various methods of corrections were discussed.

**Flow down of Requirements.** Complete flow down of requirements has not been demonstrated for all requirements, including radiological control, engineering design.

**Training and Qualification Programs.** There is a lack of formal documentation of training, and qualification/re-qualification program for personnel assigned to conduct hazard assessments, hazard controls determinations and hazard reviews. Also training and qualification programs for the radiological engineer require improvement to ensure competence commensurate with assigned responsibilities.

### DOE-ID

**Safety Panel for SER and AA.** The ID approval authority for safety basis and Authorization Agreements could benefit from a senior safety panel to provide a management level review of Safety Evaluation Reports and AA(s).

**Strategic Plan for ISMS.** Strategic and detailed planning for ID ISMS implementation is needed to assure completeness and the resulting activities should be assigned, and tracked to completion, as a project.

**Quality Assurance Program and Self Assessment Program.** The ID Quality Assurance Program Plans need to be completed, in accordance with O 414.1, and need to address all ID work, not just hardware design and procurement.

**Training.** There is an opportunity to improve the ID training program by establishing technical training coordinators to each office, who can work with HR in updating the ID training database and facilitate access to specialized training needs.

**Feedback and Improvement Processes for DOE-ID.** Feedback and improvement processes that have been planned and are under development are largely objective and statistical in nature. A formalized method of providing a management level subjective evaluation of contractor performance is necessary because objective measures can be misleading and incomplete.

## 1.0 INTRODUCTION

Safety Management System Policy 450.4 (P 450.4) defines the expectations that DOE facilities will be operated in accordance with an Integrated Safety Management System (ISMS). The DEAR, 48 CFR 970.5204-2 further require that the Contracting Officer (Idaho Operations Office [ID] Manager) provide guidance to the contractor as to the expectations for the ISMS Description. The DOE-ID Manager guidance and expectations for the Idaho National Engineering and Environmental Laboratory (INEEL) were provided to the contractor by letter J. M. Wilczynski to W. John Denson, Subject: System Description Document Development and Implementation for Contract DE-AC07-94ID13223 (OPE-OS-98-041), dated April 2, 1998. This guidance was updated by letter J. M. Wilczynski to W. John Denson, Subject: Transmittal of Revised Contracting Officer Guidance On Integrated Safety Management System Description Document Development and Implementation for Contract DE-AC07-94ID13223 (OPE-OS-98-104) dated July 29, 1998 (Appendix III of the Review Plan in Volume II). Lockheed Martin Idaho Technologies Company (LMITCO) submitted the proposed Integrated Safety Management System Description Document (PDD-1004 dated August 27, 1998) for approval on August 31, 1998, (Letter WJD-116-98) in accordance with the direction provided by the DOE-ID Manager and the provisions of the DEAR. The ISMS Description Document (PDD-1004, Revision 1) was reissued on March 12, 1999, reflecting changes to Contractor organization, procedures, and management systems, implementation lessons learned, and development and implementation of the Corrective Action Implementation Plan associated with the Type A Accident Investigation Team Report prepared following the July 1998, worker fatality as well as other changes and clarifications from the August 1998, version.

Each site within DOE is to verify that the ISMS Description: 1) fulfills the expectations of the Head Contracting Authority, meets the requirements of the DEAR and the DOE Policy for Safety Management Systems; and 2) that the Description is implemented. The verification reviews are to be conducted in accordance with the protocol for the ISMS Verification process specified by Under Secretary of Energy Memorandum of March 1997, Protocol for Review and Approval of Documented Safety Management System Descriptions Associated with Defense Nuclear Facilities; and DOE G 450.4-1, Integrated Safety Management System Guide. As described in the Verification Protocol and the ISMS Guide, the ISMS Verification will be conducted in two phases. The ISMS Verification Phase I is to verify the adequacy of the description and the ISMS Verification Phase II is to verify implementation of the ISMS which was reviewed during the ISMS Verification Phase I. This report is for the ISMS Verification Phase I at INEEL.

The DOE-ID Manager appointed Joseph Arango as Team Leader for the ISMS Verification Phase I in his memorandum dated February 19, 1999 (Appendix III of the Review Plan in Volume II). The tasking memorandum specified the scope of the review and the desired deliverables. The Team Leader assembled and trained a 17 member team using personnel from Idaho, Headquarters and other DOE sites in order to achieve a mix of expertise and experiences that resulted in a balanced review. The team was divided into four functional area review teams. The functional areas were: Business, Budget and Contracts (BBC); Management (MG); Hazard Identification and Standards Selection (HAZ); and DOE-ID (DOE).

## **1.1 Purpose**

The purpose for the INEEL ISMS Verification Phase I was to provide a recommendation to the DOE-ID Manager whether or not to approve the ISMS Description that was submitted by LMITCO, and to delineate areas, if any, in which the ISMS Description does not conform to the previous guidance. In assessing the adequacy of the ISMS Description Document, the Verification Team considered supporting program and process documents, gap analysis, and the ISMS implementation plans to confirm that supporting processes and planned actions will result in effective implementation.

## **1.2 Scope**

The scope of the INEEL ISMS Verification Phase I included the ISMS for all INEEL facilities and activities managed and operated by LMITCO under Contracts DE-AC07-94ID13223 and DE-AC07-94ID13299 including the integration with DOE-ID. The Naval Reactors Facility, Argonne National Laboratory-West, Advanced Mixed Waste Treatment Project, and the DOE-ID Radiological and Environmental Sciences Laboratory were excluded from the scope of this review. The ISMS Verification Phase I evaluated the adequacy of the INEEL ISMS Description when compared to the expectations of the DOE-ID Manager and the requirements of the DEAR and the DOE Safety Management System Policy. In assessing the adequacy of the ISMS Description Document, the ISMS Verification Team considered supporting program and process documents, gap analysis, and the ISMS implementation plans. By reviewing supporting documents, gap analysis, and implementation plans, the ISMS Verification Team was able to draw conclusions as to the adequacy of the ISMS when implemented at the INEEL. This approach also assessed the adequacy of the implementing and integrating mechanisms of ISMS. The scope of the review at INEEL included all nine ISMS Core Expectations (Appendix II of the Review Plan in Volume II) included in the ISMS Verification Team Leader's Handbook, which resulted in evaluation of the core functions and guiding principles for Integrated Safety Management as defined in the P 450.4. The mission, major processes, and hazards of INEEL are summarized in the following table.

Table 1: Overview of INEEL

<p><b>Mission</b></p>	<p>The published mission states that INEEL is a multi-program laboratory whose primary mission is to provide the nation with innovative nuclear technologies and with unique scientific and engineering capabilities in non-nuclear programs that provide commercialization potential or enhance the quality of the environment. Areas of primary emphasis include nuclear reactor technology research and development, waste management and environmental restoration, advanced energy production, defense-related support, safety and health, technology transfer, education, and non-nuclear research and development projects.</p>
<p><b>Major Processes</b></p>	<p>The INEEL site has nine separate industrial sites, each designed for specific operations. Some of the larger or more significant sites are:</p> <ul style="list-style-type: none"> <li>• The Test Area North (TAN) located at the northern part of the site, which supports the Specific Manufacturing Capability program (U.S. Army tank armor), hot cell work, cleanup, decontamination and decommissioning activities, and fuel storage.</li> <li>• Facilities and operations for wet and dry storage of irradiated and unirradiated nuclear fuel and storage and treatment of high-level waste are located at the Idaho Nuclear Technology and Engineering Center (INTEC) in the south central part of the site.</li> <li>• Storage of a variety of low-level, mixed, and transuranic wastes in burial grounds, retrievable storage pads, and enclosed storage facilities is located at the Radioactive Waste Management Complex (RWMC), in the southwestern part of the site.</li> <li>• The Test Reactor Area (TRA), located in the south central part of the site, includes one operating test reactor (Advanced Test Reactor), one operating critical facility reactor (Advanced Test Reactor Critical), four defueled reactors, storage of spent fuel, hot cells, consolidated storage of strategic quantities of special nuclear material, and the Nuclear Materials Inspection and Storage Facility (NMIS), a repository for unirradiated fuel.</li> </ul>
<p><b>Hazards</b></p>	<p>Deteriorating fuel; industrial hazards of high voltage, high noise, chemicals, construction, earth-moving, and materials handling; chlorine gas. Radiation exposure and contamination from high-level liquid wastes and high-level radioactive calcine; excavation; nonradiological and radiological hazardous materials with release potential; hazardous organic (for example, trichloroethylene) and mixed wastes in soil and perched water zones. Low-level radioactive and hazardous industrial wastes; airborne radionuclides, occupational hazards associated with processing heavy metals that contain radionuclides and are pyrophoric. Criticality associated with the storage of irradiated nuclear fissile materials.</p>

### 1.3 Overall Approach

The ISMS Verification Team reviewed the ISMS Description that was submitted to the DOE-ID Manager for approval against the overall objective of Integrated Safety Management which is described as follows:

*"The Department and contractors must systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of safety management into all facets of work planning and execution. In other words, the overall management of safety functions and activities becomes an integral part of mission accomplishment."*

The ISMS Verification Phase I Team reviewed LMITCO's five major work processes: operations, maintenance, research, construction, and environmental remediation/D&D. The BBC, HAZ, and MG sub-teams evaluated these work processes by sampling across a spectrum of site areas/facilities including the ATR, RWMC, Waste Reduction Operations Complex (WROC), Big Shop, and a Laboratory facility.

The DOE-ID functional area sub-team reviewed the DOE-ID management of mission programs and certain key ISMS functions. The specific areas evaluated by the DOE sub-team included work authorization and oversight.

#### 1.3.1 Sequence of Activities

The first step in the ISMS Verification process was to provide training and interaction among the team members to ensure an adequate understanding of the DOE ISMS Policy expectations, the specific ISMS Description presented by LMITCO, and the plan and strategy for the review. As a final action of this initial effort, the team completed preparation of the Criteria and Review Approach Documents (CRADs) which guided the review. The final CRADs are attached in Volume II of this report as part of the Review Plan. The indoctrination period, including development of the CRADs and some initial briefings, was conducted at INEEL several weeks prior to the start of the ISMS Verification.

The ISMS Verification Phase I review concluded during a two-week period following preparation of the Review Plan, development of the CRADs, and completion of the team indoctrination. The review consisted of completion of the set of briefings from LMITCO and DOE-ID to the team during the first week, as well as interviews and document reviews. The second week consisted of the actual verification of the documentation and ISMS Description, the completion of the Assessment Forms, the preparation of the Final Report, and related activities.

### **1.3.2 Completion of the Assessment Forms**

During the second part of the Verification, the team members completed their evaluation of the criteria in the individual CRADs that supported conclusions as to whether the individual objectives had been met. The evaluation of the criteria was based on the ISMS presentations coupled with the verification conducted during the second week. The presentations and persuasive discussions by the individual responsible Managers who presented and defended their ISMS at their individual levels of responsibility were important input. The review of the individual CRADs assessed both the adequacy of the ISMS Description and the adequacy of supporting program and process documents, gap analysis, and the ISMS implementation plans with regard to work being done safely and in accordance with the principles and functions of P 450.4. The record of the evaluation is found on the Assessment Form. Detailed instructions for completing the Assessment Form were provided to the ISMS Verification Team prior to and during the review. An Assessment Form was prepared for each Objective in the CRADs and documents the basis for the conclusions reached concerning the objective and criteria. Each Assessment Form concludes with a set of numbered issues or observations which are rolled up to "Opportunities for Improvement" in the Executive Summary of this report. Issues identified during the review of the individual CRAD which warranted the attention of the DOE-ID Manager or senior LMITCO management are included in the "Opportunities for Improvement" and supported by additional detail on the Assessment Forms. Good practices and strengths of the ISMS are numbered and identified as well on the Assessment Forms and rolled up as "Noteworthy Practices" in the Executive Summary. The completed Assessment Forms are included in Volume II of this report.

### **1.3.3 LMITCO and DOE-ID Preparations**

The responsible LMITCO and DOE-ID Managers presented their vision of ISMS, consistent with the Description, to the Verification Team. It was important that the individual Managers had an understanding of the expectations of the ISMS Verification and had an understanding of the DOE-ID expectations for ISMS and the commitments and processes that were provided in the INEEL ISMS Description. The ISMS Verification Team Leader and the team members made every effort to enhance the understanding of the LMITCO Managers of their expectations.

The briefings consisted of LMITCO and DOE-ID making presentations to the Team to describe how the submitted ISMS Description fulfills the expectations of P 450.4, the ISMS DEAR clauses, and the requirements of the DOE-ID Manager as specified in the Manager's communication to LMITCO. The briefings included identification and a brief description of supporting program and process documents, the gap analysis, and the ISMS implementation plans. These presentations also described the integration of safety management between LMITCO and DOE-ID, and within LMITCO. At the conclusion of the presentations, the ISMS Verification Phase I Team reviewed documentation, interviewed selected personnel, and completed the other necessary actions to support the review.

### **1.3.4 Process for ISMS Review**

The ISMS Verification Team was divided into four sub-teams based on functional area as defined below.

DOE-ID (DOE): The DOE-ID functional area sub-team reviewed the DOE-ID management of mission programs and certain key ISMS functions. The specific areas evaluated by the DOE sub-team included operations authorization and oversight.

Business, Budget and Contracts (BBC): The BBC functional area sub-team addressed the DOE-ID and LMITCO team processes for translating missions into work, setting expectations, identifying and prioritizing tasks, and allocating resources.

Hazards Identification and Standards Selection (HAZ): The HAZ functional area sub-team addressed the DOE-ID and the LMITCO processes for ISMS relating to hazard analysis and the processes related to the identification of safety standards and requirements and the tailoring of controls to the work being performed. In particular, this sub-team reviewed the processes and procedures for research work as well as other types of operations or maintenance work. In addition, this sub-team reviewed line management responsibilities and feedback as they relate to hazard identification and standards selection.

Management (MG): The MG functional area sub-team addressed the definition of contractor roles and responsibilities, specifically that line management responsibilities are documented and include the five core functions. In addition, the management functional area reviewed the ISMS Description for responsiveness and the feedback and improvement functions including the contractor's quality assurance program.

The MG functional area also addressed contractor procedures and how those procedures lead the contractors to perform the five core safety management functions. In addition, this sub-team verified that the core functions of ISM were met for work control in a manner that is consistent with the ISM guiding principles. The specific disciplines of industrial hygiene/industrial safety, environmental management systems/environmental compliance, radiological controls, emergency preparedness, lockout/tagout, and configuration management were evaluated using the MG.4 CRAD.

The ISMS Verification Phase I Team reviewed LMITCO's five major work processes: operations, maintenance, research, construction, and environmental remediation/D&D. The BBC, HAZ, and MG sub-teams evaluated these work processes by sampling across a spectrum of site areas/facilities including the ATR, RWMC, WROC, Big Shop, and a Laboratory facility.

### **1.3.5 Meetings and Presentations**

Part one of the review included presentations by LMITCO and DOE-ID to the ISMS Verification Phase I Team. The purpose for the presentations was to provide an opportunity for the team to become familiar with the ISMS Description as well as the supporting program and process

documents, gap analysis, and the ISMS implementation plans. The presentations provided an opportunity for LMITCO and DOE-ID to describe the manner in which the elements of ISM described in the various programs were integrated both vertically and horizontally to result in an ISMS which fulfills the expectations for P 450.4 and the DEAR requirements. The ISMS Verification Phase I Team utilized the information provided during the presentations as a part of the verification that the criteria and the objectives in the individual CRAD were met. Additional interviews, record reviews, and other activities clarified and validated the information in the briefings.

Information was provided concerning INEEL missions; recent past, current, and future planned activities; how the ISMS will be implemented for specific Site Areas and activities through the documents identified; and the infrastructure and processes supporting ISMS. The information was provided by senior LMITCO line managers, by DOE-ID line managers, and by others who had information which could assist the Team in the development of an accurate understanding of the INEEL ISMS.

The INEEL ISMS Verification Phase I was an open process with the goal of maximizing the opportunity to achieve a full understanding of the INEEL ISMS. This in turn resulted in an accurate assessment of the adequacy of the Description, a recommendation to the DOE-ID Manager concerning approval, and an assessment of the adequacy of the supporting program and process documents, gap analysis, and the ISMS implementation plans. In order to achieve the level of openness and coordination which was desired, the team met daily to discuss observations and issues. Site personnel attended these team meetings in limited numbers as observers. The Team Leader and Advisor met as necessary with senior LMITCO and DOE-ID management to ensure that they were fully informed of the progress and issues during the ISMS Verification Phase I.

Following the review portion of the ISMS Verification Phase I, the Team Leader conducted an outbrief with LMITCO and DOE-ID Managers. The briefing included the results of the review, the basis for the recommendation that was made to the DOE-ID Manager concerning approval of the INEEL ISMS Description, and issues concerning the adequacy of supporting program and process documents, gap analysis, and the ISMS implementation plans.

## **2.0 ASSESSMENT OF INEEL ISMS**

This section provides a summary of the ISMS Verification results at the DOE-ID and the LMITCO corporate level, with emphasis on noted deficiencies or recommendations relative to the eight principles described in the ISMS Description. More detailed summaries for each sub-team functional area are included in Appendix A. The guiding principles of safety management provide the essential criteria for evaluating line management's performance in establishing an effective safety management program, identifying the requirements that apply to work processes, and ensuring that the necessary analysis and controls processes have been established to ensure that work can be performed safely and in an environmentally sound manner. The principles provide a

useful framework and tool for analyzing strengths and weaknesses in the description of safety management programs. Eventual weaknesses in program implementation can frequently be directly related to weaknesses in management's implementation of the guiding principles.

## **2.1 Corporate Evaluation**

This section summarizes the Phase I Verification results according to the eight guiding principles described in the ISMS Description. The focus of the Phase I was on the INEEL ISMS Description, PDD-1004 (Revision 1), and the associated infrastructure provided by its supporting documentation. The Verification Team included the gap analysis and the ISMS implementation plans in their review.

The gap analysis was completed by LMITCO and delivered to DOE-ID in August 1998, identifying a set of 25 gaps that required resolution in order to implement ISMS. Action plans for each gap were developed and incorporated into the ISMS Project Office schedules with responsibilities assigned for completion of each action. Actions were completed and closed in support of the Phase I Verification and the remaining actions for the Phase II Verification continue to be tracked to closure.

The ISMS implementation plans developed jointly by the DOE-ID and LMITCO ISMS Project Office include a Project Execution Plan for the ISM office (PLN-464), a work breakdown structure, and detailed project schedules. Senior DOE-ID and LMITCO line managers are actively engaged in directing and monitoring the scheduled actions in order to implement ISMS. The Verification Team concluded that, although there is a lot of work yet to be done to implement the described ISMS, the projectized approach is a strength in that it clearly identifies the scope of the effort.

### **Line Management Responsibility for Safety: Line management is directly responsible for the protection of the public, the workers, and the environment.**

Line Management is clearly identified as responsible and accountable for protection of the public, workers, and the environment. Documentation and established processes both identify the responsibility and accountability, and provide the framework for implementation. Line management is involved in the definition and budgeting of work, and is directly involved in the prioritization, authorization and execution of the work. Responsibility for hazard identification and safety analysis, including development of control sets, clearly rests with the Site Area Director and Facility Managers. Work is not authorized to begin or continue unless the work is scheduled and approved via line management's Plan of the Day. The integration of feedback on work processes, oversight, and continuous improvement is captured in the performance measures and trending program, which results in promoting facility excellence.

### **Noteworthy Practices:**

Facility Excellence Walkdown Program is an effective mechanism for continuous facility improvement.

The level of communication and coordination between the business management directorate staff and the line organizations that they service was effective. Line managers demonstrated excellent knowledge and made full use of the business management systems to plan, execute and evaluate their programs.

Opportunities for Improvement:

Numerous boards and committees have been established or are being put in place as described in the Site Operations Manual (PDD-1005) and other documents. While PDD-1005 presents a fully integrated picture, ID and the contractor should review and define the need to continue to use separate boards and committees to perform all these functions after the ISMS has been fully implemented.

The rapidly dynamic nature of the change process currently in progress on the draft forms of STD-101, the "Integrated Work Control Process," indicate that contractor Line Management will have to continue to very closely manage the associated training now in development, and the implementation of the final STD-101 version.

**Clear Roles and Responsibilities: Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the Department and its contractors.**

Clear roles and responsibilities are stated for all contractor employees, categorized into the subgroups of workers, supervisors/foremen, Department Managers, Vice Presidents/Directors, and the President and CEO. The roles, responsibilities and authorities for financial and project management processes and the integration of safety into those processes are clearly defined. The roles and responsibilities for business management processes are also clearly defined, and understood by both business and line management. Finally, the roles and responsibilities, and authority and accountability to ensure work is done safely are clearly defined for line management.

Noteworthy Practices:

ISMS has been projectized at the INEEL. Implementation plans and project schedules have been developed to guide completion of a very ambitious and demanding schedule, and project controls with detailed accountability and dues dates have been put in place.

DOE-ID and contractor management, support personnel, and workers at all levels possess a clear understanding of their ISMS efforts and demonstrated a consistently positive attitude toward ISMS at INEEL.

LMITCO has a number of strong or well-constructed programs in place: Site Operations, PDD-1005 is very comprehensive regarding roles and responsibilities; the feedback, issues management, and performance measures and trending programs are all highly integrated; the environmental management system is based on ISO 14001; the emergency preparedness program is well

documented and mature. Even worker initiatives are being institutionalized with program requirements documents and procedures.

Opportunities for Improvement:

The level of Configuration Management program development is not yet mature enough to ensure that an adequate program will exist. Configuration management for non-process software systems, e.g., PASSPORT, is not scheduled to be developed until the next phase of the Configuration Management program, which could impact the ability to perform work safely.

**Competence Commensurate with Responsibilities: Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.**

The experience, knowledge, skills and abilities necessary for personnel to successfully discharge their responsibilities can be assured through the Competence Commensurate with Responsibilities (CCR) process. The CCR process is a comprehensive method for ensuring that all the proper qualification will be considered to hire and train competent persons, and maintain competence throughout employment via continuing training. The CCR process is adaptable to all work disciplines. Practices for identifying participants in hazard identification and analysis and for assuring that their competency is appropriate for their assigned duties are not sufficiently formal.

Opportunities for Improvement:

Procedures do not assign responsibility to specific persons or positions for selecting those who participate in hazard categorization or analysis of facilities.

LMITCO lacks adequate formal establishment and documentation of training/ continuing training requirements, and qualification/re-qualification programs for some personnel assigned to conduct certain hazard assessments, hazard controls determinations and hazard reviews.

Processes are not in place to assure personnel assigned to perform hazard identification, analysis, and control determination have competence to properly execute those tasks.

Training and qualification programs in some areas require improvement to ensure competence commensurate with assigned responsibilities, including for radiological engineer training and qualification.

**Balanced Priorities: Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed.**

The contractor has a mature program control process, the Project Cost and Schedule Controls System (PCASC), which is particularly effective in providing direction and guidance to program managers, directors, planners, and ESH&QA managers for the development and control of work packages and budgets. PDD-1005 describes the site's management structure and responsibilities,

which can provide further integration of facility and site management with the budgeting and project work control systems (PCASC). The integration incorporated into PDD-1005 provides the necessary checks between program and facility needs that is critical to ensuring priorities remain balanced between getting work done and ES&H.

Aspects of the feedback and improvement process, specifically the lessons learned and issue management systems also contribute to ensuring priorities are balanced. Issues are systematically analyzed for impacts and underlying root causes. Information from deficiencies, and analysis provided by the issue management, trending, and other feedback mechanisms provide the necessary inputs to the lessons learned process.

The core ES&H infrastructure process is being developed. This process will allow management to vertically and horizontally integrate ES&H activities with strategic goals. In providing this integration, the process provides a mechanism for the Site Operations Director and senior management to maintain an appropriate level of safety regardless of funding source and limitations.

Noteworthy Practices:

Effective communication and coordination between business management and line organizations results in excellent knowledge and use of business management systems by line management to execute and evaluate programs.

Business management systems are well established, mature and applied consistently throughout the company. Two of the strongest areas are cost accounting and the well-defined, graded approach for project cost and schedule controls.

**Identification of Safety Standards and Requirements: Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of safety standards and requirements shall be established which, if properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.**

The Integrated Requirements Management Program within LMITCO was reviewed and found satisfactory. Specific requirements flow-down concerns can be addressed in lower tier procedures. Fundamental processes for incorporation of requirements in the contract and for flow-down of those requirements in contractor documents are adequate.

There are processes and programs for identifying and incorporating requirements into work controls and applicable facility operations. The process is adequate to cause DOE directives to flow-down into contractor work.

### Noteworthy Practices:

The INEEL Safety Analysis Committee (SAC) integrates safety analysis standards, policy and procedures. The INEEL presently consist of thirty nuclear facilities and approximately forty radiological and other industrial facilities. The SAC develops appropriate methods for the hazard analysis of these facilities and ensures that consistent facility operating control sets are developed.

The INEEL Environment Aspect Identification Process and the results obtained are of excellent value.

### Opportunities for Improvement:

The flow down of engineering design requirements from the contract does not capture the integration of the ISMS core functions to “Identify and Analyze Hazards” and “Develop and Implement Controls” in the INEEL engineering design procedures.

While PDD-1004 clearly defines safety as encompassing environmental safety, this inclusive definition does not consistently flow down into the following hazards identification and safety control documents and procedures: PDD-5042, Facility Hazard Identification; Facility Hazards List; MCP-2449, Nuclear Safety Analysis; MCP-2451, Safety Analysis for Non-Nuclear Facilities.

Flow down of requirements has not been consistently demonstrated for all requirements, including radiological control requirements.

**Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated hazards.**

Procedures describe mechanisms for tailoring hazard controls to the work. Those descriptions are not clear for the processes to be employed in developing facility level controls for hazards. A graded approach is used, based upon judgements. However, descriptions lack clarity on selection of approach and selection of involved personnel, so provide no formal mechanism for assuring appropriate rigor.

### Noteworthy Practices:

Emergency Management Planning Hazard Assessment Program supporting development of EPZs and PAGs.

The STD 101 Integrated Work Control Process hazard identification process is particularly noteworthy. This process in conjunction with PRD-5042 (Pending) and the associated hazard list can become an integrated and comprehensive tool for the identification of activity level hazards.

Opportunities for Improvement:

The level of Configuration Management program development is not yet mature enough to ensure that an adequate program will exist. Configuration management for non-process software systems, e.g., PASSPORT, is not scheduled to be developed until the next phase of the Configuration Management program, which could impact the ability to perform work safely.

PRD-5042 is not linked to procedures for hazard categorization and assessment which trigger a review or analysis for all affected facilities.

Facility level environmental hazards data bases are not linked to facility personnel safety and health hazard data bases, and environmental hazards are not procedurally required to be included in systematic facility level hazard assessment processes.

PDD-1004 and PDD-1012 do not adequately describe and integrate the derivation of appropriate environmental safety controls.

**Operations Authorization: The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed-upon.**

Authorization Agreements (AA) are in place for category 1 and 2 nuclear facilities.

The new Integrated Work Control Process, as described in STD-101, can provide assurance that the conditions and requirements necessary to conduct work safely will be identified and agreed upon prior to work execution. Some of the work control procedures and processes are in the early stages of implementation and integration, and strong leadership is critical to continue implementation and integration of the process.

**Worker Involvement: Execution of the INEEL ISMS is focused where work is executed. Worker input and support, and effective processes must be present to ensure success of the ISMS.**

DOE-ID encouragement of the VPP program and involvement with the unions on site has had a positive impact in getting the workers involved with ISM.

Workers in line management and support organizations understand their roles in the ISMS, and demonstrate a consistently positive attitude toward ISMS implementation at the INEEL. The workers have initiated a peer observation safety program where one worker can provide feedback to another worker on safe job performance without management involvement. Additionally, workers have initiated a Lockout/Tagout (LO/TO) Mentoring Program to help achieve zero defects in the execution of LO/TO on the INEEL.

## Noteworthy Practices:

Worker initiated peer observations and LO/TO mentoring programs indicate proactive support for ISMS at the INEEL at the worker level.

### **2.2 Department of Energy Evaluation**

The DOE functional area assessed the processes and procedures of DOE-ID for interfacing with the contractor's organization to ensure that work is performed safely and to provide for feedback and improvement through an oversight program. The assessment concluded that DOE-ID has in place the processes to implement ISMS. The Office of Program Execution's (OPE) plan for management of the contractor's execution of programs, involving DOE-ID Facility Directors, Facility Engineers, and Facility Representatives, was specifically identified as an area of strength. The initiatives of DOE-ID in integrating the Environmental Management System (EMS) into ISMS and the employee involvement as an eighth guiding principle of ISMS and encouragement of the VPP program for implementation of that principle are especially noteworthy. Opportunities for enhancement of implementation of all of these activities were identified, relating to ISMS implementation at the site area level and senior level management reviews thereof.

It was observed that procedures to formalize the DOE-ID implementation of ISMS as part of an integrated management system are not yet in place, although many are under development. This is the case for OPE functions as well as for other areas of the DOE-ID Office, for example, in the planning, budgeting, and prioritization of mission and facility activities. The DOE-ID quality assurance program plans (Operations Office level and OPE), which are in draft, could provide a framework for these processes and procedures; however as they are presently formulated, they are hardware oriented, while they should be applicable to all work, in a graded fashion.

It is important that strategic and detailed planning for DOE-ID ISMS implementation occurs and the resulting activities is treated as a project. This is to ensure that all the necessary activities for ISMS implementation within DOE-ID are identified, assigned, and tracked to completion within the anticipated schedule, including the engagement of the whole DOE-ID organization in ISMS as relevant to their work.

The Noteworthy Practices and Opportunities for Improvement related to DOE-ID are available as strengths and issues in Appendix A and the Volume II Assessment Forms.

### **3.0 CONCLUSIONS AND RECOMMENDATION**

The Verification Team recommends that the DOE-ID Manager approve the INEEL ISMS Description (PDD-1004) upon correction of the five system description issues identified below. The Team further recommends that ID and LMITCO proceed with the schedule as outlined in the current implementation plans for Phase II verifications of selected facilities.

- Sections 3.3, 5.6.1, and 5.7 should be reviewed and updated to reflect the use of the engineering process for mitigating or preventing hazards/accidents by the use of engineering design criteria, engineered safety features, or controls.
- The integration with DOE-ID for final approval of Authorization Agreements is not clearly described in Section 4. This section should be updated to reflect the DOE line manager who has final approval authority for Authorization Agreements (including for less than Hazard Category 1 or 2 facilities, if any) consistent with the MCP-3567 procedure.
- The process for periodic updates to List A and List B described in section 5.7.1 can be improved by addressing the recent February 1999 guidance to the Heads of Contracting Activities concerning contractor ISM. Section 5.7.1 should be amplified to include the annual review and update (if necessary) of List A and List B that will be completed concurrent with the annual work scope and fee negotiations to ensure that List A and List B are complete and current.
- The integration with DOE-ID for final approval of the annual update to the ISMS Description is not clearly described in Section 6, which addresses only ESG review and approval. This section should be updated to reflect the DOE approval of annual updates, which will support the efforts to maintain the described ISMS through the upcoming contract transition.
- The annual development of safety performance objectives, measures, and commitments for DOE-ID review and approval, as required by DEAR 970.5204-2 is not included in Section 2.2.

The INEEL ISMS Description Document and enabling manuals of practice are an integrated set that upon completing the improvements identified by this Team that will support Integrated Safety Management. However, there are numerous manuals that have recently been revised. The training of the workforce and the implementing of these revised documents will require LMITCO senior management leadership and involvement. LMITCO management fully understands the magnitude and importance of this issue and is completing the project management WBS and project management plan for this full implementation.

There were several programs that were reviewed by the Team that were under development or just being started that have excellent potential to make significant impact on the System. These programs include the development of the minimum core ES&H requirements and prioritization system, the WASP program and the application of the WASP program to the strong management desire to improve the Lock and Tag performance.

The number of ISMS issues that are related to engineering support activities would suggest that Engineering Support could be better integrated into the operations of INEEL. Of particular note are the identified issues relative to the structure and processes of the configuration management program, hazard analysis and the development of controls for those hazards, a process for ensuring competence of personnel that conduct hazard analysis and implementation of controls,

and issues relative to Radiological Engineering. Additionally, there is an issue concerning the flow of safety issues from the Preliminary Safety Analysis Report into the design requirements. While any single issue is not of the significance to warrant organizational restructuring, the total of these concerns suggests that an organizational structure review of Engineering Support would assist in improving the integration of the Engineering Support to the execution of projects and other work at the INEEL site.

The Team noted that the sets of facility safety and health hazards and facility environmental hazards are not integrated in the processes and procedures that are utilized to determine facility categorization, hazard analysis, and the establishment of controls for those hazards. This issues was briefed to all levels of LMITCO management and various methods of corrections was discussed.

While outside the formal scope of this review, there was a concern expressed by every Team member about the successful transition of the System to another contractor without full implementation throughout the Site. This transition will require DOE-ID senior management and DOE-ID staff involvement to insure consistent implementation of the System across the Site. Additionally, the following attributes and processes, if maintained and encouraged, will greatly improve the chances of successful ISMS implementation.

- During the verification process, the Team found a high level of interest and enthusiasm for the development and implementation of the Integrated Safety Management System from DOE-ID and LMITCO senior management. There were many examples of the mutual interest and actions that were displayed between the senior managers of both organizations.
- Within LMITCO, there were two organizational aspects that contributed to the successful development of the ISM System. The first was the establishment of the Site Operations Director and the establishment of Site Area Directors. That allowed the standardization and formalization of the establishment of ES&H hazard control and the standardization of the methodology for the verification of readiness and authorization of work execution.
- The second important action taken by LMITCO was the use of project management tools and procedures (including detailed WBS) to correct the identified gaps in the ISM System. The use of the project controls allowed detailed accountability with specific dates. Without the utilization of these two organizational processes, the readiness for full implementation of the System would have been very deficient.
- In addition to the above processes, the development, implementation and execution of the VPP program has lead to a strong work force participation in identification of safety hazards and the development and implementation of the controls for those hazards. The enthusiasm demonstrated by the workforce should assist in the implementation of improvements in the System.

If the coordination between the new contractor and DOE-ID can be continued and the new contractor will continue the outlined three processes with the attitude and accountability demonstrated in this review, then chances for full, successful implementation of ISMS will be increased.

#### 4.0 LESSONS LEARNED

The following are the lessons learned as reported by the INEEL ISMS Phase I Verification Team:

- The verification team should plan more time earlier in the first week of the review for team/sub-team meetings, team building, discuss objectives, and ask/answer questions. The first few days of the validation were overwhelmed with contractor presentations, which were scheduled to start too early in the week.
- The criteria statements in the CRADS should not make statement to the fact that procedures “ensure” controls or processes. Procedures can only provide for the framework of a process or system.
- Early establishment of the ISMS Validation Team and distributing required readings prior to the site visits via email was a tremendous savings in time and resources. Providing the team with electronic versions of documents allowed timely access to these documents and more a desirable format (diskette) for transporting voluminous documents while on travel to the INEEL.
- The INEEL relies on the intranet/internet for distribution of documents, procedures, memo, agreements, etc. These should be pre-bookmarked, as well as other popular websites, in the Internet browser when the computers for the team are initially setup. Sites that should be bookmarked are: site procedures, DOE Orders, standards, ISMS homepage, authorization agreements, MSDS(s), other sites that are relevant to the review or that have been identified in the document requests from the team.
- In an effort to compress the overall schedule, the interview schedule ran through to 6:00 p.m., which conflicted with the end-of-day Team meeting. This ended up impacting key members on the team that should have been present at the team meetings. Efforts should be made to avoid scheduling interviews or other conflicts during the time set aside for the team meetings.
- The 3-week schedule for this review was the minimal time needed to conduct a large site-wide verification; the effects of this minimum schedule were felt during the review.



**APPENDIX A**  
**Functional Area Summaries**



## **BUSINESS, BUDGET, AND CONTRACTS (BBC)**

### **Clear Roles and Responsibilities**

The BBC sub-team reviewed the contractor's program descriptions and procedures that are contained mostly in Manuals 3 (Financial Operations), 4 (Procurement), and 5 (Project Cost and Schedule Controls). The roles, responsibilities and authorities for financial and project management processes and the integration of safety into those processes were clearly and adequately defined. The sub-team further investigated this aspect of Integrated Safety Management through interviews and observations of key contractor and Department of Energy Idaho Operations Office (DOE-ID) personnel and activities. The roles and responsibilities with respect to business management processes are clearly defined in the contractor's documentation and understood and executed by both business management and line management personnel. These roles and responsibilities are adequate to provide management with the tools to control the translation of missions into work with tasks properly identified, prioritized and funded. The authorities defined in the contractor's manuals are appropriate to execute those roles and responsibilities, and the applicable procedures have been implemented. However, the roles, responsibilities, and processes for ID staff involvement in the review and approval of planned work scope, budgets, and prioritization are not documented in ID procedures or directives.

### **Line Management Responsibility for Safety**

The sub-team interviewed three activity or project contractor teams to determine the interaction with line management and involvement of business management and ES&H personnel and processes in the planning, budgeting, prioritization and execution of program missions. The groups interviewed were the Radioactive Waste Management Complex (RWMC)-Federal Facilities Act/Consent Order Assessment, Test Reactor Area/Advanced Test Reactor, and ES&H Indirect-Funded Activities under the Vice President for ESH&QA. In addition the team interviewed the Site Area Director for the RWMC. In all cases, the line managers responsible for a particular activity were also responsible for safety and involved directly in the definition, budgeting, prioritization, and changes made to the ES&H activities required for the execution of work.

The Test Reactor Area/Advanced Test Reactor (TRA/ATR) management team presented a planning and budgeting approach in which safety was particularly well integrated with program activities. The sub-team observed that a key factor contributing to this success is that the Site Area Director is also the Program Director for the two principal programs on his site. Where feasible, this technique of assigning responsibilities could have the same beneficial effect if applied to other sites and programs.

The package of four performance-based incentives applied to the ATR is particularly well thought out in terms of the ancillary benefits derived from placing a performance-based incentive on a particular attribute. For example, placing an incentive on reducing total annual radiation dose also forces improved work planning and better facility housekeeping. The other three incentives similarly drive improvements in other areas

without causing adverse effects elsewhere in the operation. With the stated goal to maximize incentives in the new contract, this type of coordinated incentive implementation provides a strong model.

### **Competence Commensurate with Responsibilities**

The BBC sub-team reviewed selected job descriptions and related evidence of education, experience and training for key program and facility line management personnel involved in the business management functions. The team further interviewed or held discussions with contractor personnel from project teams in various organizations. The sub-team concluded that key personnel are well qualified to discharge the responsibilities of their positions with respect to executing and integrating the business management functions with line management functions. The process described in PDD-1004, Section 5.3 and Appendix F, is adequate to ensure that competence in project management and business areas is maintained within the organization.

### **Balanced Priorities**

The BBC sub-team interviewed three activity teams, the Site Area Directors for the RWMC and the IRC and the joint DOE-ID and contractor team for Management of the Safety Infrastructure to determine how the contractor's procedures were implemented to ensure program and safety resources were balanced in developing budgets. The sub-team determined that safety is well integrated into the planning, budgeting and prioritization processes. Site Area Directors who are responsible for the safe conduct of work at their sites have ample opportunity to participate in these processes. Business management systems, including budgeting, cost accounting and project cost, and schedule control, are well integrated with the programs and with line management's safe conduct of work.

The infrastructure management team is developing two principal products that are to be completed by May 28, 1999. The first of these is a definition of the core ES&H infrastructure. The second is a system to enable management to rank work activities using several attributes that include cost, safety risk, potential environmental impacts, mission accomplishment, efficiencies, and potential for positive or adverse impact on public perception. The sub-team concluded that the products being developed by the infrastructure management team offer an opportunity for significantly improving the budgeting, prioritization and management of both indirect and direct funded ES&H activities. Further, the team also observed that proper implementation of these products is absolutely necessary for the longer-term viability of essential site-wide ES&H functions. To be effective, this system will require strong management endorsement, and it must be integrated fully into the planning, prioritization, change control, and feedback processes.

## **Conclusion**

In the BBC area, the program and processes described in PDD-1004 and the procedures that implement that program are adequate and are being consistently applied throughout the contractor organization. Business management systems, including budgeting, cost accounting and project cost and schedule control, are well integrated with the programs and with line management's safe conduct of work. These business management systems provide a highly effective feedback mechanism available for use by management in improving the planning, budgeting and execution of work.

## **Issues**

BBC1-1 Procedures for ID staff involvement in the work planning, prioritization, budgeting, and change control processes are not documented.

## **Strengths**

BBC1-2 The level of communication and coordination between the business management directorate staff and the line organizations that they service was effective. Line managers demonstrated excellent knowledge and made full use of the business management systems to plan, execute and evaluate their programs.

BBC2-1 Business management systems are well established, mature and applied consistently throughout the company. Two of the strongest areas are cost accounting and the well-defined, graded approach for project cost and schedule controls.

## **DEPARTMENT OF ENERGY (DOE)**

DOE-ID is in the process of rebuilding its internal directives. The 1994 directives streamlining initiative resulted in the elimination of many internal directives. DOE-ID has determined that to implement ISMS it must more actively manage the contract work effort, and is in the process of developing or re-developing the necessary plans and procedures as part of ISMS implementation.

A number of essential high level documents and procedures are in place. These include: DOE-ID FRAM, Contractor List A and B; Executive Policies on environmental compliance and ES&H management system integration; and certain ID Notices that establish expectation of DOE-ID and contractor operations. Other, more detailed implementing procedures and guidance documents for implementing ISM are under development, or are planned for development. Consequently, some documents and procedures were not available at the time of this review.

The DOE-ID-Contractor interface is basically sound and functional. However, formal documentation of the implementing procedures is necessary and the balance of DOE-ID personnel must be actively engaged if ISM is to be implemented in an effective and timely manner. This includes the Programs part of OPE as well as the other offices which interface with ISM.

DOE-ID needs a strategic plan and detailed implementation plan for ISM. This will help establish the rigor and discipline needed to ensure effective implementation of ISM before, during, and after the transition to the new contractor. Adoption of a project management approach to implementing ISM would help ensure effective implementation of the ISM.

Finally, DOE-ID management must make it clear to all employees that ISM is really a comprehensive management system that assures that safety, environment, and health issues are integrated into a single management system.

#### **Line Management Responsibility**

DOE-ID line management responsibilities are clearly defined. Both management and staff clearly recognize their responsibility for safety. The fatal accident in 1998 has spurred ISMS development, which will better formalize roles, responsibilities and procedures. A significant portion of the actions taken for ISM are included in the Corrective Action Implementation Plan to this accident. Line management has worked vigorously on putting in place the necessary processes for ISM.

DOE procedures provide for identification of applicable ES&H requirements and implementation into the Contract.

DOE-ID has a system description whereby List B, which is a listing of contract requirements documents, including safety standards and requirements, is maintained. The system is expert-based and involves discussions and issue resolution with the contractor. Although there is a requirement that DOE-ID generated guidance is consistent with DOE Directives, there is no formalized process whereby this is assured.

#### **Clear Roles and Responsibilities**

The DOE-ID line management responsibilities for ES&H are defined through the FRAM and position descriptions within OPE. This will further be strengthened when the ISMS-related procedures are in place. Other DOE-ID offices should be included as appropriate. A strategic plan and detailed project plan for implementing ISMS could help facilitate the identification and formalization of roles and responsibilities.

#### **Competence Commensurate with Responsibilities**

Procedures are in place, and they are effective, for assuring DOE competence commensurate with responsibilities. However, there are opportunities to enhance the training program. The HR technical training coordinator and subject matter experts, both DOE-ID and contractor, need to coordinate efforts to ensure that the EH training data base is comprehensive.

The personnel interviewed appeared to be competent to perform their assigned responsibilities, based on impressions gathered during the interviews. A review of their resumes, which were not available at the time of the interviews, would provide for a more objective assessment.

### **Balanced Priorities**

The roles, responsibilities, and processes for DOE-ID staff involvement in the review and approval of planned work scope, budget, and prioritization are not documented in procedures or directives.

Appropriate Program Execution Guidance has been issued by DOE-ID for the Voluntary Protection Program (VPP). Program Execution Guidance for Environmental Management Systems is in the final stages of review and approval and is expected to be issued in the near future. These guidance documents are intended to ensure that worker involvement and environmental management are components of an ISMS.

### **Hazard Controls Tailored to the Work Being Performed**

This issue is addressed in the section of this report developed by the Hazards Team.

### **Operations Authorization**

Authorization Agreements are in place for category 1 and 2 nuclear facilities, and they reflect the ID governing notice guidelines (IDN 450.C). However, in some cases the safety bases upon which they rest appear to be significantly out of date.

The DOE-ID approval authority for safety bases and Authorization Agreements (AA) could benefit from a senior safety panel to provide a more comprehensive management level assessment of the adequacy of Safety Evaluation Reports and the AAs.

### **Conclusions**

It is the conclusion of the Department of Energy (DOE) Functional Area subteam that activities underway that were evaluated support the interfaces with the contractor's Integrated Safety Management staff, which includes the Environmental Management System staff, as described in IDD-1004. A disciplined project planning and implementation effort is needed to ensure that the complete set of activities for DOE-ID ISM implementation are identified and completed, with the opportunities for improvement and the concerns below being addressed.

### **Issues**

DOE1-1 DOE-ID Notice 25 1. 1 B, ID Directives System has no process to assure that ID interpretations of DOE Orders or the development of ID Notices that give further guidance regarding DOE Orders are consistent with those Orders in the judgement of the DOE HQ Office of Primary Interest responsible for the Order.

- DOE1-2 A DOE-ID quality assurance program (QAP) has not been developed and approved per DOE O 414.1, Quality Assurance. An ID QAP presents an opportunity to address ID procedures and assessment programs and to engage all of ID in ISMS.
- DOE1-3 There needs to be an DOE-ID strategic plan and a detailed project plan for accomplishing the tasks needed for ISMS implementation of ID functions.
- DOE1-4 The DOE-ID approval authority for safety bases and Authorization Agreements (AA) could benefit from a senior safety panel to provide a management level review of the Safety Evaluation Reports and the AAs.
- DOE1-5 There is an opportunity to enhance the DOE-ID training program through identification of individual office training coordinators who can work with HR in updating the DOE-ID training database.
- DOE2-1 Feedback and improvement processes that have been planned and are under development are largely objective and statistical in nature. A formalized method of providing a management level subjective evaluation of contractor performance is necessary because objective measures can be misleading and incomplete.
- DOE2-2 Many of the activities necessary for implementation of an effective feedback and improvement system dealing with contractor performance have been identified and work is proceeding on those activities.

### **Strengths**

- DOE1-6 Within OPE, the Operations plan for management of the contractor's execution of programs has been well thought out and the system of Facility Directors, Facility Engineers, and Facility Representatives, supported by Subject Matter Experts is effective.
- DOE1-7 The Operational Excellence Program has been effective in driving many of the activities necessary for ISM implementation.
- DOE1-8 INEEL EMS is modeled after ISO 14001 in response to direction by DOE and is an ISMS component. This will facilitate INEEL (and DOE) registration for ISO 14001.
- DOE1-9 DOE-ID encouragement of the VPP program and involvement with the unions.

## **HAZARDS IDENTIFICATION AND STANDARDS SELECTION (HAZ)**

INEEL hazards are being identified within site area and facility hazard processes and in site emergency management planning. Data bases for facility hazards should be integrated, specifically to include environmental safety hazards. These data bases are then used to perform hazard categorization and analysis for facility and activity level work, and to develop controls. The contractor's description of safety analysis and controls development should integrate environmental hazard identification with methods for deriving environmental safety controls.

### **Clear Roles and Responsibilities**

Responsibility for hazard identification and safety analysis, including development of control sets, clearly rests with Site Area Directors and facility managers. They may employ support technical experts in needed disciplines to carry out this responsibility. Those support personnel are made available, and are responsible to line management.

### **Competence Commensurate with Responsibilities**

Practices for identifying participants in hazard identification and analysis, and for assuring that their competency is appropriate for their assigned duties, are not sufficiently formal. Current practices invoke judgements for identification of graded approach and for selection and qualification expectations for involved personnel, but the person or group whose judgement is applied is not specified. Responsible managers should have confidence that appropriate judgements are invoked to determine level of rigor based on hazards.

### **Identification of Safety Standards and Requirements**

The Integrated Safety Management System Program Description of requirements management within both DOE ID and LMITCO were reviewed and found satisfactory. Specific requirements flow-down concerns can be addressed in lower tier procedures. Fundamental processes for incorporation of requirements in the contract and for flow-down of those requirements in contractor documents are adequate.

The DOE ID and the Contractor each have programs for identifying and incorporating requirements into work controls and applicable facility operations. The process is adequate to cause DOE directives to flow-down into contractor work.

### **Hazard Controls Tailored to the Work Being Performed**

Procedures describe mechanisms for tailoring hazard controls to the work. Those descriptions are not clear for the processes to be employed in developing facility level controls for hazards. A graded approach is used, based upon judgements. However, descriptions lack clarity on selection of approach and selection of involved personnel, so provide no formal mechanism for assuring appropriate rigor.

## Issues

- HAZ1-1 PRD-5042 is not linked to procedures for hazard categorization and assessment which trigger a review or analysis for all affected facilities.
- HAZ1-2 Procedures do not assign responsibility to specific persons or positions for selecting those who participate in hazard categorization or analysis of facilities.
- HAZ1-3 Facility level environmental hazards data bases are not linked to facility personnel safety and health hazard data bases, and environmental hazards are not procedurally required to be included in systematic facility level hazard assessment processes.
- HAZ1-4 PDD-1004 and PDD-1012 do not adequately describe and integrate the derivation of appropriate environmental safety controls.
- HAZ2-1 The flow down of engineering design requirements from the contract does not capture the integration of the ISMS core functions to "Identify and Analyze Hazards" and "Develop and Implement Controls" in the INEEL engineering design procedures.
- HAZ3-1 LMITCO lacks adequate formal establishment and documentation of training/continuing training requirements, and qualification/re-qualification programs for some personnel assigned to conduct certain hazard assessments, hazard controls determinations and hazard reviews.
- HAZ3-2 Processes are not in place to assure personnel assigned to perform hazard identification, analysis, and control determination have competence to properly execute those tasks.

## Strengths

- HAZ1-5 Emergency Management Planning Hazard Assessment Program supporting development of EPZs and PAGs.
- HAZ1-6 The STD 101 Integrated Work Control Process hazard identification process is particularly noteworthy. This process in conjunction with PRD-5042 (Pending) and the associated hazard list can become an integrated and comprehensive tool for the identification of activity level hazards.
- HAZ1-7 The INEEL Safety Analysis Committee (SAC) integrates safety analysis standards, policy and procedures. The INEEL presently consist of thirty nuclear facilities and approximately forty radiological and other industrial facilities. The SAC develops appropriate methods for the hazard analysis of these facilities and ensures that consistent facility operating control sets are developed.

## **MANAGEMENT (MG)**

The management sub-team assessed the ISMS at INEEL as it related to: the overall ISMS description; clear roles and responsibilities to assure safety; authority and accountability of line management; assurance that competence is commensurate with responsibilities; balancing of priorities; feedback on the effectiveness of ISMS, opportunities for continuous improvement, and oversight; provision for regulatory compliance and enforcement; and integration of the policies and procedures that implement ISMS sufficient to result in integrated safety management.

Overall, the management assessment sub-team concluded that: (1) The ISMS description is adequately consistent with DOE Policy, the DEAR, and DOE-ID guidance; (2) the ISMS documents and implementing procedures clearly define roles and responsibilities; (3) the ISMS description and procedures are designed to ensure that employees have competence commensurate with the responsibilities to which they are assigned; (4) INEEL has an effective, well-constructed and integrated feedback and continuous improvement program to support ISMS; and (5) the level of the Configuration Management program development is not yet mature enough to ensure that an adequate program will exist.

Five particular strengths in the INEEL ISMS program were identified, and 9 general issues with the ISMS program that should be improved were also identified by the verification team and are summarized below.

### **Line Management Responsibility for Safety**

The contractor ISMS defines clear responsibilities of all personnel to ensure environment, safety, and health are protected at all levels. PDD-1004, INEEL Integrated Safety management System, presents clearly stated responsibilities for all contractor employees, categorized into subgroups of workers, supervisors/foremen, Department Managers, Vice Presidents/Directors, and the President and CEO. The contractor's ISMS procedures specifically state that line management is responsible and accountable for protection of environment, safety, and health. The LMITCO Employee Handbook (GDE-10) informs all employees that they are responsible for safety of themselves and their coworkers, as well as protection of the environment.

As a compliment to line management, the contractor's ESH&QA organization provides enforcement, oversight, feedback, and continuous improvement functions. The contractor's procedures describe clear roles and responsibilities to provide feedback and continuous improvement, and also focus on expectations of facility excellence, which go beyond simply compliance. A strong commitment to integrated feedback, lessons learned, continuous improvement, and excellence is presented in the contractor ISMS program and requirements documents which clearly flows through specific control procedures. The resulting program for integrated feedback, oversight, and continuous

improvement is captured within the performance measures and trending program which appears to be extremely well integrated and effective in tracking and measuring performance with respect to ISMS implementation and promoting facility excellence.

Implementation of Site Operations (PDD-1005) has resulted in establishment of a number of chartered boards and committees to perform all of the feedback and issues management functions described. Other programs and activities have created additional boards and committees, some of which are not as clearly tasked and chartered as those in PDD-1005. While the set of functions described in Site Operations presents a fully integrated process, implementation, and accountability for feedback, issues management, and continuous improvement, questions were raised during interviews with program and area managers concerning the resources consumed by these efforts. Several interviewees suggested that some functions may be consolidated, reducing the number of individual boards and committees needed, and conserving resources.

#### **Clear Roles and Responsibilities**

The contractor ISMS defines clear roles and responsibilities of all personnel to ensure environment, safety, and health are protected at all levels. PDD-1004, INEEL Integrated Safety management System, presents clearly stated roles and responsibilities for all contractor employees, categorized into subgroups of workers, supervisors/foremen, Department Managers, Vice Presidents/Directors, and the President and CEO. Through the Site Operations Program Description Document, PDD-1005, the site operations organization is very effectively described, defining accountability and responsibility for the management of the numerous diverse and hazardous facilities found on the 900 square miles of the INEEL. PDD-1005 also lends great efficiency to pursue goals such as the implementation of integrated safety management, the Voluntary Protection Program, and the integration of INEEL safety programs into site operations. The Site Operations Council, defined in PDD-1005, is a tremendous influence that integrates the day-to-day operations of all INEEL facilities and ensures a high level of effective implementation of important DOE Directives such as Conduct of Operations.

#### **Competence Commensurate with Responsibilities**

Contractor procedures ensure that personnel who supervise work have competence commensurate with responsibilities. PDD-1004 presents a clear process for ensuring personnel assigned to positions have competence commensurate with responsibilities. The ISM Project Office has developed a set of project controls that will allow the Site Operations Director to lead the development and implementation of ISMS training. These project controls allow detailed accountability with specific due dates assigned. Personnel who are identified to hold "key positions that impact safety" receive special emphasis. It should be noted, however, that the process to maintain (periodic review and update) the list of personnel identified as "key positions that impact safety" is not yet in place.

A major element for the implementation of the ISMS at INEEL is the new Integrated Work Control Process described in the Draft STD-101. The policies and procedures associated with STD-101, currently in draft, describe processes to support the new work

control methodology, in conjunction with the ISMS. Implementation of STD-101 involves improvement and standardization in training and qualification processes combined with implementation of STD-101, ISMS, and other maintenance and operations improvement initiatives to support assurance that competence is commensurate with assigned responsibilities. It should be noted that many of these policies and procedures have been recently revised, or are now in the process of revision. Some of these related Work Control procedures and processes are in the early stages of implementation and maturation.

Training and qualification programs in some areas require improvement to ensure competence commensurate with assigned responsibilities. For example, the list of duties and responsibilities for a radiological engineer was derived from DOE Technical Qualification program that applies to federal radiation protection personnel who provide direction and oversight of contractors at defense nuclear facilities. As a result, the list does not adequately address the operational aspects of identification and assessment of hazards to workers, the public, and the environment, and mitigation of hazards using engineered design that would be expected to be demonstrated by an *operational* radiological engineer.

#### **Balanced Priorities**

Contractor procedures ensure that priorities are balanced to ensure feedback is provided and continuous improvement results, as described throughout the program description and requirement documents and in the specific procedures for quality improvement, self-assessment, oversight assessment, and issues management. Site Operations (PDD-1005) and the charter for the Senior Operations Review Board (CTR-3) both require, delineate, and assign responsibility for prioritizing and balancing feedback and responses to continuous improvement initiatives. Currently there is not an ES&H infrastructure planning tool which helps to integrate the ultimate feedback from lessons learned and prioritization of needs with resource and budget prioritization, but one is being developed. A risk-based prioritization process is also used to determine the level of significance associated with a deficiency or issue. Other organizational constructs, such as corrective action review boards, issues screening boards, and other review boards are required throughout for ensuring that prioritization and balancing functions are performed.

A graded approach to application of many requirements has been specifically included in requirements documents and control procedures, establishing separate requirements, where appropriate, for high-risk versus low-risk facilities or activities. Special procedures of rigor of effort with respect to feedback and continuous improvement are often noted for particularly complex or important activities and facilities such as spent fuel management, TRA, and INTEC.

#### **Operations Authorization**

As noted, a major element for the implementation of the ISMS is the new Integrated Work Control Process as described in the Draft STD-101. Overall, the policies and procedures associated with STD-101 adequately provide a description of processes to

support the new work control methodology, in conjunction with the INEEL ISMS Description. The draft STD-101 adequately describes the Work Control Process that the contractor is planning to use to ensure that the designated work controls are implemented, and that they will remain in effect during the work process. However, many of these policies and procedures have been recently revised, or are now in the process of revision. Some of these related Work Control procedures and processes are in the early stages of implementation and maturation. Some of these processes are being implemented now, and some are to be implemented in conjunction with efforts for improved and standardized implementation of Conduct of Operations and improvements in the determination of the Hazard Analysis and Controls Implementation for Work Control. The INEEL contractor, led by the Site Operations Director (SOD) and his key staff, have a solid perspective of the elements of Work Control, the elements of the required training for this process, and the path forward to implement the process. It will be critical that the leadership maintains their control of the linkages and implementation processes.

The Environmental Aspects identification process is an integral part of the INEEL ISMS and is a key element of the environmental management system. Environmental Aspects are those aspects of activities, products, and services that have the potential to interact with the environment. The results comprise a list of categories related to INEEL business and extant operations for which specific "aspect hazards" have been identified for use in work planning and execution. While PDD-1004 clearly defines safety as encompassing environmental safety, this inclusive definition does not consistently flow down all hazards identification and safety control documents and procedures.

Hazardous energy sources are controlled through procedure, MCP-1059, Lockout and Tagout. Assessments by both DOE and the contractor have lead to the revision to the Lockout and Tagout (LO/TO) program and the need to take temporary actions such as having a Senior Supervisory Watch (SSW) monitor all LO/TO(s) and suspension of level 1 lockouts. Corrective actions for improving the proficiency of the LO/TO program have lead to the development of a new program for mentoring LO/TO behavior (see Worker Involvement below). However, the program is just being started.

Requirements and procedures for ensuring adequate radiological controls are established prior to commencing work and remain in affect so long as the hazard is present are derived from the Radiological Control Manual. These procedures provide an adequate basis for ensuring that controls are implemented prior to commencing work and remain in affect so long as the hazard is present. However, the Radiological Control Manual presents some unique challenges, as it functions as a program description document, program requirements document, and management control procedure. LMITCO has not established a mechanism for identifying which portions of the Radiological Control Manual are implemented directly, and which portions are implemented by formal procedure. Additionally, no mechanism has been established to ensure the systematic flowdown of all requirements from the manual into procedures.

### **Worker Involvement**

Interviews with DOE-ID and the contractor line management and support personnel at all levels of the INEEL organizations indicated that overall these personnel understand their ISMS efforts. These personnel also demonstrated a consistently positive attitude toward ISMS at INEEL.

Recently, a program requirements document has been drafted which recognizes the role within the LMITCO system of a worker initiated and applied safety program for conducting peer observations and providing feedback on an employee to employee basis without management involvement.

As noted above, a new program for ensuring proficiency of the LO/TO program is currently under development. This program will identify LO/TO "experts" in each area for personnel performing LO/TO(s) to seek guidance or assistance. The LO/TO Mentoring Program is a worker owned and established program to achieve zero defects in the execution of lockout and tagout activities. The mentoring program establishes proficiency requirements for LO/TO authorized employees and provides a method to maintain authorized employees proficient in their lockout and tagout skills.

### **Conclusion:**

Overall, the ISMS Description is adequately consistent with the DOE Policy, the DEAR, and the DOE-ID guidance. The description of the contractor policies for the implementation and maintenance of the ISMS is adequate. Contractor ISMS documents and implementing procedures clearly define roles and responsibilities to ensure satisfactory safety, accountability and authority. Line management is responsible for safety. Contractor programs, requirements, and procedures ensure that feedback information on the effectiveness of ISMS is gathered, opportunities for improvement are identified and implemented, line and independent oversight is conducted, and if necessary, regulatory enforcement actions occur. The INEEL Integrated Work Control Process Description, as provided in the Draft STD-101, combined with the other associated documents and processes adequately describe a system of procedures and mechanisms for the Control of Work in ISMS.

### **Issues**

- MG1-1        Sections 3.3, 5.6.1, and 5.7 of the ISMS Description should be reviewed and updated to reflect the use of the engineering process for mitigating or preventing hazards/accidents by the use of engineering design criteria, engineered safety features, or controls.
  
- MG1-2        Integration with DOE-ID for some processes is not clearly described in the ISMS Description, including: final approval of Authorization Agreements; process for periodic updates to List A and List B; final approval of annual updates; and annual development of safety performance objectives, measures, and commitments. (See also MG1-3, MG1-4, and MG1-5)

- MG3-1 Numerous boards and committees have been established or are being put in place as described in the Site Operations Manual (PDD-1005) and other documents. While PDD-1005 presents a fully integrated picture, ID and the contractor should review and define the need to continue to use separate boards and committees to perform all these functions after the ISMS has been fully implemented.
- MG4WC-1 The rapidly dynamic nature of the change process currently in progress on the draft forms of STD-101, the "Integrated Work Control Process," indicate that contractor Line Management will have to continue to very closely manage the associated training now in development, and the implementation of the final STD-101 version.
- MG4EMS-1 While PDD-1004 clearly defines safety as encompassing environmental safety, this inclusive definition does not consistently flow down into the following hazards identification and safety control documents and procedures: PDD-5042, Facility Hazard Identification; Facility Hazards List; MCP-2449, Nuclear Safety Analysis; MCP-2451, Safety Analysis for Non-Nuclear Facilities.
- MG4RC-1 Flow down of requirements has not been consistently demonstrated for all requirements, including radiological control requirements.
- MG4RC-2 Training and qualification programs in some areas require improvement to ensure competence commensurate with assigned responsibilities, including for radiological engineer training and qualification.
- MG4CM-1 The level of Configuration Management program development is not yet mature enough to ensure that an adequate program will exist. Configuration management for non-process software systems, e.g., PASSPORT, is not scheduled to be developed until the next phase of the Configuration Management program, which could impact the ability to perform work safely. (See also MG4CM-2)
- MG4CM-3 The lack of an individual or organization with defined responsibility for Configuration Management at DOE-ID may hinder INEEL efforts to attain excellence in this area, and also detracts from ID's ability to judge whether or not interim actions for existing configuration management weaknesses are adequate.

## Strengths

- MG1-6 ISMS has been projectized at the INEEL. Implementation plans and project schedules have been developed to guide completion of a very ambitious and demanding schedule, and project controls with detailed accountability and dues dates have been put in place. (See also MG2-2)
- MG1-7 DOE-ID and contractor management, support personnel, and workers at all levels possess a clear understanding of their ISMS efforts and demonstrated a consistently positive attitude toward ISMS at INEEL
- MG2-1 LMITCO has a number of strong or well-constructed programs in place: Site Operations, PDD-1005 is very comprehensive regarding roles and responsibilities; the feedback, issues management, and performance measures and trending programs are all highly integrated; the environmental management system is based on ISO 14001; the emergency preparedness program is well documented and mature. Even worker initiatives are being institutionalized with program requirements documents and procedures. (See also MG3-4, MG4EMS-2, MG4EP-1, and MG3-2)
- MG3-3 Facility Excellence Walkdown Program is an effective mechanism for continuous facility improvement.
- MG4EMS-2 The INEEL Environment Aspect Identification Process and the results obtained are of excellent value.

