

INEEL
Integrated Safety
Management System

Annual Report
FY 2003

November 2003

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**Idaho National Engineering and Environmental Laboratory
Idaho Falls, Idaho 83415**

**Prepared for the
U.S. Department of Energy
Under DOE Idaho Operations Office
Contract DE-AC07-99ID13727**

SUMMARY

In accordance with contract clause I.19, "Integration of Environment, Safety, and Health into Work Planning and Execution," the Idaho National Engineering and Environmental Laboratory (INEEL) has documented a Safety Management System in Program Description Document (PDD)-1004, "INEEL Integrated Safety Management System" that has been reviewed and approved by the Department of Energy (DOE). The INEEL process for maintenance of the Integrated Safety Management System (ISMS), contained in Chapter 6 of PDD-1004, provides the mechanisms for analysis, evaluation and update of the ISMS. These mechanisms are responsive to the Continuing Core Expectations contained in the "Integrated Safety Management System Guide," DOE G 450.4-1B.

The evaluation process includes continuing evaluations and annual evaluations. During Fiscal Year (FY) 2003, the Facility Evaluation Board (FEB) evaluated the implementation of ISMS at the facility and activity levels. Results of the evaluations were formally briefed to senior Bechtel BWXT Idaho, LLC (BBWI) and Department of Energy Idaho Operations Office (NE-ID) management. Management assessments and independent assessments were also conducted and performance was routinely measured and analyzed. These assessments and analyses provided necessary input to the annual evaluation process.

The annual evaluation was performed by company Subject Matter Experts, Performance Assurance, and a Line Management Review Board. Part of the evaluation was focused on key institutional level processes and elements of the ISMS. Performance was also evaluated including: progress on achievement of FY 2002 Safety Performance Objectives, Measures, and Commitments; resolution of previously identified ISMS issues; assessment findings; events; regulatory compliance; and employee safety concerns. An evaluation of potential system impacts was also performed.

The evaluation led to the following overall conclusions about the status and effectiveness of the INEEL ISMS:

- *All ISMS elements have been maintained and most have been improved.* The ISMS maintenance mechanisms have functioned properly. No elements of the system were identified as having degraded and numerous improvements have been implemented. Fifteen system strengths were identified.
- *Areas for improvement in the ISMS were identified.* These areas for improvement were found in development and implementation of hazards controls, performing work within controls, and feedback and improvement. Eleven overall areas for improvement and 20 areas for focused training were identified.
- *The system is effective for performing work safely.* Although events and deficiencies indicate specific problems with implementation, the system is sound overall and, when followed, ensures safe performance of work as demonstrated by work accomplishments in FY 2003.

The results of the evaluation as well as information in the *INEEL Institutional Plan*, the *Performance Evaluation Measurement Plan*, and *DOE Budget Guidance and Direction* were used to develop safety performance objectives, measures, and commitments for FY 2004. The results of the evaluation were reported to the BBWI Senior Operations Review Board and the BBWI Integrated Executive Council who accepted the report and approved the recommended *FY 2004 Safety Performance Objectives, Measures, and Commitments*.

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ACRONYMS

AB	Authorization Basis
ACGIH	American Conference of Government Industrial Hygienists
AFI	Area for Improvement
ALARA	As Low As Reasonably Achievable
ATP	Annual Training Process
BBWI	Bechtel BWXT Idaho, LLC
CAP	Corrective Action Plan
CC	Construction Coordinator
CCE	Continuing Core Expectation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFA	Central Facilities Area
CFE	Construction Field Engineer
CPCHA	Chemical Products, Chemicals, and Hazardous Agents
CTR	Contract Technical Representative
CTR	Charter
CWA	Clean Water Act
CY	Calendar Year
DACR	Day Away Case Rate
DEAR	Department of Energy Acquisition Regulation
D&D	Decontamination and Decommissioning
DEQ	Department of Environmental Quality
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-EH	Department of Energy Environmental, Safety, and Health (DOE-HQ Division)
DOE-HQ	Department of Energy Headquarters
DSA	Documented Safety Analysis
ECVI	Environmental Compliance Violations Index
EM	Environmental Management
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPD	Employee Position Description
ER	Environmental Restoration
ES&H	Environment, Safety, and Health

ESH&QA	Environment, Safety, Health and Quality Assurance
FEB	Facility Evaluation Board
FFA/CO	Federal Facilities Agreement Compliance Act
FSM	Functional Support Manager
FSME	Focused Safety Management Evaluation
FT	Focused Training
FY	Fiscal Year
GDE	Guide
GIOI	Grout Injection Operator Injury
H&R	Hoisting and Rigging
HAP	Hazardous Air Pollutant
HIAC	Hazards Identification, Analysis, and Control
ICARE	Issue Communication and Resolution Environment
ICMS	INEEL Chemical Management System
IEC	Integrated Executive Council
IH	Industrial Hygiene
INEEL	Idaho National Engineering and Environmental Laboratory
INPO	Institute of Nuclear Power Operators
INTEC	Idaho Nuclear Technology and Engineering Center
IO	Independent Oversight
IQAMS	Integrated Quality Assurance Management System
IRC	INEEL Research Center
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
ISO	International Standards Organization
ISSM	Integrated Safeguards and Security Management
JON	Judgment of Need
LLW	low-level waste
LMRB	Line Management Review Board
LO/TO	Lock Out/Tag Out
LST	List
MCP	Management Control Procedure
MLLW	mixed low-level waste
MSA	Management Self-Assessment

NE-ID	Department of Energy Idaho Operations Office
NFPA	National Fire Protection Association
NOV/CO	Notice of Violation/Consent Order
NTS	Noncompliance Tracking System
OFI	Opportunity for Improvement
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Administration
PAAA	Price Anderson Amendments Act
PAM&O	Physical Assets Maintenance and Operations
PBF	Power Burst Facility
PDD	Program Description Document
PEC	Pre-existing Condition
PEG	Program Execution Guide
PEL	permissible exposure limit
PEMP	Performance Evaluation Measurement Plan
PIP	Performance Improvements Project
PLN	Plan
PRD	Program Requirements Document
QA	Quality Assurance
R2A2s	Roles, Responsibilities, Authorities and Accountabilities
RCRA	Resource Conservation and Recovery Act
RPI	Radiological Performance Index
RWMC	Radioactive Waste Management Complex
RWP	Radiation Work Permit
SAR	Safety Analysis Report
SARA	Superfund Amendments and Reauthorization Act
SBMS	Standards Based Management System
SMC	Specific Manufacturing Capability
SME	Subject Matter Expert
SORB	Senior Operations Review Board
SSC	Structures, Systems, and Components
STD	Standard
STP	Site Treatment Plan
STR	Subcontractor Technical Representative

STRIB	Site Training Review and Implementation Board
TAN	Test Area North
TLD	Thermo Luminescent Dosimeter
TLV	threshold limit value
TRA	Test Reactor Area
TRAIN	Training Records and Information Network
TRCR	Total Recordable Case Rate
TRU	Transuranic
USQ	Unreviewed Safety Question
VCO	Voluntary Consent Order
VPP	Voluntary Protection Program
WASP	Worker Applied Safety Program
WBS	Work Breakdown Structure
WGS	Waste Generator Services
WROC	Waste Reduction Operations Complex

ISMS Annual Report

1. INTRODUCTION

The Idaho National Engineering and Environmental Laboratory (INEEL) prime contract between the Department of Energy (DOE) and Bechtel BWXT Idaho, LLC (BBWI) contains clause I.19, “Integration of Environment, Safety, and Health into Work Planning and Execution.” The contract clause requires in part that:

“The contractor shall manage and perform work in accordance with a documented Safety Management System... The System shall describe how the contractor will establish, document, and implement safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance while maintaining the integrity of the system. The System shall also describe how the contractor will measure system effectiveness. The contractor shall submit...documentation of its system for review and approval... On an annual basis, the contractor shall review and update, for DOE approval, its safety performance objectives, performance measures, and commitments with and in response to DOE’s program and budget execution guidance and direction.”

BBWI has documented a Safety Management System in Program Description Document (PDD)-1004, “INEEL Integrated Safety Management System” which has been reviewed and approved by the Department of Energy Idaho Operations Office (NE-ID). The System documentation describes how safety performance objectives, measures, and commitments are developed and how system effectiveness is measured.

The INEEL process for maintenance of the Integrated Safety Management System (ISMS), contained in Chapter 6 of PDD-1004, provides the mechanisms for analysis, evaluation, and update of the System. These mechanisms are responsive to the Continuing Core Expectations (CCEs) contained in the “Integrated Safety Management System Guide,” DOE G 450.4-1B. Table 1 of the Appendix provides a cross reference of the CCEs to the sections of this report. The ISMS Annual Report is the final product of the annual maintenance and update process. It provides a summary of the ISMS improvements and issues and progress toward achievement of goals and expectations. The evaluations in the report provide input to the development of performance objectives, measures and commitments for the following year. The report also provides the basis for changes to the System description.

The contract clause defines safety as encompassing environment, safety, and health, including pollution prevention and waste minimization. During ISMS implementation, INEEL ensured that its Environmental Management System (EMS) was fully integrated into the ISMS. In addition, the INEEL EMS has been designed to comply with the International Standards Organization (ISO) 14001, “Environmental Management Systems – Specification with Guidance for Use.” INEEL received certification under this international standard in FY 2002.

For several years before implementation of ISMS, INEEL had been implementing a Safety and Health program which would satisfy the Star criteria of DOE’s Voluntary Protection Program (VPP). Like the EMS, the VPP Safety and Health program was also fully integrated into the ISMS. In FY 2001, INEEL was awarded VPP Star status by DOE.

In accordance with 10 CFR 830.120, INEEL had developed an Integrated Quality Assurance Management System (IQAMS) that is fully integrated with ISMS. The Quality Assurance (QA) processes are vital for ensuring work is performed safely. The documented QA program has been reviewed and approved by DOE.

DOE, through DOE P 470.1, “Integrated Safeguards and Security Management Policy,” applied the ISMS core functions and guiding principles to Safeguards and Security Programs to ensure an appropriate rigor and focus on those areas like the rigor and focus on safety. INEEL has fully implemented an Integrated Safeguards and Security Management System (ISSMS).

The integration of EMS, VPP, IQAMS, and ISSMS with ISMS strengthens implementation and helps management and workers understand that these systems are focused on an overall purpose. Recognition and certification of these systems is also aided by this integration. The ISMS evaluation in this report includes evaluation of these systems and integrates the results.

2. EVALUATION PROCESS

INEEL is dedicated to maintaining and improving an effective ISMS through the institutionalization of processes contained in PDD-1004. To accomplish this, INEEL utilizes key processes inherent to the ISMS Infrastructure (Figure 3 in PDD-1004). The process for maintenance of ISMS, contained in Chapter 6 of PDD-1004, provides the mechanisms for analysis, evaluation, and update of the System.

The evaluation process includes continuing evaluations and annual evaluations. Throughout the year, the Facility Evaluation Board (FEB) evaluated the implementation of ISMS at the facility and activity levels. Results of the evaluations were formally briefed to senior INEEL and NE-ID management. Ongoing management assessments and independent assessments were also conducted and performance was routinely measured and analyzed. These assessments and analyses provided necessary input to the evaluation process.

For the annual evaluation, company-level subject matter experts (SMEs) and Functional Support Managers (FSMs) for the identified functional support areas (programs) were used to evaluate institutional level ISMS implementation, maintenance, and improvement. SME meetings were conducted as necessary to ensure all the activities were completed. NE-ID personnel were briefed on the process and attended the SME meetings. SMEs were required to complete a checklist that contained elements for evaluation at the functional area level of ISMS key processes of Requirements Management, Training and Qualification, Assessments, and Issues Management. The SMEs were instructed to document any significant issues associated with these processes for their functional areas, any other significant issues in their areas, improvements that had been made, and opportunities for improvement.

A Line Management Review Board (LMRB), chaired by the Chief of Staff with INEEL senior management members, reviewed the completed checklists to evaluate the status of functional areas and the ISMS key processes at the company level and ensure issues had adequate management attention. Performance Assurance used the results of these evaluations and other information to determine the status of key ISMS processes and documents and previously identified ISMS issues.

In addition to key processes and documents, system performance was also evaluated including: progress on achievement of FY 2003 Safety Performance Objectives, Measures, and Commitments; resolution of previously identified ISMS issues; assessment findings; events; regulatory compliance; and employee safety concerns. These performance evaluations and an evaluation of potential system impacts were conducted by Performance Assurance with input from SMEs.

The system, performance, and impacts evaluation results were analyzed to determine conclusions regarding strengths, areas for improvement, focused training needs, changes to the system description, and system status and effectiveness. Based on these conclusions as well as information in the INEEL Institutional Plan, the Performance Evaluation Measurement Plan (PEMP), and DOE Budget Guidance and Direction, FY 2004 Safety Performance Objectives, Measures, and Commitments were developed.

The results of the evaluation are documented in this report. These results were briefed to the Senior Operations Review Board (SORB) and the Integrated Executive Council (IEC) who accepted the report and approved recommended FY 2004 Safety Performance Objectives, Measures, and Commitments.

3. SYSTEM EVALUATION RESULTS

Key processes and documents of the ISMS and functional programs that support ISMS implementation were evaluated by SMEs, Performance Assurance, and the LMRB. This section contains the results of those evaluations. The issues identified in this section are listed in Table 2 in the Appendix.

3.1 Key Processes and Documents

3.1.1 ES&H Infrastructure Maintenance

The ES&H Infrastructure Maintenance process was developed to address a judgment of need from the Type A investigation of the CO₂ accident at TRA. The purpose of the process is to ensure that incremental reductions in ES&H infrastructure funding do not result in conditions that can cause or contribute to accidents with serious adverse consequences to workers, the public, or the environment.

The process requirements are contained in the following documents:

- MCP-2668, “Financial Planning, Administration, and Control of Indirect Activities/Work”
- MCP-3416, “Baseline Change Control”
- GDE-112, “Detailed Work Plan Development Process Guidance.”

During FY 2003, all of these documents were revised to better define the ES&H Infrastructure Maintenance process. NE-ID was informed of these revisions and reviewed the changes.

Improvements

The following improvements were made in FY 2003 to the ES&H maintenance process:

- A definition for “Safety and Health Infrastructure” was developed and incorporated into MCP-2668 and GDE-112. The process was defined as the surveillance, maintenance, and support activities required to control facilities in a safe, stable condition and to maintain the facility systems and infrastructure in the operational condition dictated by approved safety and compliance documentation.
- GDE-112 was revised to include an activity code to “flag” ES&H infrastructure activities to improve the process for monitoring and managing changes to these activities. GDE-112 requires an ES&H representative to assess the scope for onsite safety, health, and environmental compliance. Activities in Level III schedules must identify the work discipline codes associated with each ES&H activity. The revised guide was implemented as part of the FY 2004 Detailed Work Plan.
- GDE-112 included instructions to populate a new S&H Infrastructure field with a “Y” if the activity/charge number is related to an S&H core infrastructure activity. This code will be used to identify and analyze the individual and cumulative effects of incremental reductions for funding ES&H infrastructure.
- A checklist was developed and incorporated into MCP-3416 that is required when any budget is developed or changed. The checklist is to be completed by the project manager and the ES&H manager for the project. The checklist requires any budget changes to be evaluated for cumulative impact. The checklist is required to be managed as a record in the project files.

- Training for the revised processes was provided to cognizant managers, project control engineers, and ES&H managers. Additional training was included in the FY 2004 Detailed Work Plan process.

Issues

One issue was identified in the *FY 2002 ISMS Annual Report*. NE-ID had concluded the existing ESH&QA Infrastructure Maintenance process was not fully effective (ISMS-2002-01). BBWI had disagreed. To resolve the issue, a joint NE-ID/BBWI team was formed to analyze the process and identify any necessary changes. The improvements detailed above resulted from this activity. NE-ID reviewed the changes after they were made and agreed the revised process was effective.

No issues were identified by the FY 2003 evaluation.

3.1.2 Assignment of Roles and Responsibilities

Specific roles, responsibilities, accountabilities, and authorities (R2A2s) have been established and documented for each INEEL management position at the director level and above. Generic R2A2s have been established for manager level positions. At the site area level, specific documents have been written to describe R2A2s for key positions. Each employee has an Employee Position Description (EPD) which defines the R2A2s for their assigned positions. All INEEL requirements documents and procedures assign responsibilities for implementation of the requirements and processes described in those documents.

During FY 2003, BBWI completed a major reorganization/restructuring which resulted in numerous changes to R2A2s. Most EPDs and R2A2 documents have been revised to address these changes. The primary changes were reflected in revisions to PDD-1005, "Site Operations Manual." PDD-1005 was replaced by two documents:

- PDD-1005, "INEEL Line Management and Operations Manual," which describes INEEL R2A2s and
- ICP-PDD-1005, "ICP Line Management and Operations Manual," which describes Idaho Completion Project (ICP) R2A2s.

NE-ID was notified of the changes to these documents. PDD-1004 was also revised to incorporate these changes in R2A2s and submitted to NE-ID for review and approval.

Improvements

During FY 2003, the following improvements were made in assignments of R2A2s:

- A document entitled *Guidance and Expectations for Company Lessons Learned Coordinators* was developed to help coordinators better understand their responsibilities.
- An INEEL-wide Subcontractor Technical Representative Program was defined with roles and responsibilities specified in Guide-165, "Subcontractor Technical Representative (STR) Handbook." In addition, functional responsibility for the STR Program was assigned to the Supply Chain Management organization.

Issues

Two issues that were originally identified in the *FY 2001 ISMS Annual Report* remain open. Both issues are now scheduled for completion during FY 2004.

- There was no formal process with criteria for identification of functional support areas and SMEs. (ISMS-2003-01)
- Charters of the Site Steering Committees did not consistently address the ISMS responsibilities of the committees. (ISMS-2003-02)

The *FY 2002 ISMS Annual Report* identified four R2A2-related issues:

- ISMS-2002-02: R2A2s for System Engineers and Structures, Systems, and Components (SSC) Engineers were not consistent in engineering, operations and maintenance procedures. All actions associated with this issue were completed in FY 2003.
- ISMS-2002-03: Roles and responsibilities for radiography operations were not well defined. The actions to develop an Engineering Design File (EDF) that defines the roles and responsibilities for the Quality Assurance and Radiological Control organizations and to revise MCP-127 as needed remain open and scheduled for completion during FY 2004.
- ISMS-2002-04: Ownership of the fixed radiological instrumentation program by Radiological Controls was not well understood or documented. The corrective actions for this issue were completed in FY 2003.
- ISMS-2002-05: Not all of the company organization charts on the INEEL home page were current. Specifically, Organizations 5000 and 7000 needed to be updated with current manager names, positions, and structure. One corrective action, building an automatic interface with PeopleSoft to reflect future changes, is scheduled for completion in FY 2004.

The FY 2003 evaluation identified the following R2A2 issues:

- R2A2s need to be better defined at some lower levels of the ICP organization to ensure clear interfaces between the subproject teams and operations personnel. (ISMS-2003-03)
- Designation of FSMs and SMEs for INEEL and ICP needs to be clarified (e.g., engineering, maintenance). (ISMS-2003-04)
- The roles and responsibilities of the Construction Field Engineer, including the inspection processes, needs to be better defined. (ISMS-2003-05).

3.1.3 Personnel Selection, Training and Qualification

Competence commensurate with responsibility is ensured through personnel selection, training and qualification. The process for selecting personnel for INEEL positions is described in the “Management Resource Manual.” When a manager identifies the need to hire an employee, the hiring manager and Human Resources personnel write an EPD that identifies job duties, necessary education, and years of experience required for the position. As job candidates are identified, the hiring manager validates that the candidate’s education and experience meet the EPD requirements. During the interview process, the hiring manager ensures that the candidate meets the more stringent job-specific requirements.

After candidate selection is complete, new employee orientation and training are performed. A new employee checklist is completed, general employee training is completed, an individual training plan is developed, and employee initial training and qualification are completed.

After the hiring process, the nucleus of the process is the Annual Training Process (ATP). The ATP provides a systematic method to identify, validate, cost and schedule existing and new training requirements. The ATP provides the basis for and documents initial training and qualification requirements. The ATP serves the same purpose for all continuing training and qualification requirements implemented throughout the remainder of the process.

Required training (initial and continuing) is documented in Book 1, "INEEL Training Requirements and Cost," which defines employee training and qualifications in three tiers: General Employee Training, Position Specific Training, and Job Specific Training. The training requirements (courses and qualifications) are defined using a set of standardized job codes. Job codes define the training and qualification requirements for a specific position that the employee must complete to be considered "competent" to perform safe and efficient work. Employee training and qualification is documented in the Training Records and Information Network (TRAIN).

The training and qualification process is described in PDD-13, "Conduct of Training," and PRD-5072, "Personnel Training and Qualification." This process is implemented primarily through the following procedures:

- MCP-27, "Preparation and Administration of Individual Training Plans"
- MCP-32, "Training Exceptions, Exemptions, and Extensions"
- MCP-33, "Personnel Qualification and Certification"
- MCP-35, "Training Needs Analysis"
- MCP-36, "Job Analysis"
- MCP-42, "Designing Courses"
- MCP-85, "Training Records Administration"
- MCP-9224, "Sitewide Training Analysis and Implementation"
- MCP-1169, "Annual Training Process."

During FY 2003, three of these documents were revised. MCP-32, MCP-42, and MCP-85 were revised for a number of administrative clarifications. MCP-1169 became effective in October of FY 2003 as a new procedure documenting the annual training process.

Improvements

Several improvements were made in Training and Qualification during FY 2003:

- A set of on-line reports were developed to allow management to efficiently identify individual and organizational training gaps in completion of training identified in job codes and to take the appropriate action (i.e., complete the training or remove it from an individual's training plan).
- As part of the Conduct of Operations Improvement Plan, the training processes and materials were revised to increase their effectiveness including the use of the ACETS simulator to improve procedure compliance and reinforce conduct of operations principles while reducing the time required to complete the training.

- As part of the Conduct of Maintenance Improvement Plan, the craft employee position descriptions were revised based on the INEEL job analysis. The new hire examinations for the six critical crafts were revised based on industry standards and the INEEL job analysis to ensure that new employees have the necessary entry level knowledge and skills for these positions. A sound technical basis for skill of the craft standards was established. Additionally, needs based continuing training was provided to selected crafts to improve task completion efficiency and effectiveness.
- Additional improvements in Training and Qualification were made in other functional areas. These improvements are discussed in Section 3.2.

Issues

Actions to address the remaining issue from the *FY 2001 ISMS Annual Report* regarding employees signing their EPDs and completing their new employee checklists were completed in FY 2003 (AFI-CCR-1).

The *FY 2002 ISMS Annual Report* identified 12 issues involving personnel selection, training, and qualification. Corrective actions for ten of these issues were completed; two remain open:

- ISMS-2002-06: Training was being inappropriately used as a corrective action for identified issues.
- ISMS-2002-15: Training on appropriate Information Management topics, such as software quality, had not been identified, developed, or implemented.

Remaining actions to close these issues are scheduled for completion in FY 2004.

The FY 2003 ISMS evaluation identified the need for focused training in 20 areas. These training needs are discussed in Section 6.4. An issue regarding lock out/tag out (LO/TO) training was identified: too many personnel are trained and considered qualified to perform LO/TO. Since some may be assigned infrequently to perform this task, their proficiency is questionable and may be a leading cause of continuing LO/TO events. (ISMS-2003-06)

3.1.4 Requirements Management

MCP-2447, "Identification and Rolldown of Requirements," describes the processes for integrating applicable requirements into implementing documents. The program is further implemented by LST-1, "Management Systems, Management System Owners, and Company-Level SME's," and MCP-135, "Creating, Modifying and Canceling Procedures and Other DMCS-Controlled Documents."

During FY 2003, all three documents were revised. LST-1 was revised to update personnel assignments. MCP-135 was revised to add two processes to control analytical procedures. MCP-2447 was revised to define only the required steps, to add sections to become compliant with functional area requirements, and to reflect current title changes. PDD-19, "Integrated Requirements Management Program," was incorporated into MCP-2447 to eliminate duplication of the program description. NE-ID was notified of the changes to MCP-2447 as required.

Improvements

The following improvements to Requirements Management were made during FY 2003:

- As part of a Process Improvement Project (PIP) examination of the directives review process, a Voice of the Customer survey revealed end users would benefit from additional, more detailed information regarding their responsibilities and the overall requirements management process. In response to this survey, requirements management training (TRN650) was updated, along with implementation of improved administrative controls to track training completion. Additionally, as new individuals are assigned requirements management responsibilities, they receive an e-mail containing detailed information that explains training requirements, training completion timeline, terminology, and resource information.
- A comprehensive effort was undertaken to initiate contract applicability reviews for all List A items to establish a verified baseline. Improvements implemented in this process will aid in more timely production of List A and heightened accuracy of content.
- The process to update LST-1 was improved to keep it current. Revisions can now be made within one week of receipt of an approved change, instead of within 90 days.

Issues

One issue remained open from the *FY 2001 ISMS Annual Report* involving revision of the requirements management process to incorporate changes to other than List A or B requirements. LMRB-RM-3 was resolved by a revision to MCP-2447.

The *FY 2002 ISMS Annual Report* identified multiple Requirements Management issues:

- Actions were completed to address four of the issues by fully implementing the following requirements:
 - ISMS-2002-18: The Workplace Substance Abuse Program as described in DOE Order 350.1
 - ISMS-2002-22: 10 CFR 830, “Nuclear Safety Rule, for Transportation and Criticality Safety”
 - ISMS-2002-23: DOE Order 461.1 for the transport of special nuclear materials and nuclear explosives
 - ISMS-2002-24: American Conference of Government Industrial Hygienists (ACGIH) threshold limit values for heat and cold stress.
- Actions to address three of the issues by implementing the following requirements were not completed and are scheduled in FY 2004:
 - ISMS-2002-19: DOE Order 420.1A, “Facility Safety”
 - ISMS-2002-20: DOE Order 433.1, “Maintenance Management Program for DOE Nuclear Facilities”
 - ISMS-2002-21: Two requirements in DOE Order 5480.19, “Conduct of Operations.”

- ISMS-2002-25: MCP-190 was revised to address a contract modification involving an incorrect reference.
- ISMS-2002-26: The appropriate format for Authorization Agreements was established.
- ISMS-2002-27: The Standards and Calibration Laboratory, the INTEC Analytical Laboratories, and the Radiological Health Support Services Laboratory revised their document control processes to comply with MCP-135.
- ISMS-2002-28: The appropriate document type was determined for procedures that implement explosives safety transportation requirements.

The FY 2003 evaluation identified the following issues:

- Implementing documents need to be revised to address the following requirements:
 - DOE ID O 420.D, “Requirements and Guidance for Safety Analysis.” (ISMS-2003-07)
 - ID M 251.A-1, “Directives System Manual.” (ISMS-2003-08)
 - ID O 433.A, Rev. 1, “Maintenance Management Program.” (ISMS-2003-09)
- The Assured Equipment Grounding Conductor Program needs to be updated in accordance with PRD-5099, “Electrical Safety.” (ISMS-2003-10)
- DOE O 443.1 in List B is redundant to 10 CFR 745 in List A. (ISMS-2003-11)
- The 10 CFR 120 requirement to have a PhD Clinical Psychologist as Employee Assistance Program director is not being met. (ISMS-2003-12)
- Requirements roll-down for the Mixed Low-Level Waste (MLLW) Backlog Project needs to be updated. (ISMS-2003-13)
- Requirements for Use Type 2 procedures need to be clarified. (ISMS-2003-14)

3.1.5 Facility Safety Basis Documentation and Maintenance

Facility safety basis documentation is required by 10 CFR 830, Subpart B, and DOE Order 5480.23. Facility Safety Basis requirements are implemented by the following documents:

- MCP-2449, “Nuclear Safety Analysis”
- MCP-1176, “INEEL Safety Analysis Process”
- MCP-2451, “Safety Analysis for Other Than Nuclear Facilities”
- MCP-2446, “Controlling Lists of Nuclear Facilities and Nuclear Facility Managers”
- MCP-3567, “Authorization Agreement with Safety Basis List”

- MCP-3740, “Controlling Lists of Nonnuclear, Radiological and Other Industrial Facilities and Facility Managers”
- PRD-164, “Safety Analysis for Other than Nuclear Facilities”
- PLN-489, “Nuclear Facility Safety Basis Work Plan.”

The unreviewed safety question (USQ) process helps to preserve the safety basis of a nuclear facility. It establishes the level of approval required to make a physical change in the nuclear facility, make a change to a procedure described in the safety analysis, or conduct a test or experiment not described in the safety analysis. It is also used to evaluate new information that has the potential effect on the safety basis. The USQ process requirements are specified in PRD-113, “Unreviewed Safety Questions” and implemented in MCP-123, “Unreviewed Safety Questions.”

Improvements

The following facility safety basis improvements were made in FY 2003:

- The final milestones were completed for document submittals to comply with the Nuclear Safety Rule. The final two milestones in PLN-489, “Nuclear Facility Safety Basis Work Plan,” were completed to upgrade the INEEL safety analysis reports for the Materials Test Reactor Canal at Test Reactor Area (TRA) and Test Area North (TAN) facilities.
- A controlled, company-wide list, LST-268, “INEEL Nuclear Facility/ Nuclear Facility Manager List,” was developed to identify and document the INEEL nuclear facilities and the nuclear facility managers.
- A controlled, company-wide list, LST-253, “Vital Safety Systems at INEEL Nuclear Facilities List,” was developed to identify a current list of the INEEL vital safety systems.
- Vital safety systems assessments were completed as required by the DOE implementation plan for Defense Nuclear Facilities Safety Board Recommendation 2002-2 and institutionalized as part of the Facility Evaluation Board process.
- Significant negotiations with NE-ID were conducted on a revision to DOE ID O 420.D, “Requirements and Guidance for Safety Analysis,” which was issued in July 2003. The new requirements for non-nuclear facilities will produce much less paperwork, fewer documents being submitted to NE-ID for approvals, and more reliance on established contractor program controls. Overall, the revision requirements provide for less duplication of existing controls and a significantly more efficient non-nuclear safety analysis process.

Issues

The *FY 2002 Annual Report* identified a partially completed issue from the *FY 2001 Annual Report*:

- ISMS-2002-29: Required annual assessment and updates of facility authorization agreements were not being performed as scheduled. This issue has been resolved. Each site area scheduled an assessment of their authorization basis and NE-ID approved PLN-489 Rev. 3 which provided the baseline schedule.

The FY 2003 ISMS evaluation identified two Facility Safety Basis Documentation and Maintenance issues:

- The USQ process is not being consistently implemented. (ISMS-2003-15)
- There is no controlled list of nonnuclear facilities and assigned facility managers. (ISMS-2003-16).

3.1.6 Activity Level Hazards Identification, Analysis and Control

PRD-25, “Activity Level Hazards Identification, Analysis, and Control” (HIAC), describes the process required to identify and analyze hazards at the activity level and to develop and implement controls for those hazards. Three primary documents implement the requirements of PRD-25:

- MCP-3562, “Hazards Identification, Analysis, and Control of Operational Activities”
- STD-101, “Integrated Work Control Process” (maintenance, modification, construction, decontamination and decommissioning (D&D) and environmental remediation (ER) project activities)
- MCP-3571, “Independent Hazard Review,” (research and laboratory activities).

These primary processes invoke additional processes as necessary including:

- MCP-3480, “Environmental Instructions for Facilities, Processes, Materials, and Equipment”
- MCP-7, “Radiological Work Permits”
- MCP-153, “Industrial Hygiene Exposure Assessments”
- MCP-3450, “Job Safety Analysis”
- PRD-112, “Criticality Safety Analysis.”

MCP-3562, STD-101, MCP-3571, and MCP-3480 are identified in PDD-1004 as key documents which require notification to NE-ID of intent to change. All four were revised during FY 2003, but no significant changes were made to the processes. NE-ID was notified of the changes before they were made.

Improvements

Improvements made in FY 2003 to Activity Level HIAC processes include:

- Training and tools were provided for recognition of error-likely situations and precursors, based on the Institute of Nuclear Power Operations (INPO) standardized list of error precursors, to make operations and support personnel more aware of conditions that may require an analysis of task demands. In recognizing these precursors, employees can take actions to promote safe behavior.
- PRD-25 was revised to change the required frequencies for review of highly hazardous and ordinary activities. These changes were made to ensure consistency with other company documents and expectations.

Issues

The *FY 2002 ISMS Annual Evaluation Report* identified that numerous issues and events documented in ICARE and ORPS indicated weaknesses in implementation of the HIAC processes (ISMS-2002-31). This issue was combined with Performance Commitments 10–14. Actions taken to address those commitments and their status are discussed in Section 4.1. The FY 2003 evaluation identified continuing issues and events related to HIAC. These problems are further discussed in Section 4.5.

3.1.7 Startup and Restart of Facilities and Activities

INEEL is required to perform certain activities for the startup of new facilities and activities and for the restart of existing facilities and activities that have been shut down. The requirements specify a readiness review process that in all cases demonstrates that it is safe to start (or restart) the applicable facility or activity. The requirements for nuclear facilities and activities are implemented by MCP-2783, “Startup and Restart of Nuclear Facilities.” This procedure requires two types of readiness reviews: Operational Readiness Reviews (ORR) and Readiness Assessments (RA). In preparation for a readiness review, the procedure describes a Management Self-Assessment (MSA) which may be performed. During FY 2002, a new procedure, MCP-1126, “Performing Management Self-Assessments for Readiness” was developed. Neither of these procedures was revised during FY 2003.

Improvements

MCP-1126 was fully implemented during FY 2003. Assessments of this process and performance indicated a significant improvement in these activities.

3.1.8 Integrated Assessment Program

The Integrated Assessment Program, which is described in PDD-1064, “Integrated Assessment Program,” is designed to be a comprehensive, integrated, risk-based approach for managing assessments. The program is implemented by the following documents:

- MCP-9172, “Developing, Integrating, and Implementing Assessment Plans and Schedules”
- LST-202, “Company Level Required Assessments”
- GDE-203, “Planning, Scheduling, and Performing Assessments”
- PDD-124, “Assessor and Lead Assessor Training and Qualification Program”
- MCP-552, “Performing Independent Assessments”
- MCP-8, “Performing Management Assessments and Management Reviews”
- MCP-1221, “Performing Inspections and Surveillances”
- CTR-69, “Charter for the Facility Evaluation Board.”

Improvements

A number of improvements to the Integrated Assessment Program were made during FY 2003. The need for these improvements was identified in both the FY 2001 and FY 2002 ISMS Annual Evaluations. These changes also address recommendations from a Six Sigma Performance Improvement Project.

Four of the documents listed above were developed in FY 2003 (MCP-1221, PDD-124, LST-202, and GDE-203) and four of the documents were revised (MCP-8, MCP-552, MCP-9172, and PDD-1064). Most of the changes had already been implemented during FY 2003 within the provisions of existing procedures. The new and revised documents more clearly detailed these changes to ensure proper implementation. These procedures provide clearer definition and differentiation of the types of assessment activities and implement a graded, tailored approach with less rigor and formality applied to the bulk of assessment activities (inspections and surveillances) (MCP-1221) and more rigor and formality applied to management (MCP-8) and independent (MCP-552) assessments. LST-202 provides a compilation of company-level assessment requirements to aid in ensuring they are planned and scheduled. GDE-203 provides guidance for implementing the Integrated Assessment Program. PDD-124 establishes a training and qualification program for personnel who perform independent assessments. CTR-69 was revised to clarify the categorization of deficiencies, include the assessment of Vital Safety Systems, and include DOE oversight.

Issues

The FY 2002 ISMS Annual Report identified three issues (ISMS-2002-32, ISMS-2002-33, and ISMS-2002-34) with the implementation of the assessment program. Actions were taken to address and resolve these issues.

The FY 2003 ISMS evaluation identified the following issues:

- The internal procedure for “Criticality Safety Program Assessment” (MCP-3419) is not consistent with the revised company assessment program requirements. (ISMS-2003-17)
- The Facility Evaluation Board CRADs do not adequately address the implementation of the Lessons Learned Program. (ISMS-2003-18)
- The Radiological Control Health Physics Instrument Laboratory assessment schedule and activities are not integrated with the directorate-level assessment program. (ISMS-2003-19)
- INEEL Training did not manage and document assessment plans and schedules in accordance with company procedures. (ISMS-2003-20)
- Waste Generator Services (WGS) has not assessed compliance with the implementation of DOE O 435.1. (ISMS-2003-21)
- Independent assessment of the Nevada Test Site (NTS) Waste Certification program at the INEEL is not documented. (ISMS-2003-22)
- Safety inspections required by MCP-3449 are not being efficiently planned, scheduled, and performed. (ISMS-2003-23).

3.1.9 Issues Management

The Issues Management Program, which is described in PDD-1007, “Issues Management Program,” is designed to ensure that problems (issues) which have a reasonable potential to cause adverse operational, environmental, safety and health, or quality assurance consequences are documented and resolved in an effective and timely manner. Items, services, and processes that do not meet established requirements are controlled and corrected using a graded-approach based upon the significance of the issue and the importance of the work affected. Issues and associated corrective actions are tracked in the Issues Communication and Resolution Environment (ICARE). The program is implemented by the following documents:

- MCP-598, “Corrective Action System”
- MCP-538, “Control of Nonconforming Items”
- MCP-190, “Event Investigation and Occurrence Reporting”
- MCP-192, “Lessons Learned System”
- STD-1113, “Cause Analysis and Corrective Action Development”
- PDD-1114, “Cause Analyst Training and Qualification Program.”

During FY 2003, MCP-598 and MCP-538 were revised to implement the improvements described below. NE-ID was notified of these changes prior to implementation as committed in PDD-1004.

Improvements

Major improvements to the Issues Management program were completed during FY 2003. Improvements to the Corrective Action System included the following:

- Establishment of a pre-screening process to determine issue validity.
- Improved criteria and revised process for Extent of Conditions evaluations and determination of applicability.
- SME and Functional Program Director ownership of generic issues to effect company resolution.
- More interface with the Lesson Learned System (MCP-192).
- SME review and concurrence of corrective action plans for significant deficiencies.
- A new requirement and guidance/criteria for determining and documenting recurring issues and adverse trends.
- Adoption and incorporation of new Occurrence Reporting process cause codes.
- Extension of corrective action plan due date for PAAA reportable noncompliances to match MCP-2547 (45 vs. 30 calendar days).
- General upgrade of MCP-598 with increased guidance and clarification of requirements.

- In-process development of base-lining classroom training (TRN1074) for Cognizant Director Alternates, Responsible Managers and Alternates, and LST-1 SMEs.
- ICARE debugging, base-lining, addition of new fields and deletion of unused/unnecessary fields to better support MCP-598 process.

The nonconforming item process as defined in MCP-538 was revised and upgraded to improve process timing by streamlining measures and associated upgrades to the ICARE nonconformance report module.

Further development work was accomplished during the latter half of FY 2003 on both the Lessons Learned and Occurrence Reporting systems in preparation for implementation during FY 2004.

Issues

The FY 2002 Annual Report identified several issues:

- ISMS-2002-35: Not all assessment findings were being entered into ICARE; some that were being entered were not being entered promptly. This issue was combined with FY 2003 Performance Commitment ISMS-2003-PC-15. The status of this commitment is discussed in Section 4.1.
- ISMS-2002-36: Corrective actions for some identified issues were inadequate or ineffective for addressing causal factors and known conditions. This issue was combined with FY 2003 Performance Commitment ISMS-2003-PC-16. The status of this commitment is discussed in Section 4.1.
- ISMS-2002-37: Tracking of actions for Pre-existing Conditions (PECs) in ICARE and the PEC database were not coordinated. Some changes had been made to ICARE without similar changes to the PEC database. Management determined that this issue did not require corrective actions.
- ISMS-2002-38: Noncompliance determination criteria was not being rigorously applied during the PAAA screening process and justification did not support conclusions resulting in incorrectly screened deficiencies and occurrences. In addition, the identification and screening process for subcontractors and vendors was not consistently performed. The corrective actions for this issue were completed.
- ISMS-2002-39: The number of reported employee safety concerns declined significantly in FY 2002. The cause of the decline needed to be determined to ensure the system is still effective. Reviews were performed during FY 2003. The results are discussed in Section 4.7.
- ISMS-2002-40: More focus and visibility were needed on completion of environmental improvements and corrective actions. To address this issue, quarterly reviews of environmental-related ICARE issues was initiated. Particular emphasis was placed on long-standing environmental issues. Environmental Compliance now meets as needed with individual program and project management to discuss these issues and ensure that appropriate prioritization and attention are given to these issues. A status review of the issues of concern indicated that these issues are being actively worked, have been appropriately prioritized, and are on reasonable schedules for resolution.

Three issues were identified by the FY 2003 ISMS evaluation:

- Issues were not being entered into ICARE as required. (ISMS-2003-24).
- Issues were not being appropriately categorized in ICARE. (ISMS-2003-25).

- Continuing inadequacies in corrective actions and corrective action management were identified. (ISMS-2003-26).

3.1.10 Performance Measurement and Analysis

PDD-126, “ESH&QA Performance Measurement, Analysis, and Reporting” describes the overall program including requirements, responsibilities, and implementing documents. The primary implementing documents include:

- MCP-1269, “Establishing, Monitoring, and Reporting ESH&QA Performance Objectives, Goals, and Measures”
- MCP-1175, “Analyzing ESH&QA Performance”
- MCP-1270, “Performing Annual Evaluations of the Integrated Safety Management System”
- LST-150, “ESH&QA Performance Reports.”

PDD-126 and the implementing documents were developed and issued in FY 2003.

Improvements

Development of the documents listed above completed formalization of the Performance Measurement and Analysis program. Databases and automated reporting systems were also developed to support implementation of the formal processes. All actions in PLN-693 were completed.

Issues

The *FY 2002 ISMS Annual Report* did not identify any new issues.

The FY 2003 ISMS evaluation identified that the reorganization/restructuring into two operating entities has resulted in adjustments and changes in performance measurements and analysis to meet the needs of the entities while preserving a historic reference for assessing performance. The scope and extent of these changes is yet to be determined. (ISMS-2003-27)

3.2 Functional Support Programs

In addition to the improvements that were identified in Section 3.1, improvements were also made to functional support programs. Those improvements are discussed in this section and in Section 4.1. Functional support program issues are either included in Section 3.1 or identified in Section 4.

3.2.1 Industrial Safety

As a result of program self-assessments and lessons learned in various industrial safety topical areas, several program improvements were made in FY 2003.

- **Fall Protection.** Clarification was provided regarding height applications for construction activities versus general industry. The revised procedure also clarified the requirements for use of a Fall Protection Plan.

- **Excavation.** A requirement for use of an excavation permit was added, along with recommendation for use of an inspection checklist.
- **Scaffolding.** A new scaffold request form and scaffold acceptance tag were developed. A checklist (guide) for scaffold inspections was implemented and criteria pertaining to guardrail and toe boards were revised.
- **Ladder Safety.** The procedure was revised to provide additional hazard information and to identify the appropriate tag to place on a defective ladder.
- **Safeguarding Equipment.** Procedure revisions were made to incorporate ANSI Standard requirements associated with new technologies accepted by Occupational Safety and Health Administration (OSHA) but not addressed in the OSHA standard. The document now addresses technology utilized in the SMC facility and some R&D activities.
- **Personal Protective Equipment.** Procedure revisions were made to implement additional controls on the purchase of PPE to ensure the proper PPE is provided.
- **Electrical Safety.** Several documents were created to complete the requirement flow down and establish a comprehensive electrical safety program. These documents included a general program description document (PDD), a PDD to define the Authority Having Jurisdiction for the company, a procedure for the assured equipment grounding program, and several site wide Job Safety Analyses for various electrical tasks.

3.2.2 Industrial Hygiene

Historical industrial hygiene exposure records have been sorted and filed into retrievable hard copy files. Historical hard copy records are being scanned into the HASS electronic database to provide electronic search capabilities. The “System 80” exposure information from the mainframe has been converted into a searchable access database. Completion of this effort is critical to the support of the Energy Employees Occupational Illness Compensation Program Act requiring retrieval of personnel exposure records.

INTEC has developed a confined space computerized inventory with hazard classification, location, and photographs. This inventory has been modeled after the CFA electronic inventory completed in FY 2002.

The ergonomic computer workstation software, WorkPace, has been deployed to 1,100 employees. The ergonomic program has effectively reduced the incidence of recordable CTDs from 34 in Calendar Year (CY) 2000, 12 in CY 2001, 5 in CY 2002, to 1 in CY 2003 YTD.

The Heat and Cold Stress program has been revised to include updated control measures and practices through the use of clothing adjustment factors, physiological monitoring, new WBGT tables, new equivalent wind chill tables, and the use of the WBGT estimator tool. These changes are expected to greatly enhance the effectiveness of the heat and cold stress program.

An industrial hygiene sampling guide, GDE-196, has been developed for use by the industrial hygiene staff. This document provides guidance for sampling activities and establishes consistent application of industrial hygiene sampling and data collection methodologies. This guide completes actions identified during the Bechtel Core Process review for industrial hygiene.

Two procedures, Lasers and Exposure Assessments, were added to the Subcontractor Requirements Manual to enhance industrial hygiene requirements for subcontractor activities.

A new compressed gas training course and a qualification program have been developed: Compressed Gas Safety Training (TRN1041) and Pressure System Assembler Qualification (QL00PSA). These two new courses are a significant improvement over the previous pressure system safety training which was provided by video.

Sampling results from exposure assessments are entered into the HASS database. A review of the database indicates a 66% reduction in the number of samples taken in FY 2003 compared to FY 2002. This reduction is based, in part, on the implementation of a statistical tool in HASS to allow discontinuing sampling when appropriate, training provided on sampling/statistical analysis, staff position rotations to various facilities, and general changes in work scope.

3.2.3 Hoisting and Rigging

The hoisting and rigging program procedures were revised to provide more comprehensive requirements for various evolutions or processes, which precludes personnel from having to use several procedures for any given evolution. Training requirements were established for a Person-In-Charge (PIC) of a critical lift. A mandatory company qualification program for PICs was established, as well as additional qualifications for specific facilities.

3.2.4 Fire Protection

The fire protection inspection, testing, and maintenance activities for Nuclear Facilities during FY 2003 have exceeded the 90% completion objective established in the NE-ID Program Execution Guidance.

The 2003 summer wildland fire season resulted in minimal impacts to the INEEL despite historic “Extreme” fire danger conditions. A review of Bureau of Land Management fuel assessments indicates the conditions of vegetation at the INEEL and throughout the region reached historic extreme conditions in June, July, and August with a higher fire danger than that experienced during the severe season of 2000. INEEL has experienced seven wildland fires during 2003 that involved a total of 718 acres. This is significantly less than the 10-year average of 13,751 acres. None of the fires were initiated by INEEL operations. The fires resulted in no damage to facilities or equipment, no injuries to personnel, and no involvement of known soil contamination areas. The successes of 2003 can be attributed to the INEEL commitment to wildland fire readiness, as well as effective initial attacks to control fires. The INEEL wildland fire management program has matured and proven to be effective. During 2003, the program has reduced site expenditures associated with wildland fire response, minimized interruptions to facility operations, and protected the INEEL’s environment as well as cultural and natural resources.

3.2.5 Radiological Control

Analysis of the Radiological Control Program status indicators demonstrates the BBWI Radiological Control Program has been effectively implemented, continues to improve and assures the radiological safety of the workers, public and the environment. The radiological performance indicator (RPI) tracks the relative rate of events during current calendar year versus previous calendar year. The CY 2003 RPI shows an approximate 40% reduction in radiological events over the previous year. The INEEL has had only one skin contamination during CY 2003.

Notable accomplishments and improvements to the Radiological Control Program include the following:

- The facility and site wide ALARA committee meetings have been enhanced to routinely cover the more important radiological work evaluations and to provide more effective ALARA feedback and improvement with line-management leadership. For example:

- A recent site committee evaluation used the ALARA lessons learned/feedback information developed as a result of INEEL's internal review of the report of a recent extremity overexposure at Lawrence Livermore National Laboratory. Several issues involving the level of ES&H involvement in work monitoring and controls were noted and resolved in accordance with MCP-598. It was specifically noted that the laboratory Independent Hazard Review (IHR) process has driven more effective ES&H involvement at INEEL.
 - The site committee set up an ALARA Symposium and site visit by the Hanford ALARA Center and a vendor (FRHAM) to demonstrate innovative ALARA techniques available for both D&D and radiological operations.
 - The ALARA committee has pursued improving the real time dose management process and involvement of the ALARA committees and line involvement in dose extensions.
 - The ALARA committee participated in the review of the investigation of the unexpected dose indication that drove the sole individual to exceed the INEEL's Administrative Control Level of 700 mrem in FY 2003.
 - The INEEL's ALARA process has been effective to reduce exposures and manage changes in a period of increased work scope and hazards.
- Major INEEL project milestones involving work with significant radiological hazards/risks and controls were completed during the year. Several of these projects included development of innovative approaches to accomplishing work and controlling the hazards associated with the radioactive materials handled. ISM principles were implemented to allow the projects to meet very aggressive schedules but also complete the work safely and with low exposures to workers. Examples of activities where the radiological control staffs effectively supported mission work planning and accomplishment include:
 - TRA Core Internal Changeout planning and control tailoring. Innovative moisture control and containments have been developed.
 - RWMC work planning, development of work processes and effectively tailored controls for the Glovebox Excavator Method (GEM) project work on PIT 9.
 - INTEC work planning, development of work processes and effectively tailored controls for significant tank farm cleanup work and CPP-603 ISFS cave refurbishment, both involving very high radioactive contamination and radiation hazards.
 - TAN work planning and development of work processes and effectively tailored controls for TAN 616 decontamination and disposal.
 - PBF work planning and control development for the disassembly, packaging, shipping and storage of PBF fuel modules from canal to dry storage.

The innovative radiological control approaches have supported completion of the work in accordance with aggressive project schedules without significant radiological problems as shown in the low radiological event rates.

- Contamination-control-at-the-source tenets were reinforced site wide driving improvements in the radiological control program. The radiological event rate was reduced significantly over the past three

years, due in part, to these improvements. Use of containment, engineered ventilation, and decontamination of areas has reduced radiological risk and problems.

- A sound PAAA process has continued internal to the Radiological Control organization. This process was reviewed by the INEEL PAAA staff and found to be effective. The internal PAAA staff review identified enhancements to the maintenance of the organization's records.
- The Radiological Control staff also received many lessons learned briefings on site wide or individual radiological and work control issues to ensure the feedback and improvement process is continually used and lessons reinforced. In addition, DOE evaluated the annual radiation worker training newsletter and rated it outstanding.
- The site's radioactive sealed source inventory controls were enhanced and the population of sources in the program reduced from over 700 to less than 350 through an aggressive source reduction initiative.
- Construction and startup activities associated with the new INEEL Health Physics Instrument Laboratory were highly effective. Radiological control response to vendor-introduced system contaminants that caused the sources to stick outside of the designed shield housings resulted in full system recovery and minimized worker dose. The new facility provides many efficiencies and state-of-the-art technology to calibrate and test health physics instrumentation.
- Multiple actions were taken to use Six Sigma initiatives to improve program effectiveness:
 - Health Physics instruments performance levels were evaluated and reduced calibration frequencies were established. The reduced rate of calibrations will significantly reduce costs while maintaining adequate instrument performance.
 - Evaluations were performed for all surveys being conducted and were compared against those required by regulation. Plans have been developed to eliminate non-regulatory driven surveys at facilities unless they are shown to be necessary for radiological safety.
 - Radiation worker requalification training improvements, including development of a web based training course, have been pursued to reduce the difficulty and extent of requalification requirements. Travel to administration sites and reduced practicals for approximately 2,700 radiation workers is expected to save several hundred thousand dollars annually.
- Many radiological issues that have been identified, effectively addressed, and resolved, demonstrate that an effective feedback and improvement process is in-place. Examples of the issues include:
 - Problems were found with the proper survey and "release" of potentially radioactive materials from controlled areas. The organization developed a streamlined and simplified procedure with flowcharts to help implementation of the release activities. Training was conducted for the entire Radiological Control organization.
 - Breakdown in high radiation area controls occurred several times late in FY 2002. The actions implemented in FY 2003 included additional closure adequacy checks and secondary locking verifications. No additional issues have surfaced since the corrective actions were implemented.

- Surveys at several areas did not include adequate monitoring for the radionuclides present. The facilities developed or updated the technical basis and implemented multiple survey practice changes to ensure adequate monitoring.
- The CFA area had degraded radiological performance noted following a reduction in radiological management funding. An evaluation was conducted and a new manager assigned. The most recent reviews found performance restored to previous levels.

3.2.6 Criticality Safety

MCP-3006, “Performing and Reviewing Criticality Safety Evaluations,” was revised to incorporate additional requirements for independent review. In addition, MCP-3419, “Criticality Safety Assessments and Inspections,” was revised to add a requirement to perform annual management assessments. Quality improvement/performance metrics were also developed for the criticality safety program.

As a result of the Integrated Quality Assurance Management System (IQAMS) gap analyses, a records management plan for criticality safety was developed and new training requirements were established (MCP-3039) for engineers involved with software configuration control and “quality affecting” requirements listed in PLN-533.

3.2.7 Emergency Management

The Emergency Services Organization made significant improvements in the program self-assessments including consistent scheduling and reporting of self-assessment activities by the various departments within the organization.

Fire Department On Scene Command capabilities were improved through the addition of wireless communications for the mobile on scene command post. Fire Department On Scene Commanders have direct access to information resources resulting in a faster and more accurate flow of information to support emergency scene decision making.

Fire Department operations training has been improved by increasing the operating reliability of the Firefighter Training Facility (FFTF). A working relationship was established between the Fire Department and Physical Security to provide preventive and corrective maintenance capabilities. Technicians and facility operators received training and certification from the FFTF manufacturer, Symtron Systems Inc. This joint effort has resulted in a significant increase in facility availability and performance, and has improved emergency response capabilities and firefighter safety.

3.2.8 Price Anderson Amendments Act Program

The INEEL PAAA Coordinators office conducted PAAA Compliance Officer/Compliance Coordinator Refresher Training to improve consistency in performing and documenting PAAA screenings as well as providing an enhanced understanding on nuclear nexus considerations and documentation related PAAA noncompliances. This added emphasis was incorporated into the existing PAAA Compliance Officer/Compliance Coordinator Training.

3.2.9 Conduct of Engineering

A revision to the design verification process was completed to allow technical checking (defined as a critical technical review to verify that requirements are met) as an acceptable minimum level of design

verification. This avoids the cost of an extensive formal design review by committee when such a review is not value added.

Significant revisions to the engineering procedures applicable to controlling software used to design or operate facility systems was completed. This action was part of a company-wide coordinated improvement of the software management process in response to an internal audit and in anticipation of a DOE response to DNFSB Recommendation 2002-1.

A major initiative involving all Engineering Managers was undertaken to improve the quality of engineering products with specific emphasis on technical reports (typically documented as Engineering Design Files). An “Engineering Stand Down” was held to discuss issues and reiterate performance expectations, and a comprehensive training presentation was developed to communicate lessons learned.

A feature/section entitled “Safety by Design Alert” was added to the Engineering Web Site. Brief technical articles presented through the Engineering Web Site provide focused information to be used by design engineers (and others) to reduce risk in designed products. Each of the articles is reviewed through the appropriate engineering discipline(s) and by the Engineering Council prior to issue. At the present time there are three such articles on the Web Site. They cover design of pendant-mounted light fixtures, compressed gas system design, and use of Engineering SMEs.

The System Engineer “Hot Topics” training activity was initiated, which is a periodic session (presented at multiple areas on the Site) to communicate new and important issues to operations system engineers. The topics are highly varied and are selected to address issues of general impact. Recent topics included the company restructuring and its impact on system engineer roles and responsibilities, and preparations for a Headquarters review of the system engineer program.

3.2.10 Conduct of Maintenance

The Physical Assets Maintenance and Operations (PAM&O) organization was established to consolidate the program function with maintenance execution responsibilities to ensure efficient work processes and balanced maintenance priorities. This new organization will also ensure that maintenance staffing levels are better aligned with budget and need. The reorganization included implementation of centralized craft support and specialized core teams, establishment of a Reliability Centered Maintenance organization, and alignment of the Condition Assessment Survey (CAS) and Asbestos Programs with the INEEL Maintenance Management Program. As part of the effort to efficiently manage maintenance costs, a Facility Infrastructure Sustainment Costs database was implemented and a model was established to forecast level of maintenance for an asset according to its life cycle phase (active, inactive, decommissioned). Interface agreements between PAM&O and site facilities have been approved. In accordance with the interface agreements, PAM&O will begin maintaining real property site wide including work planning, scheduling, coordination, and execution.

3.2.11 Construction Management

Based on a review of recent subsurface incidents, a special review team determined that the subsurface investigation process was not the cause of the incidents but that process improvements could be made and the overall program would likely benefit from a change in ownership. The Subsurface Investigation Team was transferred from the Maintenance organization into the Construction Management organization, additional testing equipment was obtained, support resources have been increased, and process improvements have been implemented.

Bechtel Field Engineer discipline workshops were conducted for construction engineers and Bechtel Construction Supervision Level 1 training was provided to all construction staff. This training significantly benefits the technical skills and knowledge of the construction staff and provides cost savings to the customer by using previously developed training.

Construction Subcontractor Technical Representatives (STRs) completed 30 hour OSHA training. This training provides added knowledge to field personnel who will be responsible for managing subcontractors. This training also increases management awareness of the OSHA requirements and will assist in ensuring compliance in the future.

3.2.12 Project Management

The requirements of new DOE M 413.3-1, “Project Management for the Acquisition of Capital Assets,” were implemented in Manual 7 procedures and guides. Significant changes included:

- Incorporation of new terminology for the four project phases
- Definition of the role of the DOE project director
- Addition of high-level functional requirements in early planning documents to form the basis for evaluating alternatives and assist in project planning
- For Capital Assets Projects:
 - Deletion of the requirement for a preliminary acquisition plan.
 - Removal of recommended combining of critical decisions (e.g., combining CD-0 and CD-1 for ER projects).
 - Changed requirement for formal documentation of value engineering for projects over \$5M.
- Discussion of contractor support for special reporting and quarterly reviews within the DOE organizations.

The Project Management Tool Box was implemented to integrate project control tools for project status, project performance analysis, and project reports. The deliverable-based, earned-value tool box is now in place on the Glovebox Excavator Method (GEM) Project and the Low Sodium-Bearing Waste Tank Farm Project, and is being implemented for all ICP projects. Currently, the tool box includes the INEEL Progress and Performance Report (IPPR), the Procurement Tracking System, and Construction Quantity Unit Rate Report (QURR). The IPPR is a management schedule and man-hour tracking system for Engineering performance measurement. QURR is a tool for tracking construction fabrication activities.

A new Project Management lessons learned system was initiated. As defined in a revision to MCP-9106, “Management of Projects,” project managers are now required to review previous project lessons learned/best practices during both the definition and execution phases. A new Project Management lessons learned system, database, and home page were established.

3.2.13 Waste Generator Services

Waste Generator Services completed a review of procedures and eliminated or consolidated procedures to streamline the program where feasible. Material profiles have also been reviewed which resulted in the inactivation of over 500 profiles.

3.2.14 Procurement

BBWI has significantly improved the process for procurement of materials and services as a result of recommendations made by a cross-functional team using Six Sigma methodology. The new process, implemented in less than six months, utilizes accurate, advance forecasting of material and service needs, the formation of teams of experts necessary to accomplish the task, and a simplified, yet comprehensive, method for solicitation, negotiation and award. Although the new process is in its infancy, BBWI is already reaping dividends. The major acquisition forecast for FY 2004 is already complete, and teams are being formed to effect those procurements.

The Subcontract Administration Guide was developed internally and presents the company's standard guidance for managing contracts. Its use is to ensure a consistent approach to administering contracts, clearly understanding the general provisions of the contract being managed, as well as those of the prime contract before taking any action prescribed by this guidance, and using the Guide in conjunction with the INEEL Procurement Process Description and other approved procedures and requirements.

BBWI's Purchase-Card Program has undergone continuous improvements throughout the year. In July 2003, DOE-HQ performed an independent assessment of this program. The audit team summation during the audit exit conference characterized the program as the best observed to-date in the complex with specific note of BBWI's internal surveillance/review practices and the working relationship between the program, Internal Audit, and Property Management.

3.2.15 Quality Assurance

The IQAMS initiative was performed during FY 2003 to address Quality Assurance (QA) Program implementation issues identified during the FY 2002 ISMS Annual Evaluation. This multi-phase work effort was designed to assure in-depth roll-down of QA Program requirements into the appropriate working level procedures and assure adequate training and indoctrination of personnel performing the work tasks. The process involved workers at all levels to assure roll-down and increased the level of awareness of QA Program requirements. As a result of the IQAMS gap analysis, the hazard identification and mitigation process (MCP-3562) was revised to add 15 screening questions for operational activities that involve quality.

Quality Assurance personnel training plan development and implementation was accomplished during FY 2003 to implement PDD-1113, "Quality Assurance Organization Training Program." Eighty percent of the target audience has been indoctrinated and trained. Implementation of PDD-1113 has consolidated training of personnel doing inspection, quality engineering, metrology, administrative, and quality management. This program will assure competence commensurate with responsibilities (CCR) in the Quality Assurance Organization. Inspector and metrologist qualifications and certifications are now listed in Book 1 and are maintained in the TRAIN database.

A Quality Assurance Audit function has been reestablished in the QA Organization to implement the requirements of PRD-5089, "Quality Assurance Internal And External Audits." The QA Organization has several certified QA Lead Auditors and will support independent audits of QA Program implementation.

Significant efforts have been focused on improving the material control process during FY 2003. Formal cause analysis has been performed to identify process failure factors and assist with corrective action plan development. Material control procedures have been developed and/or revised to improve the process and additional corrective actions are scheduled to be completed during FY 2004.

The QA Organization has developed a process to improve QA Program implementation feedback. Issues entered into ICARE will be evaluated by indoctrinated QA personnel closest to the activity and categorized against QA Program criterion. This information will be binned, charted, and adverse trends will be further investigated to determine failure causal factors and identify process deficiencies.

A Software QA improvement task team was formed to address previously identified process deficiencies. This Software QA team analyzed requirements and identified software categories or types that are used, developed, or modified to support INEEL work. With this base knowledge, software control process flows were developed and control procedures were generated, revised, reviewed, and approved. Deployment of the new Software QA Program is ongoing and is expected to be completed by the end of FY 2004.

The Nonconformance Control process has been modified to address improvements actions identified by a six-sigma process improvement team and to synchronize this issue management process with ICARE. MCP-538, "Nonconformance Control," has been revised to improve efficiency and effectiveness. The Lotus Notes NCR module was updated to align with MCP-538. Deployment was completed during FY 2003 and implementation will be monitored in FY 2004 to assure success.

3.2.16 Safeguards and Security

Integrated Safeguards and Security Management (ISSM) joined with Integrated Safety Management (ISM) to integrate security awareness events into ISM/VPP unit activities. Changes include displays, presentations and activities to increase employee awareness of security and safety at the INEEL. Eleven VPP units participated in these events.

ISSM has been added as an element of the Facility Evaluation Board (FEB) with Safeguards and Security representatives participating as members of the FEB team. The effectiveness of ISSM, implementation of S&S requirements, and operations involvement in and support for the overall security program are evaluated.

3.2.17 Packaging and Transportation

A process was developed for obtaining pre-hire drug and alcohol testing information from past employers of driver applicants and for providing testing information to prospective employers of current and past employees.

A Process Improvement Project focused on reducing radioactive materials shipping occurrences was completed. The comprehensive review of all radioactive shipments by a second shipper was identified as a process strength and a very effective means to identify potential issues prior to release of the shipment.

3.2.18 Information Technologies

Many improvements in telecommunications and computer systems contributed significantly to the INEEL's ISMS performance. These improvements include the following:

- A new Verizon-owned cellular tower was installed at CFA which eliminates dead spots and increases signal strength. This results in fewer dropped calls and faster call completion for subscribers located at the site, including emergency response and management personnel.
- Equipment was retrofitted in the protected power systems (UPS and battery systems) for telecommunications via Howe Peak, East Butte, and CFA-609, locations that are essential to the INEEL's operations, emergency, and security organizations.
- As a result of the IQAMS gap analysis, several procedures related to software development and implementation were created and/or revised to emphasize enterprise architecture and document management. Related training and associated job codes were also developed. Additional actions pending for FY 2004 will ensure that the changes are effective and determine additional actions needed.
- A Blackberry server is now set up and linked with the INEEL's Notes e-mail servers, ensuring shorter response times to urgent issues of an operational or emergency nature, by allowing subscribers to send and receive messages and access other data from anywhere within Verizon's coverage area, including site locations where there is no wired telecom infrastructure and while on travel.
- Older tape back-up systems were migrated to Tivoli Storage Manager and new storage hardware was implemented, to safeguard project and organizational data and provide greater ease of use and faster response for those needing to retrieve files from the back-ups.
- The INEEL Waste Tracking System application was updated with new capabilities to support the INEEL CERCLA Disposal Facility in support of a PEMP milestone.
- Significant progress was made to migrate to the Trunked Narrowband Radio System architecture which provides much greater system responsiveness and reduces interference. Emergency response and security personnel depend heavily on this system and its reliability is vital to prompt response during emergencies.
- More robust search capabilities have been built into the INEEL's intranet home page providing quicker, more accurate document search results.
- The INEEL's Enterprise Directory now has 'preferred name' capability and connectors to other repositories (e.g., Notes core data and the phone/org directory), to aid in locating information needed during both emergencies and operational activities.
- Collaborative work tools, such as instant messaging, web-based conferencing, and electronic "work spaces," have now been made available. The GenIV International Forum (nuclear engineering) is an early, enthusiastic user of these tools.

3.2.19 Property Management

Several accomplishments were made in FY 2003 in Property Management including:

- Continued cost savings, with cumulative savings compared to the FY 2000 baseline exceeding \$2 million.
- Improved asset accountability across the company achieving a 45% reduction in unlocated property reports.
- Delivery of property training to over 95% of company employees.
- Creation of the INEEL Education and Research Transfer Program.
- Automation of utilization reporting for excess property.
- Implementation of an end user accountability program for NE-ID direct operations.

3.2.20 Records Management

Over 19,000 boxes were returned from the Federal Records Center (FRC) in Seattle for continued storage at the new records storage facility. With the increasing cost of storage at the FRC, combined with a need for local control and retrievability, this transfer has resulted in a savings of almost \$50K annually.

MCP-557, "Managing Records," was significantly streamlined and a new template (TEM-103) was created for the development of records management plans that includes all the steps necessary for compliant management of records. MCP-87, "Responding to Freedom of Information Act and Privacy Act (FOIA/PA) Requests," was revised to significantly improve the processes used in responding to FOIA/PA requests. This revised procedure ensures more efficient use of company resources as well as more timely responses.

Records Management released a new web-based Box Submittal System and a desktop guide that greatly simplifies the processes for the records coordinators and the records storage staff in sending, receiving and maintaining inactive records.

A new search engine, named Docu-Search, was designed to quickly retrieve information and records from many data sources and provide a user with the ability to perform global searches or quickly narrow a search down to a specific data source. Currently over two million records can be located or retrieved through this system.

3.2.21 Document Management

All facility Nuclear Safety Analysis Reports are now controlled at company approved document control centers and are available on EDMS. In addition, field changes for all controlled documents are now located on EDMS for user accessibility which precludes the use of separately controlled field-use copies of procedures. This implementation reduces the safety risk of using a non-current procedure and provides easy access to the information.

INTEC document identifiers were modified to bring them into compliance with the company document numbering system. Consolidating multiple legacy numbering systems and variations in those numbers

into the company numbering system will result in cost savings, allow simplified and more useful searches and reports on EDMS, and provide uniformity between INTEC and other future ICP projects.

The FY 2002 ISMS review of the Document Management functional area identified three laboratories that were out-of-compliance with MCP-135 requirements; specifically controlling their documents outside of the EDMS release tool. During FY 2003, all three laboratories have worked with document management personnel to coordinate the migration of their documents into EDMS to correct this issue. Successful migration efforts have been completed for the Standards and Calibrations Services, Radiological Health Support Services, and the Analytical Laboratories Department. Some migration efforts will continue in FY 2004.

3.3 Opportunities for Improvement

For the FY 2003 ISMS evaluation, the SMEs and FSMs were tasked with identifying improvement opportunities in three areas:

- Areas where List A or B requirements are exceeded
- Areas where requirements can be implemented more efficiently
- Areas where implementation behavior is overly conservative.

These opportunities, which are listed in Table 3 in the Appendix, were identified as part of the ISMS continuous improvement process.

3.3.1 Areas Where List A or B Requirements Are Exceeded

The focus on this category is processes which exceed requirements. BBWI sometimes decides to exceed requirements as written to ensure the safety of activities being performed. However, sometimes requirements are exceeded unintentionally or without appropriate review and approval. Opportunities for improvement were identified in the following processes:

- Storage of incompatible and time sensitive chemicals (ISMS-2003-OFI-01)
- Ergonomics record keeping (ISMS-2003-OFI-02)
- Software qualify for some activities (ISMS-2003-OFI-03)
- QA review of work orders (ISMS-2003-OFI-04)
- Records management assessments (ISMS-2003-OFI-05)
- Explosives safety training (ISMS-2003-OFI-06).

3.3.2 Areas Where Requirements Can Be Implemented More Efficiently

The focus of this category is processes that do not exceed requirements but can be implemented more efficiently. Opportunities in this category are routinely identified and implemented. Opportunities for improvement were identified in the following processes:

- Implementation of Quality Assurance requirements in Engineering processes (ISMS-2003-OFI-07)

- Construction Management processes including:
 - Constructability process for construction projects
 - Wireless mobile communications
 - Performance databases
 - Records management
 - Weld Test Lab activities
 - Standard Work Procedures (ISMS-2003-OFI-08)
- Criticality Safety procedural and posting requirements for criticality controlled areas (ISMS-2003-OFI-09)
- Implementation of Explosives Safety requirements (ISMS-2003-OFI-10)
- Hoisting and Rigging Equipment compliance inspections and testing (ISMS-2003-OFI-11)
- Industrial Safety processes (ISMS-2003-OFI-12)
- Maintenance organization (ISMS-2003-OFI-13)
- USQ process (ISMS-2003-OFI-14)
- Project Management reporting and performance measurement (ISMS-2003-OFI-15)
- Radiation worker training (ISMS-2003-OFI-16)
- Standardization of measurement and test equipment (ISMS-2003-OFI-17)
- Processing of foreign visits and assignments (ISMS-2003-OFI-18)
- Waste container management (ISMS-2003-OFI-19).

3.3.3 Areas Where Implementation Behavior Is Overly Conservative

The focus of this category is processes that do not exceed requirements and appear to be efficiently designed but are being more conservatively implemented and therefore are inefficient. Opportunities for improvement were identified in the following processes:

- Lessons Learned database maintenance (ISMS-2003-OFI-20)
- Fabrication work control (ISMS-2003-OFI-21)
- Expedited work orders (ISMS-2003-OFI-22)
- Radiological surveys (ISMS-2003-OFI-23)
- Radiological PPE—use of scrubs (ISMS-2003-OFI-24)
- Use of waste type procedure (ISMS-2003-OFI-25).

4. PERFORMANCE EVALUATION RESULTS

4.1 Progress on FY 2003 Performance Objectives and Commitments

This section discusses progress made during FY 2003 in achievement of FY 2003 Safety Performance Objectives and Commitments.

4.1.1 Performance Objectives

The following performance objectives were identified for FY 2003:

- Achieve operational excellence.
- Maintain and continuously improve the Integrated Safety Management System.
- Continuously improve safety performance.
- Achieve and maintain full environmental regulatory compliance.
- Meet commitments on schedule, within costs, and, as appropriate, through integration of science and technology.
- Complete clean up of legacy contamination.
- Conduct operations so as to conserve natural resources and minimize environmental impacts and thereby achieve DOE pollution prevention and energy efficiency goals.
- Implement and maintain a compliant Quality Assurance program that promotes employee and management participation and strives for continuous improvement.
- Implement a standards-based management system to integrate management processes and strengthen the INEEL infrastructure.

Positive progress was made on achievement of each of these objectives as demonstrated by achievement of FY 2003 performance commitments discussed below, improvement in performance measures discussed in Section 4.2, and other improvements discussed in Section 3.

4.1.2 Performance Commitments

The FY 2003 Performance Commitments were developed from the FY 2003 PEMP, the FY 2003 ESH&QA PEGs, DOE budget guidance, and areas for improvement identified in the *FY 2002 ISMS Annual Report*. Eighteen commitments were made for FY 2003.

Overall Status: Table 4 in the Appendix shows the overall status of completion of the FY 2003 Performance Commitments. Thirteen were completed and five were partially completed (166 of 176 actions were completed). The five that were partially completed have nine actions that extend into FY 2004. All but one of these five are identified in Section 7.3 as FY 2004 Performance Commitments. The one involving improving ISMS implementation for subcontractors has been substantially completed. The remaining actions were not considered to be significant enough to carry over the commitment. Table 4 shows the FY 2003 commitments that carry over and become FY 2004 commitments.

The FY 2003 Performance Commitments and the status of achievement are listed below:

- **Maintain ISO 14001 Registration for the INEEL Environmental Management System:** Maintaining registration requires continued implementation of program requirements and demonstrating acceptable performance in an annual self-assessment and in semi-annual surveillances by the registrar auditors.
- **Status:** Achieved—In June 2002, BBWI achieved ISO 14001 Registration as a result of a registration audit conducted by NSF International Strategic Registrations, LTD (NSF-ISR). The audit determined that the Environmental Management System (EMS) conformed to the requirements of the ISO 14001 Standard. Surveillance audits were conducted by NSF-ISR in November 2002 and May 2003. In November the EMS was determined to be “in conformance with ISO 14001, with no nonconformances” and in May the EMS was determined to be “adequate, with no nonconformances.” The absence of nonconformances represents the highest audit result possible.
- **Disclose self-identified Environmental Compliance issues:** Disclosure is identified as a commitment to ensure continued improvements in environmental compliance.

Status: Achieved—Environmental noncompliances have been disclosed in a timely manner to the appropriate State and EPA regulators, in accordance with MCP-3688 “Environmental Self-Disclosure Reporting.” The noncompliances are self-identified to the regulators through the self-disclosure log. This enhances open communication of regulatory compliance issues with the environmental regulatory agencies. Increased management attention and effective implementation of the environmental management system has also resulted in fewer noncompliances requiring disclosure and completion of corrective actions associated with noncompliances remaining on the logs.

- **Implement actions for Pollution Prevention and Energy Efficiency:** These actions address goals for waste reduction, sanitary waste recycling, Superfund Amendments and Reauthorization Act (SARA) 313 chemical usage, energy consumption, petroleum consumption, and alternative fuel usage. Performance measures have been developed for each of these efforts.

Status: Partially Complete—Progress was made in the achievement of all pollution prevention goals established by DOE. Goals for waste reduction, sanitary waste recycling, and SARA 313 chemical usage are being met and exceeded. The following are examples of pollution prevention activities completed in FY 2003:

- 56 drums of sodium nitrate and 14 drums of potassium nitrate were directed to be used as product instead of being disposed of as waste
- 12,733 lbs of halon were diverted from waste disposal.
- 37,888 pounds of lead acid and gel cell batteries were removed from the site.
- 3,382 gallons of oil were recycled through the Defense Supply Center.
- 45,000 gallons of low-level waste (LLW) from the TRA VCO program were reduced by 95%.
- A waste generator financial accountability system was implemented for newly generated waste.

One action was not completed in FY 2003 as planned. Revision of MCP-454, “INEEL Recycling” is scheduled for completion in FY 2004.

Each action listed in the *INEEL Energy Management Plan* (INEEL/EXT-02-01576) was addressed during FY 2003. Included in this plan are actions required by a Performance Agreement for Energy Management between NE-ID and DOE-HQ (Federal Energy Management Program), and the FY 2003 PEG #EM-I-05. Completed actions include the following:

- Compilation and submittal of FY 2002 Annual Energy Use Report and Self-Assessment,
- Revision of the Energy Management Plan to reflect the FY 2003/2004 Performance Assessment,
- Submittal of monthly and quarterly reports to NE-ID and the Federal Energy Management Program (FEMP),
- Submittal of quarterly Energy Related Newsletters to NE-ID and FEMP, and
- Preparation of proposals for Model Program studies and Retrofit Projects for increased energy efficiency at INEEL and accomplishment of study and project milestones.

Two of the three prorated energy efficiency goals for FY 2003 were not met: petroleum consumption and alternative fuel usage. This performance is further discussed in Section 4.2

- **Complete scheduled enforceable environmental milestones:** In FY 2003, 18 environmental milestones were scheduled for completion including five VCO, eleven FFA/CO, one STP, and one Settlement Agreement milestone. Actions to achieve these milestones were major FY 2003 programmatic work commitments.

Status: Complete—All enforceable environmental milestones scheduled for FY 2003 were completed on or ahead of schedule.

- **Complete scheduled actions in the EM Accelerated Cleanup Plan:** The EM Accelerated Cleanup Plan identifies activities and milestones to accelerate environmental cleanup in line with the recently released Top-To-Bottom EM Review Report. Completion of scheduled actions will facilitate application of the DOE investment to other DOE missions and growing the INEEL as a R&D laboratory.

Status: Complete—Visible progress was made in FY 2003 towards the goal of accelerating cleanup and reducing risk at the INEEL. At year-end, ICP had performed \$32.9 million more scope than it did in FY 2002, including \$30 million executed as unfounded scope challenges by NE-ID. This ability to perform significant unfounded scope is an indication that the controls and work process improvements that we have been implementing since contract inception are generating results.

INEEL has been criticized in the past for only achieving one or two major milestones per year. This year that perception was overcome. Progress was made in every PEMP initiative with Test Area North footprint reduced, ICDF operations initiated, WAG 4 (CFA) disposed, spent nuclear fuel transferred to dry storage, one entire class of special nuclear material eliminated from the site, FY 2003 goal of shipping 807 m³ legacy mixed low-level waste exceeded, 3100 m³ milestone met, liquids reduced, and high-level waste tanks cleaned. These are all representative of the major work scope completed.

The amount of work scope completed is noteworthy when viewed with the decrease in the number of safety incidents, which have been steadily declining over the last four years.

- **Complete scheduled actions in the Chemical Management System Work Plan:** Implementation of actions in this multi-year plan will continue the significant improvements achieved in chemical management.

Status: Complete—In FY 2001, an extensive six sigma process improvement analysis of Chemical Management was performed. Many of the identified improvements were implemented in FY 2002. In FY 2003, this initiative continued with completion of the following planned improvements:

- An extensive upgrade to the INEEL Chemical Management System database was completed. This upgrade allowed the movement of the database from a client/server system to a web based system which is more user friendly, intuitive to use, and portable. It also allows user access to the application from anywhere at any time.
- Actions were taken to consolidate and eliminate chemical storage areas. As a result, the majority of the chemical storage areas used by maintenance at CFA were eliminated, and the chemicals were consolidated at INTEC.
- The process used for “virtual” tracking of cylinders and bulk chemicals was streamlined so that the work previously performed by four staff members is now being performed by one.
- A process was established for the purchase of chemicals by R&D operations personnel using a purchase card to provide direct delivery of chemicals in a very short period of time.
- Roles and responsibilities for the management of chemicals were clarified. This resulted in the transfer of ownership of three chemical storage procedures from Chemical Services to the Safety and Health organization.

- **Maintain VPP Star status:** Maintenance includes continued implementation of program requirements, acceptable safety statistics, and an annual self-assessment with a minimum score of 80% in each element.

Status: Complete—Numerous actions were completed in FY 2003 to not only maintain but also enhance the Voluntary Protection Program. The required annual assessment was performed and actions were taken to address identified issues. A minimum of 80% was achieved for each of the five VPP elements. CY 2003 CEST and EST Safety and Health goals and objectives were established, and the CY 2002 VPP Annual Report was developed and submitted to DOE. Specific actions were also taken to maintain management and employee awareness and involvement including the following:

- The Passport to Injury Prevention was launched and employees were encouraged to focus on six areas of personal improvement:
 - The “Actively Caring” section encouraged employees to participate in Worker Applied Safety Program (WASP) observations and DO ITs, and to identify and mitigate an “error likely situations.”
 - The “Personal Protective Equipment (PPE) at Home or Work” section encouraged employees to recognize and wear the proper PPE when doing tasks at home or work such as wearing shoes with aggressive tread on the ice or wearing hearing protection while mowing the grass.
 - The Sprains, Overexertion, and Strains section had employees listing proactive ways to personally minimize or eliminate potential for sprains or strains such as obtaining assistance

from a co-worker while moving something heavy or removing a tripping hazard from the walkway.

- The Stretching and INEEL Lifting sections required daily participation in I-stretch and participating in the INEEL Lifting class.
 - The Eating Well segment required the employees pay attention to the foods they ate and strive for a healthy balanced diet.
 - The President's Challenge segment was to strive for the National Presidential Sports and Fitness Award by making a commitment to fitness through active and regular participation in sports and fitness activities.
- I-Stretch leader training was given to stretch leaders on a quarterly basis throughout the year to improve their education and knowledge and to increase, through sharing in I-Stretch sessions, the knowledge level of the employees of the company about the importance of stretching and flexibility.
 - A retreat was held for the WASP committee to continue to mature the one-on-one worker observation process. The committee developed new WASP observation checklists and new ideas to keep the program fresh. Company level WASP data for tracking and trending was also established on the homepage.
 - A company-wide Safety Recognition Week was conducted in February and a CEST/EST Rejuvenation Day was held in March.

INEEL was asked to conduct several workshops at both the VPPPA Region X Conference in Pasco, Washington and the National VPPPA Conference in Washington DC. Three workshops were conducted:

- "Star Trek the Next Evaluation" focused on how to prepare for your on-site evaluation.
- "TEAM-Together Everybody Achieves More" focused on the important dynamics of effective employee involvement.
- "Strange Bedfellows" focused on how to create a strong partnership between management and the unions.

The workshops were all very well received and INEEL has been asked to do several more next year.

An external review of the VPP process was conducted by Star Consultants in July. The review was a thorough assessment to determine strengths and weaknesses of the process to help focus resources where they are needed to prepare for the Star Re-certification in May 2004. The results of the review are discussed in Section 4.4.2.

In September 2003, INEEL achieved the DOE VPP Star of Excellence Award for the second consecutive year. This is the highest level of award a VPP site can receive. The criteria for the award included achieving reporting injury/illness incident rates and lost work days rates at least 75% below Bureau of Labor Statistics national average for the applicable industry code, meeting annual DOE VPP goals, and demonstrating strong involvement in the Association and in VPP mentoring and outreach.

The result of these and other efforts has been a significant reduction in the number of injuries and illnesses at the INEEL. The safety performance of each VPP unit and each union at the INEEL has improved dramatically.

- **Complete scheduled actions for Safety Basis development:** These actions, which are contained in PLN-489, address upgrading safety basis documents for INEEL nuclear facilities. Completion of these actions is necessary not only for ensuring facility safety but also for achieving compliance with 10 CFR 830 before its effective date in 2003.

Status: Complete—All actions for Safety Basis development scheduled in FY 2003 were completed including the following:

- PLN-489, “Nuclear Facility Basis Work Plan” was revised to meet 10 CFR 830 requirements for annual updates of safety basis documents. NE-ID approval of the revision was obtained
- In accordance with PLN-489, comment resolution and annual review letters for the following documents were submitted to NE-ID:
 - RWMC SAR/TSR-4, IAG-46
 - INTEC Tank Farm SAR/TSR-107, IAG-39
 - INTEC Underground Storage Facility (CPP-749) SAR/TSR-112
 - INTEC Headend Pilot Plant (CPP-640) SAR/TSR-125
 - INTEC Wet Basin Facility (CPP-603) SAR/TSR-116
- All documented safety analyses were submitted to NE-ID by the 10 CFR 830 required date of April 10, 2003.
- **Develop and implement actions to improve Safety Basis implementation:** Although many improvements were made and recognized in previous years, deficiencies in safety basis implementation failures continue to be a primary cause of reportable occurrences and PAAA noncompliances. Additional actions were needed to achieve expected performance.

Status: Complete—All actions to improve Safety Basis implementation scheduled in FY 2003 have been completed. The actions focused on implementation of new or revised safety basis documents. A sitewide implementation procedure and a sitewide implementation schedule were developed. A sitewide system for tracking safety basis requirements was also implemented. Because of the large number of nuclear facilities at INTEC, a safety basis implementation Project Manager was assigned and an INTEC specific implementation procedure was developed. During FY 2003, the FEB assessed the status and effectiveness of safety basis implementation and will perform additional assessment each year. These actions lay the foundation for sustained improvement in safety basis implementation.

- **Develop and implement actions to improve performance in Conduct of Operations:** Actions were taken in FY 2002 to improve performance in conduct of operations and improvement was noted; however, conduct of operations continues to be the primary category of deficiencies identified by assessments.

Status: Complete—The following actions were taken in FY 2003:

- A quarterly newsletter showcasing excellence in operations was developed. The newsletter incorporates a director's message with a performance focus for the quarter. An employee who embodies the principles of excellence in conduct of operations is highlighted in each issue. The newsletter is distributed company-wide.
 - Conduct of Operations Continuing Training was developed and is presented annually. This training emphasizes Conduct of Operations principles and is a refresher, covering recent issues. This year's training was developed in partnership with Echota Technologies and has resulted in a training session with a high level of participation of attendees, with hand-on scenarios, focusing on attention to detail regarding conduct of operations principles.
 - Materials are provided to each associate laboratory director and operations director for "town hall" meetings held with area employees to address current issues and concerns.
 - A computerized simulation program was developed and implemented into the Conduct of Operations training program to create awareness among attendees concerning human performance aspects. This program application can be modified to several different scenarios depending on training needs.
 - Increased emphasis was placed on lockout and tagout procedures and performance. The preparation and installation processes of lockout/tagout have been simplified. An independent lockout/tagout oversight team was implemented at INTEC with the objective of being intimately involved in every lockout/tagout performed at INTEC. The Specific Manufacturing Capability facility involves supervisory and management reviews and oversight for all lockouts/tagouts performed at SMC.
 - Training was completed in the area of recognition of error-likely situations and precursors, based on the Institute of Nuclear Power Operations (INPO) standardized list of error precursors, in order to make operations and support personnel aware of conditions that may require an analysis of task demands. In recognizing these precursors, employees can take actions to promote safe behavior.
 - An enhanced Senior Supervisory Watch (SSW) process was implemented. The SSW provides an independent overview of the work control process, including hazard identification and mitigation, job walkdowns, safety integration, pre-job briefing adequacy, lockout/tagout usage, procedures usage, and job safety performance. The process also ensures that identified deficiencies are addressed and findings are reported to appropriate senior line managers. The SSW process is considered defense-in-depth to ensure that work is performed safely.
- **Develop and implement actions to improve ISMS implementation for Subcontractor Activities:**
This commitment includes completion of actions in the GIOI CAP and additional actions that are necessary to address the issues identified by the FEB.

Status: Partially Complete—In FY 2003, a PIP performed an in-depth analysis of the BBWI subcontracting process. One of the focus areas was improving the consistency of ISMS implementation for subcontractors. Twenty-one process improvement actions were identified. Nineteen actions were completed during FY 2003; the remaining actions which involve procedure revisions will be completed in FY 2004. The following actions were specifically focused on improving ISMS subcontractor activities:

- Development of a procedure, MCP-1186, dedicated to providing guidance and requirements for the acquisition of services. This new procedure contains a requirement for the establishment of Subcontract Formation Groups (SFG) for all on-site work that will be performed in a potentially hazardous environment. The SFG, comprised of personnel representing several disciplines, is responsible for performing the initial hazards assessment, incorporating lessons learned, identifying Subcontractor Requirements Manual applicability, evaluating the safety and health data from offerors and selecting the subcontractor.
- Establishment of a Company-wide Subcontractor Technical Representative (STR) program. This program was developed to bring the same rigor and discipline to on-site work as is used for construction when appropriate. STRs are nominated, provided classroom training and then issued a formal qualification designation. They are responsible for ensuring a consistent, reasonable application of ISMS principles to subcontractors.
- Assignment of responsibility for maintaining the Subcontractor Requirements Manual which is used as the primary method of flowing down ISMS to subcontractors to Supply Chain Management. An individual has been appointed as the primary point of contact to coordinate revisions to the manual and ensure that subcontractors are made aware of changes that may affect how they perform work.
- Correcting the lack of consistency in identifying ISMS requirements by developing a guide for use in the field to determine applicability. Form 540.10A was activated to formalize the process and also provide easily understood direction to organizations requesting on-site services.
- The Request for Proposal form was modified to require that prospective suppliers submit specific safety and health information that not only provides statistical data but also safety and health program elements that are then evaluated for ISMS conformance.

Some of these actions modified the actions taken in response to the GIOI. The GIOI actions and status are further discussed in Section 4.3.

- **Develop and implement actions to improve Conduct of Maintenance performance:** Performance in conduct of maintenance was one of two areas identified by the FEB as needing improvement. This need was supported by other assessment findings. Particular areas needing improvement included work planning and control, maintenance of the facility hazards lists, and fixed instrument calibrations. Improving work planning and control was an FY 2002 performance commitment. Some actions were developed and taken in FY 2002. Others were planned for FY 2003.

Status: Partially Complete—Specific actions to address the planned improvements were developed and are being implemented. Some actions have been completed; others are scheduled for completion during the first quarter of FY 2004. Assessment results and performance indicators demonstrate that performance in work planning and control continuously improved in FY 2003. The following actions were taken:

- An in-depth analysis and update of requirements rolldown for Manual 6 documents was performed to implement the new DOE O 433.1, “Maintenance Management Program for DOE Nuclear Facilities”; ID O 433.A Rev 1, “Maintenance Management Program”; and corrective actions identified during performance of the Integrated Quality Assurance Management System initiative.

- Assessments of conduct of maintenance activities were performed at the different maintenance areas to determine the extent of improvement from prior year corrective actions and the quality of work orders. In addition, FEB reevaluations were performed at INTEC and TRA because of FY 2002 below average grades related to conduct of maintenance. The FEB Conduct of Maintenance CRAD was updated and a separate grading for Conduct of Maintenance was instituted.
- Continuing training focused on development of work order instructions was provided to work planners.
- Calibration program procedures were revised and use of the computerized maintenance management system for tracking calibrations was initiated. Calibration work orders were revised to be in compliance with work control requirements.
- The Physical Assets Maintenance and Operations organization was formed to consolidate the program function with maintenance execution to ensure better integration between maintenance priorities and efficient work processes.
- **Complete planned actions to implement INPO Human Performance Management processes:** Implementation was begun in FY 2001 and continued in FY 2002. Full implementation of the Human Performance Management processes address improvement in many areas, especially performing work safely and feedback and improvement.

Status: Complete—The following actions were completed in FY 2003 to implement Human Performance Management processes:

- The DOE specific “Excellence in Human Performance” course was reviewed and updated with new videos and information from INPO.
- INEEL was invited and participated in co-instructing with INPO at Sandia National Laboratory and Yucca Mountain.
- All foreman and above were trained on Human Performance Error Precursors/Defense in Depth/Zero Accidents through SAM 10.
- Conduct of Operations training continued incorporating HU elements.
- In addition to Human Performance Error Precursors, all employees were trained on Defense in Depth and Zero Accident philosophy.
- Supervisory Skills training which included Human Performance continued.
- Human Performance points of contact were appointed for INEEL and ICP.
- 174 employees/managers completed the Excellence in Human Performance full course.
- Numerous groups used Human Performance information in Staff and Safety meetings, Employee Safety Team Training, and Management overviews.
- Three areas addressed Human Performance aspects of performance trends.

- **Implement the Integrated Quality Assurance Management System Project to improve performance in Quality Assurance Program implementation:** A comprehensive project plan was scheduled for completion during FY 2003.

Status: Complete—Phase II of the project began in January with the focus shifting to work organizations. The Work Breakdown Structure (WBS) for Phase I was mirrored for Phase II with the addition of an element for Activity Based Procedure Review. The project team developed a checklist to assist work organization managers in ensuring that applicable functional area processes and procedures that contained QA requirements were implemented at the work level. The project team provided familiarization training to each operational area work organization in the concept and actions necessary to complete the functional area checklists. Completion of the checklists and identification of gaps were completed at the end of May. The FEB has been providing validation of the implementation of actions resulting from gaps as an action under the Validation element on the WBS.

The new element of the Phase II WBS was a review of the hazard identification and mitigation procedures at the activity level for maintenance, operations and laboratory research to determine if quality assurance elements could be added to those processes. A working group of subject matter experts and process owners reviewed and modified those processes as appropriate. All changes to these processes were implemented in July with some work organization actions continuing through December.

The final WBS element was Employee Involvement/Communications. In June/July managers were trained to work with their employees to complete a Quality Wheel, similar to the ISMS Wheel, to identify and demonstrate individual responsibility for quality tailored to their work.

All project elements were completed in September, some implementation at the work activity level will continue through December. All project activities have been documented in an IQAMS Implementation Plan. The project office closed in September with the completion of all WBS elements. The FEB will continue to evaluate quality assurance implementation as a special focus area during future assessments. The implementation of IQAMS resulted in the quality assurance program being an integrated management system of ISMS.

- **Complete planned actions to improve the efficiency and effectiveness of Assessments:** The action plan developed and initiated in FY 2002 will be completed in FY 2003.

Status: Partially Complete—Improvements in the Integrated Assessment Program were discussed in Section 3.1.8. One action remains open: development of functional area Lines of Inquiry to be used when performing assessments.

- **Complete planned actions to improve performance in Issues Management:** Actions initiated in FY 2002 to achieve these improvements will be completed in FY 2003.

Status: Partially Complete—Improvements in the Issues Management Program were discussed in Section 3.1.9. Two remaining actions have been rescheduled for completion in FY 2004.

- **Complete planned actions to improve the Performance Measurement Program:** The actions initiated in FY 2002 to achieve needed improvements will be completed in FY 2003. These actions are identified in PLN-693.

Status: Complete—Improvements in the Performance Measurement and Analysis Program were discussed in Section 3.1.10. These actions completed implementation of PLN-693.

- **Complete planned actions for implementation of SBMS:** A detailed project execution plan was developed in FY 2002. Implementation was delayed pending determination of the least impactful, most cost-effective approach for further implementation. Presentation to senior management of the recommended approach is planned for the second quarter of FY 2003. Upon approval of the approach, the SBMS project execution plan will be finalized and scheduled.

Status: Complete—Because of the restructuring/reorganization and the decision to rebid the contract, the plans for SBMS implementation were modified to address development of Management System Descriptions only. These documents have been developed.

4.2 Performance Measures and Indicators

Twenty-six performance measures were identified for FY 2003. The status of these measures was routinely reported in the Site Performance Measurement Report, which is issued monthly, and the ESH&QA Performance Report and Analysis which is issued quarterly. Table 5 in the Appendix shows the end of the year status of the FY 2003 Safety Performance Measures.

The analysis of the ESH&QA metrics in this section indicates that the overall performance is good and improving in most areas. The tables below show all metrics and indicate whether performance meets objectives or is good or improved , is unchanged , or indeterminate , or does not meet objectives or is poor or declining from the same period in the previous year . The basis for some metrics has evolved such that the comparison is not valid, or the data for previous periods is not available.

NOTE: Data in the tables below is FY or CYTD not only for the current year, but for previous years presented here for comparison. The comparison in the status line is to the previous year only.

4.2.1 Environmental

Environmental compliance continues to improve. During FY 2003, no reportable releases occurred and no environmental fines were assessed. One warning letter was received from the State of Idaho containing four alleged violations that were classified as adverse deficiencies. The Environmental Compliance Violations Index is 0.0025 which is well below the goal of 0.04. All FY 2003 enforceable milestones, Site Treatment Plan milestones, and Settlement Agreement milestones were completed on or ahead of schedule.

Previous reports had provided data which indicated that waste reduction goals would not be achieved. Resulting investigations showed that several material profiles were incorrectly categorized as routine waste, resulting in the higher values. Subsequently, material profiles were corrected and accurately categorized for wastes generated in FY 2003. The corrected data show that FY 2003 prorated reduction goals for hazardous, radioactive, and mixed wastes were achieved. It is anticipated that waste generation values for prior years will be updated to reflect the newly categorized profiles in the first quarter FY 2004 report. Goals for sanitary waste recycling and SARA 313 chemical usage are being met and exceeded, but no update was available for this report.

Two of three energy efficiency goals are not being met. The energy conservation goal was increased from 1% to 2% year-over-year, and the distinction between facility types was eliminated. BBWI did meet the combined annual energy reduction goal. The separate metrics will be combined in FY 2004. Goals for reduction in petroleum consumption and for alternative fuel usage are not being met. Actions are being taken to increase alternative fuel usage, but the FY 2003 goal was not achieved.

Metrics		Time	2001	2002	2003	Status
Environmental Compliance						
E.1.1	Reportable Releases to the Environment	FY	6	1	0	+
E.1.2	Externally Identified Environmental Deficiencies (incl. alleged in ORPs)	FY	20	21	4	+
E.1.3	Environmental Compliance Violations Index	FY	0.07	0.04	0.0025	+
E.1.4	Enforceable Milestones	FY	Completed	Completed	Completed	+
E.1.5	Site Treatment Plan Milestones	FY	Completed	Completed	Completed	+
E.1.6	Settlement Agreement Milestones	CYTD	Completed	Completed	Completed	+
Pollution Prevention						
E.2.1	Hazardous Waste Generation (metric tons)	FY	22.5	18.2	8.7	+
E.2.2	Radioactive Low-Level Waste Generation (cubic meters)	FY	1949	2430	369	+
E.2.3	Mixed Low-Level Waste Generation (cubic meters)	FY	87.5	55.9	21.5	+
E.2.4*	Sanitary Waste Recycling	FY	Goal Exceeded	Goal Exceeded	Goal Exceeded	+
E.2.5*	SARA 313 Chemical Usage (lbs.)	CY	67,452	47,214	N/A	+
Energy Efficiency						
E.3.1	Energy Consumption - Idaho Falls Facilities	FY	Goal Exceeded	Goal Exceeded	Goal Not Met	-
E.3.2	Energy Consumption - Site Facilities	FY	Goal Exceeded	Goal Exceeded	Goal Exceeded	+
E.3.3	Petroleum Consumption	FY	Goal Not Met	Goal Exceeded	Goal Not Met	-
E.3.4	Alternative Fuel Usage	FY	Goal Not Met	Goal Not Met	Goal Not Met	-

* These metrics were not updated in this edition of the report.

4.2.2 Safety and Health

Safety and Health performance continues to be very good. Significant reductions in total recordable, first aid, and total case rates have been achieved and are continuing. The Day Away case rate is, however, higher this year than last year. The number of recordable cases related to work control failures in FY 2003 decreased approximately 50% from FY 2002. The Radiological Performance Index shows continued decline in radiological incidents. The CYTD 2003 radiological performance index is 36% lower than FY 2002's index, which was 56% lower than FY 2001's index. (An index value <1 shows improvement from the previous year.) With the exception of the day away case rate, the safety and health performance represented by these measures is the best recorded to date.

Metrics		Time	2001	2002	2003	Status
Occupational Safety						
S.1.1	Total Recordable Case Rate	CYTD	2.58	1.61	1.22	+
S.1.2	Work Control Recordable Cases	FY	Not Available	59	28	+
S.1.3	Day Away Case Rate	CYTD	Not Available	0.30	0.38	-
S.1.4	First Aid Case Rate	CYTD	3.32	3.45	3.38	+
S.1.5	Total Case Incident Rate	CYTD	5.90	5.06	4.60	+
Radiological Safety						
S.2.1	Radiological Performance Index	CYTD	0.61	0.43	0.64	+

4.2.3 Self-Assessment

As a result of improvements to the Integrated Assessment Program, performance also improved. The number of planned and scheduled assessments decreased from 2,232 in FY 2002 to 1,875 in FY 2003 while the number of issues identified by assessments increased from 1,014 in FY 2002 to 1,450 in FY 2003. The proportion of issues identified by assessments increased from 51% in FY 2002 to 71% in FY 2003. The proportion of externally identified issues decreased from 25% in FY 2002 to 11% in FY 2003.

Metrics		Time	2001	2002	2003	Status
A.1.1	Completion of Scheduled Assessments	FY	Not Comparable	Not Comparable	87%	?
A.1.2	Issues Identified by Assessments (number and [%])	FY	Not Comparable	1167 [51%]	1450 [71%]	+
A.1.3	Externally Identified Issues	FY	27%	25%	11%	+

4.2.4 Issues

An overall performance objective is to reduce the number of issues of all types that occur or exist. To accomplish this objective, programs have been developed and implemented to ensure that issues are identified and are corrected to prevent recurrence. The overall number of identified issues in the 11 categories listed in the table below declined significantly. However, the number of near miss occurrences and work control occurrences increased during FY 2003. This performance has been identified by BBWI management as unacceptable. As a result, numerous corrective and preventive actions have been developed and are being implemented and recent performance has improved.

Although the number of PAAA noncompliances has increased significantly during FY 2003 when compared to FY 2002, this increase is attributed to better categorization of these issues. The better categorization was achieved after additional training of PAAA screeners to address categorization problems. The overall number of deficiencies, of which PAAA noncompliances is a subset, has declined.

The number of reportable occurrences and the number of safety concerns during FY 2003 are approximately the same as during FY 2002, but less than FY 2001. The numbers of issues in all other categories not discussed above declined during FY 2003 from FY 2002 levels, which, except for safety basis violations, declined from FY 2001 levels. The significant decline in nonconformances is attributable to completion of the 3100 cubic meter project, which generated 51% of FY 2002 nonconformances.

Metrics		Time	2001	2002	2003	Status
I.1.1	Reportable Occurrences	FY	143	103	108	≈
I.1.2	Near Miss Occurrences	FY	28	13	19	-
I.1.3	Safety Basis Violations	FY	8	14	5	+
I.1.4	Work Control Occurrences	FY	N/A	59	71	-
I.1.5	PAAA Noncompliances	FY	483	401	540	?
I.1.6	PAAA Reportable Noncompliances (with % self-identified)	FY	27 (67%)	22 (72%)	17 (88%)	+
I.1.7	Significant Deficiencies	FY	111	63	32	+
I.1.8	Adverse Deficiencies	FY	1606	1231	1181	+
I.1.9	Nonconformances	FY	Not Comparable	875	426	+
I.1.10	Safety Concerns	FY	847	310	319	≈
I.1.11	Other Issues	FY	815	695	621	+

4.2.5 Issues Management

Overall performance in issues management continues to improve. Only three metrics show declining or unacceptable performance. The number of late categorizations of occurrences has increased during FY 2003 from FY 2002. NE-ID and DOE-HQ has judged performance in both years as unacceptable. The number of late closures of PAAA reportable noncompliance actions has increased during FY 2003 from FY 2002. Management ensuring that actions taken matched those committed caused most of these late closures. Data for late nonconformance closures from previous years is not available, but the number for FY 2003 is unacceptable. Although lessons learned usage and lessons learned submittals have both declined, it is not believed that these declines indicate performance problems.

Metrics	Time	2001	2002	2003	Status
IM.1.1 Issues Screening (# overdue)	FY	Not Reported	356 (15%)	160 (7%)	+
Occurrences					
IM.2.1 Occurrence Categorization (# late)	FY	Not Available	17	20	-
IM.2.2 Occurrence CAP Development (# late)	FY	N/A	11	7	+
IM.2.3 Occurrence Corrective Action Completion (# late)	FY	Not Available	30	20	+
PAAA Reportable Noncompliances					
IM.3.1 PAAA Reportable Noncompliance Processing (# of lates, any process)	FY	N/A	14	12	+
IM.3.2 PAAA Reportable Noncompliance Closure (# late, # extended)	FY	7, 32	4, 23	9, 27	-
Significant Deficiencies					
IM.4.1 Significant Deficiency CAP Development (# late)	FY	Not Available	34	13	+
IM.4.2 Significant Deficiency Closure (# late)	FY	Not Available	17	7	+
Adverse Deficiencies					
IM.5.1 Adverse Deficiency CAP Development (# late)	FY	Not Available	468 (32%)	290 (24%)	+
IM.5.2 Adverse Deficiency Closure (# late)	FY	Not Available	187	140	+
Nonconformances					
IM.6.1 Nonconformance Dispositioning (# late)	FY	Not Available	192	83	+
IM.6.2 Nonconformance Closure (# late)	FY	Not Available	Not Available	111	-
Safety Concerns					
IM.7.1 Safety Concerns Average Age average age of closed (days) average age of open (days)	FY	Not Available	Not Available	132 227	?
Lessons Learned					
IM.8.1 Lessons Learned Usage	FY	34,756	51,396	40,362	?
IM.8.2 Lessons Learned Submittals	FY	279	358	258	?

4.2.6 Maintenance

The maintenance organization uses a comprehensive set of metrics to measure and manage performance. The three below have overall interest. Two of the three were modified for FY 2003 so that the data is not comparable to previous years. Maintenance backlog has remained relatively steady through FY 2003. Preventive maintenance completion rate has improved from FY 2002. The mean time to repair during FY 2003 for priority 3 and 4 work orders is within acceptable ranges, but the mean time for priority 2 work orders exceeds the time prescribed in STD-101.

Metrics	Time	2001	2002	2003	Status
M.1.1 Backlog of Maintenance and Repair (Open Work Orders)	FY	Not Comparable	Not Comparable	496	?
M.1.2 Preventive Maintenance Completion Rate	FY	Not Comparable	81%	86%	+
M.1.3 Work Order Mean Time To Repair	FY	Not Comparable	Not Comparable		
Priority 2 (avg. days to complete)				8	-
Priority 3 (avg. days to complete)				36	+
Priority 4 (avg. days to complete)				57	+

4.3 Resolution of Previous ISMS Issues

To ensure that issues identified in previous evaluations had been appropriately resolved, the status of those issues was reviewed in this evaluation. The issues reviewed included those resulting from Phase I and Phase II ISMS verifications, the FY 2001 Focused Safety Management Evaluation (FSME), the NE-ID CO₂ Corrective Actions Validation, the Grout Injection Operator Injury (GIOI), and the FY 2001 and FY 2002 ISMS annual evaluations.

4.3.1 ISMS Verification Issues

The FY 2002 ISMS annual evaluation identified one open issue from the ISMS Phase II Verification. The issue concerned establishing a sitewide process for ensuring ISMS is maintained in site areas when work and budget is significantly reduced. The corrective actions for this issue were completed in FY 2003. All issues from the Phase I and Phase II ISMS verifications have been resolved.

4.3.2 FSME Issues

The FSME performed in FY 2001 identified four Safety Issues as well as conditions that did not allow closure of three Legacy Issues and four CO₂ Accident Judgments of Need (JONs). Seventy-one corrective actions were identified to address these issues; 69 were completed in FY 2001 and FY 2002. The two remaining actions were completed in FY 2003. Completion of all corrective actions has been verified.

4.3.3 NE-ID CO₂ Accident Validation Concerns

The NE-ID independent validation of the effectiveness of the corrective actions for the CO₂ Accident was performed in September 2000. The validation focused on the two root causes identified by the Accident Investigation Board and the associated corrective actions. The validation identified nine concerns that were related to the specific corrective actions and concluded that one root cause had been adequately addressed but the other root cause, management acceptance of unstructured work controls, had not been adequately addressed in that near misses caused by unstructured work controls were recurring. A corrective action plan was developed to address the nine concerns identified by the validation. All of the 27 corrective actions were completed and verified during FY 2001 and FY 2002. During FY 2003, a joint

BBWI/NE-ID validation of the effectiveness of the actions was performed. This validation is discussed in Section 4.3.5. Based on the results of the validation, the CO₂ Corrective Action Plan was closed by BBWI.

4.3.4 Grout Injection Operator Injury Issues

The DOE Type B investigation of the Grout Injection Operator Injury, that occurred in October 2001, identified 15 JONs for addressing weaknesses in the implementation of ISMS for subcontractor work activities. Seventy BBWI and NE-ID corrective actions were developed to address these JONs; 64 of the actions were completed in FY 2001 and FY 2002. The six remaining actions were completed and verified in FY 2003.

During FY 2003, a joint BBWI/NE-ID validation of the effectiveness of the corrective actions was performed. This validation is discussed in Section 4.3.5. The validation concluded that the actions taken were effective. However, several events occurred during FY 2003 that revealed weaknesses in the control of pressurized systems. None of the events involved subcontractors, but since the GIOI involved pressurized systems, two of the most important corrective actions for the overpressurization events were added to the GIOI corrective action plan. In addition, further inadequacies in subcontracting processes were identified. As a result, a program improvement team developed actions which modified some of the original GIOI corrective actions. Because of these additions and modifications to the corrective action plan, the GIOI could not be closed by the joint validation. A follow-up validation of the effectiveness of the additional and modified corrective actions will be performed during FY 2004.

4.3.5 GIOI/CO₂ Accident Corrective Actions Validation

During FY 2003, a joint BBWI/NE-ID team performed an independent validation of the effectiveness of corrective actions for the GIOI and the CO₂ Accident. The validation was conducted in accordance with the plan approved by senior NE-ID and BBWI management.

The validation plan included assessments at each site area and at the company level. The site area assessments were performed using a Criteria Review and Approach Document (CRAD) that was developed by a joint BBWI/NE-ID team. The CRAD contained five performance objectives (A–E) designed to determine the effectiveness of the GIOI corrective actions, one performance objective (F) designed to determine effectiveness of the corrective actions addressing the nine concerns identified by the NE-ID CO₂ Accident Validation, and one performance objective (G) designed to determine the effectiveness of corrective actions for the CO₂ Accident Root Cause #2, management acceptance of unstructured work controls.

The criteria for Performance Objective G required review of site area management response to performance demonstrated by five measures: near miss occurrences, safety basis violation occurrences, reportable releases, work control occurrences, and work control recordable cases. These five measures reflect problems that can result from unstructured work controls. For the company level assessment, the joint validation reviewed senior management response to adverse performance indicated by these measures at the company level.

Overall, the GIOI/CO₂ joint validation was successful. Each site area received a performance grade of average or above on the CRAD performance objectives and the company received a performance grade of average on response to unstructured work control events. In addition, each site area received a grade of average or above for each of four subsets of the GIOI CRAD: subcontracting, management self-assessments, NE-ID CO₂ Accident Validation concerns, and management response to unstructured

work controls. This grading of CRAD subsets was not specified by the validation criteria but was provided to ensure that unacceptable performance in some elements was not masked by an overall grade.

The validation therefore concluded that the corrective actions for the GIOI and the CO₂ Accident were effective and should lead to closure of the associated corrective action plans. However, as noted in Section 4.3.4 the GIOI corrective action plan cannot yet be closed because it was modified during the validation to include additional subcontracting improvements and two comprehensive actions for pressurized systems safety, which addressed events that occurred during FY 2003. When the effectiveness of these actions is validated by a subsequent review, the corrective action plan can be closed.

BBWI closed the CO₂ Accident corrective action plan by this validation. The nine NE-ID CO₂ Validation concerns have been addressed and both BBWI and NE-ID management clearly demonstrated that they do not accept unstructured work controls. Some performance in FY 2003 relating to work control failures showed significant improvement while some performance was judged by senior management as unacceptable. This performance raises questions about the effectiveness of corrective actions in preventing recurrence of work control failures. However, a number of actions have been taken and others are planned to improve performance in work control and the effectiveness of corrective actions. These continuing actions are essential elements of continuous performance improvement efforts and do not prevent closure of the CO₂ Accident corrective action plan.

4.3.6 FY 2001 ISMS Annual Evaluation Issues

The FY 2001 ISMS Annual Evaluation identified 40 issues, 14 areas for improvement, 12 areas for focused training, and 24 performance commitments. During FY 2002, 36 of the issues, 12 of the areas for improvement, 10 of the areas for focused training, and 15 of the performance commitments were completed/closed. Eight of the performance commitments were carried over into FY 2003 performance commitments. During FY 2003, all of the remaining FY 2001 issues were closed except two: identifying ISMS responsibilities in Site Steering Committee Charters and identification, training, and qualification of FSMs and SMEs. These two issues have been renumbered in this evaluation and will be tracked to closure as FY 2003 issues.

4.3.7 FY 2002 ISMS Annual Evaluation Issues

The FY 2002 evaluation identified 42 issues, eight areas for improvement, 12 areas for focused training, and 18 performance commitments. Four of the 42 issues were combined with areas for improvement. All eight of the areas for improvement and nine of the areas for focused training were addressed in performance commitments. The status of the issues, areas for improvement, and areas for focused training is shown in Tables 6, 7, and 8 in the Appendix.

Thirty-two of the 38 issues have been closed. Eighty-five of the 94 corrective actions were completed. The status of these issues is discussed in Section 3.1. Focused training has been completed for two of the three areas not combined with performance commitments. Training for the other area, R2A2s for FSMs and SMEs, has been identified in Section 6.4 as an area for focused training in FY 2004. Thirteen of the 18 performance commitments were completed and five were partially completed. The status of the performance commitments is discussed in Section 4.1.

4.4 Assessment Findings

Numerous internal and external assessments of INEEL programs and activities were performed in FY 2003. This section provides a discussion and analysis of the results of those assessments. Internal assessments include those planned and scheduled on an annual basis as well as unplanned observations

that are routinely performed. Results of FEB assessments, Independent Oversight, and the VPP annual evaluations are discussed separately. External assessments include those significant assessments that are subcontracted (EMS and VPP), corporate reviews (LO/TO), routine and special assessments performed by NE-ID, and assessments performed by DOE-HQ.

The table below shows the ICARE categories of issues and the percentage of issues identified by assessments in each category.

Category	Planned Assessments 1,450	Unplanned Observations 379	NE-ID Assessments 218	PAAA Noncompliances 540	Significant Deficiencies 31
Business Management	2%	2%	2%	1%	4%
Environmental	2%	1%	2%	1%	6%
Maintenance	3%	3%	8%	3%	6%
Operational	33%	33%	41%	39%	27%
Quality Assurance	28%	26%	25%	35%	25%
Radiological Controls	7%	9%	5%	11%	12%
Safety and Health	25%	26%	17%	10%	20%

The following categories and subcategories were those most frequently identified by assessment findings:

- Operational
 - General conduct of operations
 - Control of equipment and system status
 - Operations procedures
 - Work control
- Quality Assurance
 - Work processes
 - Personnel training
 - Document management
- Safety and Health
 - Industrial safety
 - Fire protection.

4.4.1 Internal Assessments

- **Planned Assessments**

During FY 2003, 1,875 assessments were planned, scheduled in the Integrated Assessment database, and performed. These assessments identified 1,450 issues which were entered into ICARE. The issues identified in FY 2003 were categorized into seven areas for analysis. The percentage of issues in each category and the most frequently identified subcategories are shown in the table below.

Category	Proportion	Most Frequent Subcategories
Business Management	2%	Supply Chain Management Information Management
Environmental	2%	Asbestos
Maintenance	3%	Documentation of Equipment History Inadequate/Defective Materials
Operations	33%	General Conduct of Operations Operation Procedures
Quality	28%	Work processes Personnel Training
Radiological Controls	7%	Contamination Monitoring and Control Radiation Work Planning and Control
Safety and Health	25%	Industrial Safety Fire Protection

- **Unplanned Observations**

During FY 2003, 379 issues entered into ICARE were identified by unplanned observations. These issues were categorized into seven areas for analysis. The table below shows the proportion of issues in each category and the most frequently identified subcategories.

Category	Proportion	Most Frequent Subcategories
Business Management	2%	Supply Chain Management Information Management
Environmental	1%	Clean Air Act
Maintenance	3%	Equipment Failure Documentation of Equipment History
Operations	33%	Control of Equipment and System Status General Conducts of Operations
Quality	26%	Work Processes Document Management
Radiological Controls	9%	Contamination Monitoring and Control Radiological Work Planning and Control
Safety and Health	26%	Industrial Safety Fire Protection

- **Facility Evaluation Board Assessments**

The FEB is used to evaluate the effectiveness of the Integrated Safety Management System infrastructure and its implementation at the facility and activity levels. Criteria are developed for use as guides in each evaluation area to ensure the ISMS five core functions and eight guiding principles are adequately evaluated. During FY 2003, FEB assessments were performed at TRA, CFA/IFF, and INTEC. FEB grades were assigned for TAN and WROC based on the results of BBWI Independent Oversight assessments and an inspection performed by the DOE Office of Independent Oversight and Performance Assessment. The grades from these evaluations are shown in Table 9 in the Appendix.

A comparison between FY 2002 and FY 2003 results shows improvement in the overall grade for TRA, no change for two site areas (INTEC and CFA/IFF), and a decline in grades for two site areas (TAN and WROC). The most significant change was an improvement from Below Average to Above Average overall grade for TRA. This performance change at TRA is attributed to ISMS process improvements related to work control and quality system improvements. The TAN and WROC ISMS grades dropped from Above Average to Average due to observed performance degradation in the Maintenance program which was graded below average for each area.

The FEB identified pockets of excellence where the programs and/or processes were found to have strong foundations and were well implemented in FY 2003:

- At CFA/IFF, overall improvement was noted in maintenance performance, and dissemination of Lessons Learned was found to be excellent.
- At TRA, improvements were found across multiple areas. INPO error precursor evaluations were widely applied prior to performing work, which was found to be noteworthy.

The FEB identified three areas where program implementation needed improvement:

- Conduct of Maintenance—This area was also identified by the FEB as needing improvement in FY 2001 and in FY 2002. Although issues were not as prevalent in FY 2003, a need for continued improvement was identified.
- Feedback and Improvement—Weaknesses in performing Core Function 5 activities were found across the site, including a lack of management involvement in identifying and correcting issues and in encouraging a culture of continuous improvement. Problems were found in the areas of performing assessments, correcting issues, and managing the feedback and improvement mechanisms.
- Unreviewed Safety Question Program—Several deficiencies were noted associated with incomplete documentation of USQs and inconsistent reviews.

- **Independent Oversight Assessments**

In FY 2003, the Independent Oversight (IO) assessment and analysis effort was focused on institutional level ISMS, functional programs, quality of management assessments, and special reviews requested by management. IO participated in all three FEB evaluations and performed FEB follow-up evaluations at TRA and INTEC where ISMS performance had been rated below average. IO also performed multi-disciplinary assessments at TAN and WROC which were used in the FEB grading for these areas. The IO assessment findings indicate two overall areas of concern:

- Failure to follow procedures—Most of the IO findings resulted from failures to follow procedures. Although some procedures were determined to be deficient, most appeared to be adequate. Procedure adherence is a continuing problem.
- Inadequate corrective action management—The IO findings indicate this is a sitewide problem. Deficiencies were identified in identification of appropriate corrective actions, implementation of identified actions, closure of actions, and verification of closure.

During FY 2003 IO performed five independent evaluations of site area management assessments to determine the thoroughness and quality of the self-assessments being performed. The overall quality of the management assessments was acceptable and improved from previous years. Several good practices were identified. No deficiencies were identified by these evaluations, but several recommendations for improvement were made.

- **Annual VPP Program Evaluation**

The DOE Voluntary Protection Program, Part I: Program Elements (DOE/EH-0433) requires the INEEL to conduct an annual safety and health program evaluation that assesses the effectiveness of the VPP program elements and sub-elements. The CY-2003 evaluation was performed in November 2003. The evaluation determined that the safety systems/processes are generally being maintained at the “DOE-VPP Star” level. The VPP Process is functioning at a high level as evidenced by the fact that recordable injuries are 75% below Bureau of Labor Statistics of like industry and INEEL received the “Star of Excellence Award” for the second year in a row. Each of the five major program elements scores were above 80%; however, some concerns were identified that need to be addressed for continuous improvement:

- Annual safety goals and objectives need to be more measurable and trackable. Employees need to know what they can do on a daily basis to help to reach the goals.
- Management needs to increase their visibility in the workplace, leading safety by example wherever possible. They also need to re-emphasize and communicate the expectation for employee involvement and participation in the safety and health program.
- Safety expectations and involvement of subcontractor employees needs to be established.
- Involvement of craft personnel is waning in several Units.
- Causal analysis needs to focus on system failure and human performance rather than employee error.
- Continuous improvement versus “being at a plateau” should be reviewed by each team. Units need to develop corrective action plans from Unit trending data and progress on goals and objectives.

Action plans are being developed to resolve these concerns at the company level and the Unit level.

- **Quality of Work Orders Assessment**

This assessment was similar to assessments of work order quality performed by NE-ID in FY 2001 and by a joint BBWI/NE-ID team in FY 2002. Additional assessment criteria were added to provide a more comprehensive evaluation.

The assessment identified that work order quality was best at SMC and CFA, had improved at RWMC, and needed improvement at TRA and INTEC and in Security and Life Safety Systems. Significant improvement was noted in screening and identification of types of maintenance and in development of minor maintenance requests. The need for improvement in expedited maintenance and attention to detail was identified. Although numerous deficiencies in work orders were identified, the overall quality of work orders was judged acceptable.

4.4.2 Subcontract Assessments

- **Environmental Management System Surveillances**

During FY 2003, two surveillances of the EMS were performed by NSF International Strategic Registrations, LTD in accordance with the conditions for maintaining ISO 14001 certification. No nonconformances were identified by the surveillances. Numerous positive comments were documented in the following areas:

- Completion of environmental cleanup efforts,
- Pollution prevention activities,
- Improvement in assessments and reviews, and
- Tracking of project activities, issues, and performance measures.

The surveillances concluded that “The INEEL ISO 14001 Environmental Management System continues to show signs of strength in addressing environmental aspects with exceptional uptake by employees at all levels.”

- **VPP Readiness Assessment**

STAR Consultants, Inc. assessed the INEEL VPP program in preparation for the May 2004 recertification. The assessment identified strengths, areas needing improvement, and opportunities for improvement.

The following strengths were identified:

- Consistency in the charters, inspections, incident analysis, and trend analysis of the VPP Unit Employee Safety Teams (ESTs)
- Culture, knowledge, and attitudes of workers
- Use of Personnel Action Plans in the performance appraisal process
- I Stretch, awareness activities, safety shares, and mentoring concepts
- Safety committee maturity path survey
- Progress towards minimizing slips, trips, and falls.

The following major vulnerabilities were identified where improvement is needed to qualify for VPP recertification:

- Goals and Objectives were not adequately developed, tracked, evaluated, or reported. The objectives were seldom measurable. Activities were measured rather than accomplishments. Tracking, evaluation, and communication of the status of goals and objectives was, in general, not performed.
- There was a perception among workers that upper management is only involved to a limited extent. Reviews of involvement and participation of upper management, especially line management, confirmed this perception.
- Causal analyses were inadequate. Root causes determination was focused on employee error. Management attitude and emphasis was on employee error rather than system failures.

The following minor vulnerabilities were identified as opportunities for improvement:

- Identification and analysis of near misses
- Developing corrective action plans from trend analyses
- Assignment of personnel to ESTs
- Documentation of EST activities in meeting minutes
- Aligning CEST efforts and activities with the CEST charter.

4.4.3 Corporate Assessments

Lockout/Tagout Program Assessment

In response to internal concerns regarding specific elements of the INEEL LO/TO program, the Bechtel Corporate Office was asked to conduct an assessment of the program. The Corporate assessment team concluded that the LO/TO program had been effective in preventing personnel injury but that the program could be improved to prevent recurring LO/TO events.

The assessment identified the following concerns:

- LO/TO procedures are convoluted and complex. The burden of compliance with these procedures is further complicated by the belief that violations of any aspect of these procedures can/will result in work package stoppage, occurrence reporting, critique session(s), and subsequent disciplinary actions (i.e., zero tolerance). At the INEEL, virtually the same LO/TO procedures are used on a nuclear reactor as on a simple water heater system.
- The paperwork required by the procedure is confusing. Personnel involved suggested that persons performing this work without ever having done so before (or infrequently) could easily be confused by the procedures and the associated paper work.
- An extremely large number of personnel receive the LO/TO training while only a relatively small percentage of these employees will be involved in the LO/TO operation on a regular basis. In some cases “qualified” personnel with literally no practical experience may be tasked to participate in a LO/TO operation.

- The analysis process used in occurrence reports is often incomplete. While the ORPS process identifies causal factors in three categories (direct contributory, root), the subsequent analysis does not always fully explore all these factors. The INEEL Causal Factor Analysis process very often ends with the determination of “personnel error” and seldom explores the factors that may have caused the personnel to make these errors.

To address the concerns, the corporate assessor recommended simplifying the procedure and associated paperwork, reducing the number of personnel who are considered training and qualified to perform LO/TOs, and improving the causal analysis process to identify the reasons for “personnel error.”

4.4.4 NE-ID Assessments

NE-ID performs many surveillances and assessments of INEEL activities as part of its oversight responsibilities. These surveillances and assessments provide feedback and identify areas for improvement. Findings from surveillances and assessments are entered into ICARE in accordance with NE-ID instructions and corrective actions are developed and implemented. NE-ID routinely reviews the effectiveness of these corrective actions.

Most of the routine surveillances are performed by NE-ID Site Area Facility Representatives. The results are submitted as Surveillance Reports to Site Area management. Most surveillances are focused on compliance to written processes. In addition to the facility surveillances, programmatic and functional area assessments are performed and documented in written reports and submitted to senior INEEL management.

During FY 2003, NE-ID identified 216 issues by surveillances and assessments; 205 of the issues have been closed. The types of issues identified cover all aspects of INEEL activities. Most of the issues are related to a lack of compliance with procedural requirements. Of 216 issues, two were significant deficiencies, 154 were adverse deficiencies, eight were safety concerns, and 52 were other issues. Twenty-four had site-wide applicability.

The issues were categorized for further analysis. The categories, the proportion in each category, and the most frequently identified subcategories are shown in the table below.

Category	Count	Most Frequent Subcategories
Business Management	2%	Information Management
Environmental	2%	RCRA
Maintenance	8%	Inadequate / Defective Design Lack of Equipment PM Maintenance
Operations	41%	Conduct of Operations Operations Procedures Control of Equipment and System Status Lockouts and Tagouts
Quality	25%	Issues Management Document Management
Safety and Health	17%	Emergency Preparedness Industrial Safety
Radiological Control	5%	Contamination Monitoring and Control

NE-ID categorizes its most significant findings as “major findings.” During FY 2003, NE-ID identified seven major findings by the following surveillances and assessments:

- **Radiography at INEEL**

NE-ID performed a surveillance to determine contractor compliance with regulations governing industrial radiography and radiation safety as promulgated in 10 CFR 34. The surveillance was performed by reviewing records of source inventories, leak tests, and self-assessments.

The surveillance concluded that periodic leak tests, source inventories, and radiographer training are being conducted as required. However, one Major Finding was identified: INEEL did not have the required program for periodic observation of radiographers and radiographer’s assistants.

- **Screening of ICARE Issues**

NE-ID performed a surveillance to determine if the requirements for screening new issues as set forth in MCP-598, “Corrective Action System,” were being met. To conduct the surveillance, 447 issues which had had been identified as “Other Issues” in ICARE were examined.

The surveillance concluded with one Major Finding: 67 (or 15%) of the Other Issues examined were apparently miscategorized. Rather than being “Other Issues,” NE-ID concluded that these issues should have been categorized as “Deficiencies” according to MCP-598, since the issues appeared to deviate from written requirements.

- **RWMC Waste Stack Collapse**

NE-ID assessed the Waste Stack Collapse incident that occurred at RWMC on June 17, 2003. The purpose of the assessment was to determine the significance of the event. To conduct the assessment, NE-ID interviewed company personnel involved with the event and reviewed BBWI’s procedures relating to material handling and storage.

The assessment resulted in three Major Findings: (1) the contractor failed to follow the OSHA material handling requirements; (2) the contractor’s self-assessment program was less than adequate in that it did not identify the unsafe conditions; and (3) the contractor’s Lessons Learned Program failed as the lessons learned and corrective actions from a similar event that occurred in May 2002 were not implemented.

- **Reactor Programs Self-Assessment Program**

NE-ID performed a surveillance to verify that TRA has a robust, rigorous, and credible contractor ES&H self-assessment program linked to the DOE Safety Management System. TRA’s program was compared to a set of criteria developed from MCP-8, “Self-Assessment Process for Continuous Improvement,” and MCP-9172, “Integrated Assessment Annual Planning, Scheduling, and Reviewing.”

The surveillance concluded that a robust, rigorous, and credible self-assessment was lacking at TRA. A Major Finding was issued stating that LST-202 (a list of required assessments) is not an active document; without an approved LST-202, the requirements of MCP-8 and MCP-9172 could not be met. NE-ID identified the issue as a repeat finding with site-wide implications. Furthermore, the surveillance observed that there was a lack of evidence for planning assessments, e.g., developing a plan or outline and using a per-determined checklist. Nonetheless, the surveillance concluded that the

essential pieces for the administration of a self-assessment program, with the exception of LST-202, were in place.

- **General Surveillance of TRA**

In the July 2003 General Surveillance of TRA, NE-ID stated that operations generally were conducted in a satisfactory manner. However, the DOE Facility Representative (FR) was denied access to the FEB daily team meetings. It was determined that this was a site wide issue and was written as a Major Finding. The report stated that the issue was resolved with discussion between NE-ID and BBWI management. As a result the FR will have access to all FEB meetings in the future.

4.4.5 DOE-HQ Assessments

QA Inspection

The DOE Office of Independent Oversight and Performance Assurance (OA) performed an inspection of the ES&H and Emergency Management programs at INEEL during August and September of 2003. The ES&H portion of the inspection evaluated four related aspects of the ISM program:

- Implementation of selected ISM guiding principles, including efforts to address the new 10 CFR 830, Subpart B, requirements for design safety reviews for nuclear facilities and implementation of suspect/counterfeit items requirements,
- Feedback and continuous improvement systems,
- Implementation of ISM core functions for various work activities, and
- Functionality of selected essential systems at the Advanced Test Reactor (ATR).

The field inspection activities focused on INTEC, TAN, and IRC.

The Emergency Management portion of the inspection evaluated selected aspects of emergency planning, emergency preparedness, emergency response, and preparedness assurance.

The following positive attributes were identified by the inspection:

- INEEL has achieved significant improvements in worker safety and environmental performance indicators.
- Many aspects of the BBWI ISM program are rigorous, comprehensive, and effectively implemented. Specifically noted were definition of roles and responsibilities, requirements management, the Integrated Assessment Program, the Environmental Management System, and the suspect/counterfeit items program.
- The use of vacuum excavators and air-powered lances at TAN and INTEC efficiently and effectively reduces hazards associated with excavations.
- The Radiological Control Information Management System electronic radiological work permit system is used effectively to control entry into radiological areas and to track personnel and task specific doses.

- BBWI has implemented a rigorous and well-structured framework for the INEEL Emergency Management program.
- The emergency management training, drill, and exercise program is comprehensive and well defined and is effectively used for preparation, proficiency, and improvement.
- Key emergency responders demonstrated appropriate decision-making during tabletop tests and during real events.
- Many aspects of the Emergency Management program have improved since the 1998 review and further improvements are planned.

The inspection identified the following program weaknesses applicable to BBWI:

- Weaknesses in ATR design analysis raise concerns whether the systems designed to mitigate loss-of-coolant accidents adequately protect against all potential accident scenarios.
- INTEC and TAN field supervision and safety professionals did not ensure that work activities were performed within established hazard controls and requirements.
- The level of rigor and formality applied to radiological hazards analyses at the Building 616 D&D project were not sufficient.
- The independent hazard review process does not sufficiently document IRC management expectations for some elements of hazards analysis in planning and conducting research.
- Hazards assessment weaknesses diminish the rigor of the foundation of the Emergency Management program.
- Weaknesses in the specificity of many emergency action levels thresholds and some of the associated predetermined protective actions limit their usefulness in a high-stress environment.

These program weaknesses resulted in 11 specific findings requiring BBWI corrective action plans. The findings are listed in Table 10 in the Appendix. The inspection also identified 35 opportunities for improvement that are listed in Tables 11 and 12 in the Appendix.

The inspection conclusions provided the following overall ratings for the ISM and Emergency Management programs. The ratings reflect both BBWI and NE-ID performance.

- Safety Management System
 - Guiding Principle #2—Clear Roles and Responsibilities EFFECTIVE PERFORMANCE
 - Guiding Principle #5—Identification of Standards and Requirements EFFECTIVE PERFORMANCE
- Feedback and Improvement
 - Core Function #5—Feedback and Continuous Improvement NEEDS IMPROVEMENT

- Implementation of Core Functions for Selected Work Activities
 - Core Function #1—Define the Scope of Work EFFECTIVE PERFORMANCE
 - Core Function #2—Analyze the Hazards EFFECTIVE PERFORMANCE
 - Core Function #3—Develop and Implement Hazard Controls NEEDS IMPROVEMENT
 - Core Function #4—Perform Work Within Controls NEEDS IMPROVEMENT
- Essential System Functionality
 - Design and Configuration Management SIGNIFICANT WEAKNESS
 - Surveillance, Testing, and Maintenance NEEDS IMPROVEMENT
 - Operations EFFECTIVE PERFORMANCE
- Emergency Planning
 - Hazards Surveys and Hazards Assessments NEEDS IMPROVEMENT
 - Program Plans and Procedures EFFECTIVE PERFORMANCE
- Emergency Preparedness
 - Training and Drills EFFECTIVE PERFORMANCE
 - Emergency Response Exercises EFFECTIVE PERFORMANCE
- Emergency Response
 - INEEL Emergency Response Decision-Making EFFECTIVE PERFORMANCE
- Readiness Assurance
 - DOE Assessments and Performance Monitoring NEEDS IMPROVEMENT
 - Contractor Assessments and Issues Management EFFECTIVE PERFORMANCE

4.4.6 Other External Assessments

Radioactive Waste Acceptance Program Audit

In August 2003, the National Nuclear Security Administration/Nevada Site Office (NNSA/NSO) conducted an audit of the INEEL Low-Level Waste Certification Program (WCP). The purpose of the audit was to evaluate INEEL's WCP for compliance with the *Nevada Test Site Waste Acceptance Criteria* (NTSWAC), Revision 4.

Three NNSA/NSO Corrective Action Requests (CARs) were issued representing conditions that violated specific NTSWAC and/or INEEL program requirements. Also, six observations were identified which represented conditions that, if not monitored and/or corrected, could potentially result in future noncompliance.

The CARs included:

- No documented evidence was available to show that the NTS waste certification program had been assessed in 2002 and 2003. An assessment is required annually.

- Records maintained in the TRAIN database did not show specific NTSWAC training for personnel involved in the waste certification process prior to July 2003.
- Contrary to NTSWAC requirements, INEEL could not provide objective evidence that sufficient controls are in place to prevent the disposal of transuranic waste at the NTS.

The observations included:

- There is no procedure requiring that the Waste Certification Officer (WCO) be notified of nonconformances, nor is the WCO involved in correcting nonconformances.
- Checklists used for waste certification activities do not contain all of the information required by the NTSWAC.
- Sampling and Analysis Plans inappropriately used container dose rates as unique identifiers.
- Transuranic radionuclides known to be in a waste stream were not identified in the waste profiles.
- Objective evidence could not be provided that laboratory data had been independently validated.
- Not all referenced procedures in the INEEL NTSWAC Implementation Crosswalk adequately addressed the associated NTSWAC-specified criteria.

4.5 Events

4.5.1 Reportable Occurrences

During FY 2003, 105 occurrences were reported into ORPS including 12 unusual occurrences, two emergency occurrences, and 91 off-normal occurrences. The twelve unusual occurrences were reported from four INEEL facilities, with ten occurring at INTEC and TRA. Eleven of the events involved inadequate safety related documents such as Plant Safety Documents and Safety Analysis Requirements or failures to comply with such requirements. The other event involved a business travel automobile accident.

There was one range fire related emergency reported, which is the same as the previous two years. The other emergency occurrence was for a bulging drum located at INTEC.

The 91 off-normal occurrences were reported from six site areas and one program area. The number of occurrences at RWMC and SMC decreased from FY 2002. The number of occurrence at TRA and INTEC increased. The number of occurrences at the other site areas remained essentially unchanged.

“Potential Concerns/Issues,” “Violation/Inadequate Procedures,” “Near Miss Occurrences,” were the three most frequent reasons for submitting occurrence reports. Comparing FY 2003 and FY 2002, the meaningful nature of occurrence variations occurred in potential concerns/issues (increased from 18 to 26), near miss events (increased from 13 to 19), and environmental (decreased from 9 to 5). All other areas remained essentially unchanged.

4.5.2 Near Misses

A near miss is defined in ORPS as having occurred when only a single barrier prevented an otherwise ORPS reportable event, such as an injury or release, or when all of the conditions necessary to cause an

event existed (i.e., when all barriers were compromised). These types of events are coded 10B under the Nature of Occurrence Field in ORPS.

In FY 2003, 19 near miss occurrences were reported in ORPS. During FY 2002, 13 near miss occurrences were reported, and 28 were reported in FY 2001. Eighteen of the near misses reported in FY 2003 were for potential personnel injuries. The table below identifies the number of near miss occurrences by work activity, hazard category, and facility.

FY 2003 Near Miss Occurrences

Type of Activities	Hazard Categories	Facilities
Maintenance (6)	Electrical (10)	INTEC (6)
Construction (5)	Motion (4)	TRA (4)
Operations (4)	Pressure (3)	RWMC (2)
D&D (2)	Gravity/Mass (1)	SMC (2)
Start-up (1)	Environmental (1)	TAN (2)
Training (1)		IFF (2)
		CFA (1)

4.5.3 Lockout/Tagout Occurrences

During FY 2003, 15 LO/TO occurrences were reported. Hazardous energy was present in five of the occurrences and could have been present in three other occurrences. These eight occurrences were reported as near misses. The other seven LO/TO occurrences involved administrative violations only.

This performance is the worst since FY 1999 when 22 LO/TO occurrences were reported. The table below shows the number and category of LO/TO occurrences reported during the past six years.

Year	Hazardous Energy		Administrative	Total
	Potential	Present		
FY 1998	1	1	2	4
FY 1999	4	3	15	22
FY 2000	2	2	4	8
FY 2001	3	4	4	11
FY 2002	4	2	2	8
FY 2003	3	5	7	15

The data indicate that corrective actions for LO/TO occurrences have not been effective in preventing recurrence. The assessment discussed in Section 4.4.3 indicate some potential reasons for this ineffectiveness. Additional actions were taken in FY 2003 to address these problems.

4.5.4 Work Control Occurrences and Injuries

For FY 2003, two new measures were developed to aid in determining whether corrective actions for the CO₂ Accident Root Cause 2, management acceptance of unstructured work control, had been effective. One measure counted those reportable occurrences that were caused by work control failures. During FY 2003, 71 occurrences were counted in this measure. This performance was worse than FY 2002 when 59 occurred and did not meet the performance goal of ≤48. The other measure counted the number of

injuries caused by work control failures. During FY 2003, 28 injuries were counted in this measure. This performance was significantly better than FY 2002 when 53 occurred and easily achieved the performance goal of ≤ 48 .

The table below shows the number of work control occurrences and work control injuries caused by each of the six work control failure modes. Note that each occurrence or injury may be caused by more than one failure mode. The data in the table show that most of the work control occurrences (59%) were caused by not performing work in accordance with (IAW) established hazards controls whereas most of the injuries (69%) were caused by failure to identify the hazards. Further analysis of this information is needed to understand the reasons for these failures and reduce their occurrence.

Work Control Failure Mode	Work Control Occurrences	Work Control Injuries
Hazards not identified	18	22
Hazards not controlled	3	2
Hazard control inappropriate	7	4
Hazard controls not implemented	4	0
Work not performed IAW controls	52	4
Inappropriate work control method	0	0

4.5.5 Response to Work Control Events

During February 2003, BBWI recognized an increase in both the number and seriousness of work control events. In response to this increase in events, BBWI initiated a number of actions to better control work activities, investigate and analyze the events, and identify corrective and preventive actions. These actions included the following:

- A sitewide Safety Standdown,
- Implementation of the LO/TO Enhancement Plan,
- Appointment of a Pressurized Systems Task Team,
- Investigation of the CFA sling hook test failure,
- Performance of a collective causal analysis of the events,
- Increased management presence in the field,
- Systematic identification of potential work control vulnerabilities, and
- Increased management oversight of plans-of-the-day reviews, senior supervisory watches, and LO/TO reviews.

These actions and additional actions resulting from the investigations and analyses were committed to NE-ID. Progress was monitored by the SORB and briefed to NE-ID. The actions were effective in reducing the number of events during the second half of FY 2003.

However, other work control events did occur. As a result, NE-ID imposed a fee reduction under Contract Clause I.66, Conditional Payment of Fee, for four events:

- Stacked waste container toppling onto forklift at RWMC,
- Cask fissile array spacing violation at INTEC,
- Overhead communication line damage from transportation of Large Cell Cask at INTEC, and
- Noncompliance with Safety Analysis Report for Packaging for Oak Ridge Spent Fuel Cask.

NE-ID stated that further improvement was needed in the rigor and discipline of work control processes and in the implementation of safety basis documents. NE-ID also questioned the effectiveness of the INEEL ISMS because of these events.

4.6 Regulatory Compliance

4.6.1 Environmental

During FY 2003, the Idaho Department of Environmental Quality (DEQ) and other regulators conducted inspections of INEEL facilities to evaluate compliance with environmental regulations. The DEQ has primacy for enforcing Resource Conservation and Recovery Act (RCRA), the Clean Air Act, and the Clean Water Act in Idaho. The following inspections were conducted:

- RCRA Annual Inspection at RWMC, TAN, PBF/WERF/WROC, INTEC, and TRA (10/02)
- Air Permit Compliance Inspection at TRA (10/02)
- Air Permit Compliance Inspection at INTEC (11/02)
- Semi-Annual Sewage Pretreatment Agreement Inspection at IRC (2/03)
- Air Quality Inspection at CFA (2/03)
- RCRA Annual Inspection at INTEC, TRA, RWMC, WERF/WROC, and CFA (8/03)
- Title V Air Permit Compliance Inspection at IRC (9/03)
- Landfill Complex Inspection at CFA (9/03).

The October 2002 RCRA inspection resulted in a Warning Letter rather than a Notice of Violation (NOV). Potential violations identified during the inspection were not considered sufficiently serious to warrant an NOV. All corrective actions related to the inspection have been completed ahead of the milestones. INEEL received written concurrence from the DEQ that the RCRA inspection violations have been adequately addressed. This is the first time in 11 years that INEEL has not received an NOV following a RCRA inspection. The results of the August 2003 RCRA inspection have not been received. The inspection closeout briefing was generally positive but some issues were identified. No violations were identified by any of the other inspections.

At the request of senior management, a Six Sigma PIP addressed errors and quality issues in environmental permit applications, reports, and other documents prepared for submittal to government

agencies. An implementation plan was prepared. A key part of this plan was revision of MCP-9109, “Certification and Transmittal of Environmental Permit Applications and Routine Reports” (ISMS-2002-41). In FY 2003, three revisions, Revisions 3, 4, and 5, were issued and implemented. Revision 5 has been retitled, “Preparation, Certification and Transmittal of Environmental Permit Applications and Routine Reports” to better reflect the full intent. This document provides instruction for a uniform, consistent approach to data collection for the preparation, review, certification, and distribution of permit applications and other documents for submittal to governmental agencies. Furthermore, the current revision clarifies roles and responsibilities for implementation of permit requirements and reflects the most recent organization into INEEL and ICP.

In FY 2002, it was recognized that Hazardous Air Pollutants (HAPs) emitted from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) activities should be included in a determination under the Clean Air Act as to whether or not a facility is a major source of HAPs. With the CERCLA emissions considered, the INEEL is a major source of HAPs. As a result, certain Maximum Achievable Control Technology (MACT) notifications must be submitted, and the Title V Operating Permit Application needed to be revised. The MACT notifications were submitted in FY 2002 (ISMS-2002-42). Since then, the permit application was revised and submitted to the State of Idaho on January 30, 2003. The State is expected to issue the permit in summer 2004.

4.6.2 Price Anderson Amendments Act

When issues are entered into ICARE, they are screened to determine whether they are noncompliances with the requirements of the PAAA rules. During FY 2003, 540 issues were identified as PAAA noncompliances. For this evaluation, these noncompliances were categorized for further analysis. The table below shows the categories, the proportion of noncompliances in each category, and the most frequently identified subcategories.

Category	Proportion	Most Frequent Subcategories
Business Management	1%	Supply Chain Management
Environmental	1%	RCRA
Maintenance	3%	Lack of Equipment PM Maintenance Documentation of Equipment History
Operations	39%	Work Control Control of Equipment & System Status
Quality	35%	Records Management Personnel Training Material Control
Safety and Health	10%	Industrial Safety Fire Protection
Radiological Controls	11%	Contamination Monitoring and Control Radiological Work Planning & Control

Seventeen PAAA noncompliances were entered into the Noncompliance Tracking System (NTS) in FY 2003. Fifteen or 88% of these were identified as a result of the assessment process as opposed to being event driven or identified by DOE. This is an improvement over FY 2002 where 73% were identified as a result of the assessment process, and continues to be well above the 50% goal. The percentage of assessment identified NTS reports is considered by the DOE Office of Enforcement to be

one of the key indicators of an effective PAAA program. DOE also expects contractors to be “timely” in screening and reporting PAAA noncompliances as well as in the development and completion of effective corrective actions. In FY 2003, two of the 17 reported noncompliances were not screened within the 15 day guidance criteria, four of the reported noncompliances were not reported in NTS within the 20-day guidance criteria, and corrective action plans for six of the reported PAAA noncompliances were not developed and approved within the 45-day criteria. Nine of 201 corrective actions were closed after the commitment date. In some cases, a decision was made to delay screening and formal reporting of issues due to the complex nature of the issue. In these cases, DOE was notified.

A review of the reported noncompliance revealed areas where continuing management attention to maintain or improve performance is warranted. The assessment process continues to be effective in identifying legacy safety basis and quality inspection issues. Other issues involved safety basis requirements at INTEC, work control at TRA and RWMC, and Radiological Control requirements.

The DOE Office of Enforcement did not conduct any investigations of the noncompliances reported during FY 2003. No enforcement actions were received. However, BBWI has initiated discussions regarding a Consent Order with actions addressing the waste stack collapse at RWMC.

4.7 Employee Safety Concerns

A safety concern may be entered into ICARE from several sources including workplace inspections, surveillances, accident investigations, management assessments, and independent assessments. Many of these are the result of assessments performed by employees. For this evaluation, the safety concerns thought to have been identified by employees were analyzed. Safety concerns resulting from formal assessments, for example, those identified by Independent Oversight, were excluded from the analysis. A total of 318 issues in ICARE were identified as employee safety concerns. Approximately 81% of the concerns were Safety and Health issues. They were mainly in the areas of facility conditions, maintenance, and housekeeping.

The 318 employee safety concerns reported in FY 2003 was an increase from the 209 reported in FY 2002. However, the 209 reported in FY 2002 was a significant decrease from the 642 reported in FY 2001. The FY 2002 ISMS Evaluation Report identified this decline as an issue which required further evaluation (ISMS-2002-39). During FY 2003, the decline was evaluated using employee interviews during FEB and VPP assessments. Three causes for the decline were identified:

- Employees were not able to see exactly when and how their concerns were addressed.
- Employees had already, in previous years, reported the more significant concerns and believed the process was too laborious for smaller concerns.
- Several facilities had developed their own tracking systems and were not entering the concerns into ICARE.

Actions were taken to address these problems which resulted in an increase in the number of safety concerns reported into ICARE in FY 2003.

5. SYSTEM IMPACTS EVALUATION

DOE Guide 450.4-1B specifies that the annual ISMS evaluation include an analysis of potential impacts to the ISMS. The guide identifies examples of potential impacts as significant changes in mission budgets, contractors, etc.

The FY 2002 ISMS evaluation did not identify any significant changes in FY 2002 that could impact ISMS but did note that significant organizational changes were planned for FY 2003. Senior BBWI management committed to making these changes without fundamentally changing the philosophy or implementation of the INEEL ISMS. During FY 2003, the organizational changes were reviewed to determine potential impacts to the ISMS. In addition:

- Each change was documented,
- NE-ID was notified of changes to key documents listed in PDD-1004, Chapter 6, and
- PDD-1004 was revised and submitted to NE-ID for approval when the reorganization was completed.

In July 2003, potential impacts to the ISMS from the reorganization were evaluated by an Independent and Management Assessment Team. The assessment focused on the continuing core expectations outlined in DOE G 450.4-1, "Integrated Safety Management System Guide." Rather than repeating assessments in the areas of Environmental Management and VPP, the team incorporated reports, of recently completed assessments of those areas by independent or third party auditors. The assessment of BBWI's Environmental Management System was conducted by NSF International Strategic Registration, LTD. Assessment of BBWI's Voluntary Protection Program was conducted by STAR Consultants, Inc.

The assessment identified 22 potential issues and associated recommendations to address each issue. The team concluded that all ISMS elements were being maintained and implemented and that there were no negative impacts to ISMS as a result of the reorganization.

During the FY 2003 evaluation, the status of the 22 issues was reviewed. The review determined that 17 of the issues has been closed and that 5 were open with actions pending.

The SMEs, FSMs, and LMRB also evaluated potential impacts of the reorganization on key processes and functional areas. Four issues were identified:

- Ensuring that SMEs and FSMs serving both ICP and INEEL were clearly designated (see Section 3.1.2),
- Ensuring adequate staffing from ICP for the emergency response organization (ISMS-2003-28),
- Addressing an apparent shortage of skilled craft and laborers (ISMS-2003-29), and
- Defining R2A2s at lower organizational levels (see Section 3.1.2).

6. EVALUATION CONCLUSIONS

The results from the evaluation of the system, performance, and impacts were analyzed to determine ISMS strengths and areas where improvements are needed. The results of that analysis are presented in Sections 6.1 and 6.2. Needs for focused training are discussed in Section 6.3. Changes which need to be made to the System description are discussed in Section 6.4. Conclusions about the System status and effectiveness are discussed in Section 6.5.

6.1 Strengths

The strengths of the ISMS were concluded to be the following:

- **Environmental Management System:** By achieving of ISO 14001 registration and by significant improvements in regulatory compliance, the EMS has become a strength at INEEL.
- **Voluntary Protection Program:** INEEL achieved VPP Star status in FY 2001. In both FY 2002 and FY 2003, INEEL was awarded the DOE VPP Star of Excellence Award, the highest VPP award.
- **Requirements Management:** The maintenance of Lists A and B and the rolldown of requirements to the company, facility, and activity levels ensure compliance and tailoring of requirements to work activities. The OA inspection identified Requirements Management as a positive attribute and, in particular, cited source requirements references for each procedural step, the computer-based Requirements Management Tracking System, and assurance that workers receive training on new procedures before issuance.
- **Training and Qualification Processes:** These processes when followed ensure competence commensurate with responsibility for management and workers.
- **Radiological Controls Program:** The many improvements which have been made to this program in recent years have resulted in outstanding performance. The strength of this program has also been recognized by DOE and other external agencies.
- **Fire Protection Program:** Completion of significant improvements in a multi-year Fire Protection improvement plan has resulted in very strong performance.
- **Emergency Management:** The Emergency Management program continues to be strong and routinely gets high marks. The OA inspection gave good overall grades to the program and identified several elements as positive attributes.
- **Occupational Safety and Health Program:** The strength of this program is evidenced by the VPP awards and the reduction in injuries and illnesses discussed in 4.2.
- **Employee Involvement:** Employee involvement in the integrated ISMS/VPP has been a key element of successes and recognitions and has been noted by the DNFSB on several occasions as a strength, particularly in feedback and improvement processes.
- **Suspect/Counterfeit Items Program:** The effectiveness of this program was identified as a positive attribute by the OA inspection.

- **PAAA Compliance Program:** An assessment by the DOE Office of Enforcement during late FY 2002 showed the INEEL program as one of the best in the DOE complex. This program proactively identifies, reports, and corrects PAAA noncompliances.
- **Integrated Assessment Program:** This comprehensive program has been modified in the last two years to reduce the number of assessments and improve the quality. These changes have increased the efficiency and effectiveness of the program. The OA inspection identified the Integrated Assessment Program as a positive attribute.
- **Facility Evaluation Board:** Implementation of this management and independent management assessment process provides a critical, comprehensive evaluation of ISMS implementation at the facility and activity levels. The FEB process has been identified as a strength by NE-ID and other external reviewers.
- **Issues Management Processes:** The many revisions and refinements in these processes in recent years have produced processes that are consistently acknowledged as providing all the necessary elements for excellence in issues management.
- **Performance Measurement and Analysis Program:** During FY 2003, this program was modified and formally documented to include measurement, analysis, and the ISMS annual evaluation. The measures and indicators that are routinely developed, analyzed, and published provide comprehensive information about performance in ISMS implementation. The program has been noted as a strength in external reviews.
- **ISMS Maintenance and Evaluation Processes:** These comprehensive processes have been acknowledged by NE-ID, DOE-HQ, DNFSB, and other sites as benchmarks for maintaining and continuously improving the ISMS.

6.2 Areas for Improvement

The evaluation results indicate that the following areas need improvement. These areas for improvement are listed in Table 13 in the Appendix.

- **Development and Implementation of Hazards Controls:** This ISMS core function was a primary category of assessment findings. The OA inspection graded this area as needs improvement. Areas needing improvement include:
 - **USQ Process Design and Implementation:** Both internal assessments and the OA inspection identified problems with the USQ process and its implementation.
 - **Safety Bases Implementation:** Improvements in this area in FY 2003 were notable; however, implementation problems continue to contribute to occurrences and PAAA noncompliances and reports. Full implementation of new and revised safety basis documents should improve performance in this area.
 - **Quality Assurance Program Implementation:** The IQAMS project was completed in FY 2003 and improved performance has been noted. However, assessments and reports indicate the need for further improvement in work processes, personnel training, and document management.

- **Industrial Safety:** Although improvements in safety performance measures indicate this area is effective overall, it is a primary category of assessment findings and the OA inspection identified deficiencies that raise questions about the adequacy of hazards controls.
- **Performing Work Within Controls:** The majority of assessment findings were categorized in this area. The OA inspection graded this area as needs improvement.
 - **Conduct of Operations:** INEEL has a mature conduct of operations program, but implementation problems continue to be identified by assessments and events. The most frequently identified areas are general conduct of operations, control of equipment and system status, operations procedures, and work control.
 - **Conduct of Maintenance:** Improvements were made in conduct of maintenance during FY 2003. However, the FEB evaluations identified conduct of maintenance as an area still needing improvement. The quality of work orders and performing maintenance work within established hazards controls are two areas needing improvement.
 - **Procedure Compliance:** Most assessment findings contained some aspect of procedural noncompliance. Because this is such a broad category, further evaluation is needed to identify causes and corrective actions.
- **Feedback and Improvement:** The FEB and IO identified problems in implementing the assessment program and issues management program as sitewide issues. The OA inspection identified opportunities for improvement in these areas.
 - **Assessment Performance:** The OA inspection identified the Integrated Assessment Program as a positive attribute, but also identified implementation problems. Internal assessments confirmed these problems.
 - **Causal Analysis:** Weaknesses in causal analysis were failing to go beyond “personnel error” and “inattention to detail” as causes of events and deficiencies. Improved causal analysis techniques are available for better identifying the real causes and necessary corrective actions.
 - **Corrective Action Management:** Identified problems include failures to enter issues into ICARE where the corrective actions are managed, as well as inadequacies in the development, implementation, and closure of corrective actions.
 - **Lessons Learned Formalization:** Internal assessments identified the need for more formalization of the program to ensure the use of lessons learned. The OA inspection confirmed this need.

6.3 Areas for Focused Training

During the evaluation, SMEs identified training that needs to be conducted to resolve issues in their functional areas or to implement process improvements. In addition, the areas for improvement resulting from the evaluation were reviewed to determine whether training was needed to effect the improvements. As a result of this evaluation, the following areas were identified for focused training in FY 2004. These training areas are listed in Table 14 in the Appendix. The proposed training will be evaluated by the Site Training Review and Implementation Board in accordance with CTR-16 and MCP-9224, “Sitewide Training Analysis and Implementation.” The training will also be evaluated for inclusion in the Annual Training Process.

- **R2A2s of Functional Support Managers and Subject Matter Experts:** The FY 2001 ISMS evaluation identified the lack of a formal process for selection of FSMs and SMEs. Actions to address this issue will be implemented in FY 2004. These actions include training of FSMs and SMEs on their assigned R2A2s.
- **Safeguards and Security:** Additional training and skills development will be needed to meet the demands of the various projects and accelerated cleanup schedule within ICP.
- **Fire Department:** Fire department staff officers need training and certifications for new roles and responsibilities including Firefighter Radiation Worker, Firefighter Training Facility Pendant Computer Operator, Fire Department CPR, and Fire Department Apparatus Driver.
- **Explosives Safety:** Security personnel who transport explosives need training on PLN-320, "Transportation Plan for the Shipment of Explosive Material within the Boundaries of the INEEL."
- **Nuclear Safety Analysis:** All USQ screeners/evaluators and Nuclear Facility Managers need training on the revisions to MCP-123, "Unreviewed Safety Questions." Training is also needed on the new safety analysis process.
- **Nonnuclear Safety Analysis:** Safety analysts and nonnuclear facility managers need training to highlight the new requirements being added to MCP-2451, "Safety Analysis for Other Than Nuclear Facilities" to implement revisions to ID O 420.D.
- **Criticality Safety:** Appropriate personnel need training for Criticality Control Area Officer Orientation and Criticality Engineer Qualification.
- **Document Control:** The writing/editing and document control organizations need training for the pilot of the electronic document action request (e-DAR) at INTEC.
- **Records Management:** Training and qualifications need to be established for a new job category of Records Coordinator Specialist. Additionally, ICP records coordinators need specific RCRA and CERCLA records training.
- **Chemical Management:** The Chemical Coordinator qualification program will be developed and implemented in FY 2004.
- **Construction Management:** As a result of several issues that occurred, a number of training packages are being developed for implementation in FY 2004 including Construction Field Engineer General Discipline, Construction Planning Packages, Inspections for Safety Class 4 and Consumer Grade, Construction Standard Work Procedures, and Field Design Change Process.
- **Project Management:** An update to TRN-764, "Project Management System Training" will be made and added to the project management job code in Book 1.
- **Maintenance:** Safety Training for Maintenance Continuous Improvement is needed to address several issues and to specifically address the event involving damage to communication lines during cask movement.
- **Conduct of Operations:** Conduct of Operations Continuing Training using the ACETS simulator is being finalized for implementation in FY 2004.

- **Conduct of Engineering:** Engineers need training on revisions to MCP-2811, “Design Control” and MCP-590, “Use of Commercial Grade Items in Safety Systems.”
- **Suspect and Counterfeit Item Control:** Specific training is needed on suspect/counterfeit material awareness for current SMC construction, operations, maintenance, engineering, and QA personnel. Additionally, refresher training is needed on MCP-9110, “Suspect and Counterfeit Item Identification and Control.”
- **Integrated Assessment Program:** Continued training is needed on the management and independent assessment processes and to qualify assessors and lead assessors.
- **Issues Management:** A new course on the corrective action system is being developed for implementation in FY 2004. Training is also being planned on changes to the lessons learned program.
- **Performance Measurement and Analysis:** Instruction is needed for personnel assigned to perform quarterly analyses of performance. Topics include use of computerized database reporting and analytical tools.
- **Human Performance Management:** Additional training is being planned on Human Performance Fundamentals and their applications in various processes including critiques, causal analysis, hazards identification, and others.

6.4 System Description Changes

PDD-1004 was revised just before this evaluation to describe the reorganization/restructuring and resulting changes in R2A2s. Internal review indicated that further improvements could be made to the process descriptions and to the organization of the information. NE-ID has indicated a desire for a description with less detail. These changes will be made, and the revised description will be sent to NE-ID for review and approval.

6.5 System Status and Effectiveness

An analysis of the results of the evaluation leads to the following overall conclusions about the status and effectiveness of the INEEL ISMS in FY 2003:

- **All ISMS elements have been maintained and most have been improved.** The ISMS maintenance mechanisms have functioned properly. No elements of the system were identified as having degraded and numerous improvements have been implemented. Fifteen prominent system strengths were identified and discussed in Section 6.1.
- **Areas for improvement were identified.** These areas for improvement were processes within three ISMS core functions:
 - Development and implementation of hazards controls,
 - Performing work within controls, and
 - Feedback and improvement.

Eleven areas for improvement were identified within these core functions as described in Section 6.2. Twenty areas for focused training were also identified as described in 6.3.

- **The system is effective for performing work safely.** Although events and deficiencies indicate specific problems with implementation, overall the system is sound and, when followed, ensures safe performance of work as demonstrated by significant work accomplishments in FY 2003.

7. FY 2004 SAFETY PERFORMANCE OBJECTIVES, MEASURES, AND COMMITMENTS

Performance objectives are long-term management system goals. They are primarily established by the INEEL Institutional Plan (FY 2002–2006), the Performance Evaluation Management Plan (FY 2002–2004), and the ESH&QA Program Execution Guides and normally are not substantially changed from year to year.

Performance commitments are actions that will be taken during a specific year to further achievement of long-term performance objectives. Sources of these commitments include established PEMP and PEGs, annual ISMS evaluations, and categories of actions identified in DOE budget guidance.

Performance measures are used to monitor achievement of objectives and commitments. The measures are changed as necessary to best address the performance objectives. Annual performance expectations are established for most of these measures. In general, these expectations are specific improvements in performance as compared to the previous year. If no specific goals are set, improvement is still expected unless a long-term goal (e.g., zero) has been achieved.

The overall purpose of the Safety Performance Objectives, Measures, and Commitments is to ensure work is performed safely so that productivity is improved and the ICP and INEEL missions are achieved.

7.1 Performance Objectives

The following performance objectives have been established for FY 2004. These objectives are listed in Table 15 in the Appendix.

- **Achieve operational excellence to enable accelerated site cleanup and enhance the laboratories ability to execute its research and development mission.**
- **Maintain and continuously improve the Integrated Safety Management System.**
- **Continuously improve safety performance.**
- **Achieve and maintain full environmental regulatory compliance.**
- **Meet commitments to compliance agreements on schedule, within costs, and, as appropriate, through integration of science and technology.**
- **Complete clean up of legacy contamination.**
- **Conduct operations so as to conserve natural resources and minimize environmental impacts and, thereby, achieve DOE pollution prevention and energy efficiency goals.**
- **Implement and maintain a compliant Quality Assurance program that promotes employee and management participation and strives for continuous improvement.**

7.2 Performance Measures

For FY 2003, the following performance measures will be used to evaluate achievement of FY 2004 Safety Performance Objectives and Commitments. These measures are listed in Table 16 in the Appendix.

7.2.1 Environmental Compliance

Five metrics are used to measure environmental compliance:

- **Reportable Releases:** Reportable releases are spills or releases to the environment that exceed designated thresholds and require reporting to the State of Idaho.
- **Externally Identified Environmental Deficiencies:** These deficiencies include those identified by external regulatory agencies. Deficiencies identified by DOE are not included.
- **Enforceable Environmental Milestones:** Enforceable environmental milestones result from compliance agreements negotiated between the INEEL and regulatory agencies for environmental remediation and resolution of compliance issues. These milestones are found in the Federal Facilities Agreement/Consent Order, Notices of Violation/Consent Orders, and Voluntary Consent Orders.
- **Site Treatment Plan Milestones:** DOE is required under the Federal Facilities Compliance Act to prepare a plan for developing treatment capacities and technologies for each facility at which DOE generates or stores mixed waste. The Site Treatment Plan (STP) is the document developed at the INEEL to fulfill this requirement. The STP is evaluated and updated by BBWI and approved by the State of Idaho quarterly.
- **Settlement Agreement Milestones:** The Settlement Agreement between DOE, the Navy, and the State of Idaho guides the management of spent nuclear fuel and radioactive waste for the next 40 years. It provides enforceable milestones, with the removal of all spent nuclear fuel from Idaho by 2035 as the ultimate goal.

7.2.2 Pollution Prevention

Five performance measures have been developed for pollution prevention. Progress in achieving long-term goals established by DOE is measured by comparing performance in these areas to a linear proration of the long-term goals.

- **Hazardous Waste Generation:** This metric is a measure of hazardous waste generated at the INEEL from routine operations. Hazardous waste is defined as waste that is regulated under RCRA. Routinely generated waste is waste from ongoing activities and excludes waste generated from remediation or decontamination and decommissioning activities.
- **Radioactive Low-Level Waste Generation:** This metric is a measure of LLW generated at the INEEL from routine operations. LLW is radioactive waste that does not fall into the categories of high-level waste, transuranic waste, or spent nuclear fuel/by-product material. Routinely generated waste is waste from ongoing activities and excludes waste generated from remediation or decontamination and decommissioning activities.
- **Mixed Low-Level Waste Generation:** This metric is a measure of MLLW generated from INEEL routine operations. MLLW is waste that is both RCRA hazardous and radioactive. Routinely generated waste is waste from ongoing activities and excludes waste generated from remediation or decontamination and decommissioning activities.
- **Sanitary Waste Recycling:** DOE has established recycling goals from all operations. All operations includes both routine operations wastes and cleanup-stabilization wastes.

- **SARA 313 Chemical Usage:** Section 313 of SARA requires reporting of releases of listed toxic chemicals to the environment due to normal operations that are manufactured, processed, or otherwise used in a calendar year. Reporting must be done only if the chemical is used above established threshold quantities.

7.2.3 Energy Efficiency

Four measures are used for energy efficiency performance. Performance is measured against goals established similarly to pollution prevention goals.

- **Energy Consumption—Idaho Falls Facilities:** This metric provides data on energy consumption in British thermal units (BTUs) per gross square footage for INEEL buildings in Idaho Falls. The energy measured for this metric is from electricity and heating.
- **Energy Consumption—Site Facilities:** This metric provides data on energy consumption in BTUs per gross square footage for BBWI-managed facilities within the INEEL reserve area. The majority of energy use is not devoted to the heating, cooling, lighting, and ventilation requirements of the facility.
- **Petroleum Consumption:** The total quantity of petroleum fuel consumed by INEEL vehicles.
- **Alternative Fuel Usage:** The percent of alternative fuel used in alternative fueled vehicles. Alternative fuel includes compressed natural gas, liquefied natural gas, propane, and electricity.

7.2.4 Occupational Safety and Health

Seven measures are used for occupational safety and health performance.

- **Day Away Case Rate:** The rate of occurrence, per 200,000 manhours, of injuries and illnesses that result in days away from work.
- **Total Recordable Case Rate:** The rate of occurrence of injuries and illnesses, per 200,000 manhours, that are recordable by OSHA criteria.
- **First Aid Case Rate:** The rate of occurrence of first aid cases per 200,000 manhours.
- **Total Case Incidence Rate:** The rate of occurrence of all recordable and first aid cases per 200,000 manhours.
- **Exposures Exceeding TLVs or PELs:** The number of unprotected exposures to employees which exceed ACGIH threshold limit values (TLVs) or OSHA permissible exposure limits (PELs).
- **Construction Safety Violations Index:** The ratio of violations observed during routine surveillances of construction activities to the total number of observations.
- **Fire Protection Systems Maintenance:** The percentage of maintenance activities on water based fire suppression systems and fire protection and life safety systems that are completed as scheduled.

7.2.5 Radiological Safety

- **Radiological Performance Index:** A numeric value that compares the frequency and severity of undesirable events that occurred during the performance of radiological work one year to the

frequency and severity of undesirable events that occurred during the performance of radiological work the previous year.

- **Radiation Exposure Control:** This measure tracks doses to workers that exceed established threshold values.
- **Radiation Dose to the Public:** A hypothetical estimate of the collective dose equivalent to all off-site people within a 50-mile radius of a DOE facility, over a calendar year, in person REM. The dose is estimated annually using a mathematical model with data on airborne radionuclide releases, meteorology, and population distribution. The model presumes most of the dose originates as an airborne release.

7.2.6 Self-Assessment

Three performance measures are used to determine the effectiveness of self-assessments:

- **Completed Assessments:** To identify issues, assessments must be planned, scheduled, and performed. Completion to schedule is used to determine performance in this area. The schedule used is the SORB approved plan of management and independent assessments.
- **Issues Identified by Assessments:** The percent of issues identified by planned assessments. Issues identified by unplanned observations or external assessments are excluded.
- **Externally Identified Issues:** The goal of the assessment program is to self-identify issues. The proportion of issues which are not self-identified, i.e., externally identified, is used to measure achievement of this goal.

7.2.7 Issues

Issues are defined as problems requiring management attention that have a reasonable potential for causing adverse environment, safety and health, or quality assurance consequences. Thirteen categories of issues are measured:

- **Reportable Occurrences:** Occurrences which are reported into the DOE Occurrence Reporting and Processing System (ORPS).
- **Near Miss Occurrences:** Reportable occurrences classified as near misses which could have resulted in personnel injury.
- **Safety Basis Violations:** Reportable occurrences involving violation of safety basis requirements.
- **Work Control Occurrences:** Reportable occurrences caused by work control failures.
- **Work Control Recordable Cases:** OSHA recordable injuries or illnesses caused by work control failures.
- **PAAA Noncompliances:** Issues which are categorized as noncompliances with PAAA requirements.
- **PAAA Reportable Noncompliances:** PAAA noncompliances which are reported into the DOE NTS.

- **Significant Deficiencies:** Issues which deviate from written requirements that, if uncorrected, could have a serious affect on safety, the ability to isolate waste, or the capability to mitigate the consequences of accidents that could result in potential offsite releases or exposures, or could seriously jeopardize the ability of an activity or organization to meet its mission objective.
- **Adverse Deficiencies:** Issues that deviate from written requirements but are not classified as significant.
- **Nonconformances:** Items, hardware, material, or supporting information having a deficiency in characteristic, documentation, or procedure that renders the quality unacceptable or indeterminate.
- **Safety Concerns:** Issues that do not deviate from written requirements.
- **Other Issues:** Issues that do not meet the criteria for occurrences, nonconformances, deficiencies, or safety concerns.
- **Recurring Issues:** Issues that are similar or identical to previously identified issues.

7.2.8 Issues Management

Seven measures are used to evaluate performance in issues management in two categories:

- **Issues Closure:** Efficiency in closing issues will be monitored by five measures:
 - Extensions,
 - On time,
 - Late,
 - Average time, and
 - Average age.
- **Lessons Learned:** Two measures will be used to determine effectiveness of the Lessons Learned Program:
 - Identification (of internal lessons learned)
 - Implementation (of internal and external lessons learned).

7.2.9 Maintenance

Three measures will be used for maintenance performance:

- **Backlog of Maintenance and Repair:** Total estimated man-hours and number of work orders.
- **Preventive Maintenance Completion Rate:** The total number of preventive maintenance work packages completed divided by the total number scheduled.

- **Work Order Mean Time to Repair:** The average number of days from when work requests (in three priority levels) are submitted until the work is complete.

7.3 Performance Commitments

The FY 2004 performance commitments include actions identified for FY 2004 in the PEMP and the areas for improvement identified by the FY 2003 ISMS evaluation that are discussed in Section 6.2 of this report. Some of the FY 2004 commitments are carried over from FY 2003 because they are part of long-term plans (e.g., implementing Human Performance Management), because plans developed in FY 2003 included FY 2004 actions (e.g., improving Conduct of Maintenance), or because these commitments are needed each year to ensure achievement of performance objectives (e.g., maintaining VPP and EMS status).

The following performance commitments have been identified for FY 2004. These commitments are listed in Table 17 in the Appendix. For each commitment, actions have been or will be developed. These actions will be contained in action plans that are tracked in ICARE or separately as appropriate.

- **Maintain ISO 14001 registration for the INEEL Environmental Management System:** Maintaining registration requires continued implementation of program requirements and demonstrating acceptable performance in an annual self-assessment and in semi-annual surveillances by the registrar auditors.
- **Implement actions to achieve Pollution Prevention and Energy Efficiency Goals:** These actions address achieving goals for waste reduction, sanitary waste recycling, SARA 313 chemical usage, energy consumption, petroleum consumption, and alternative fuel usage. Performance measures have been developed for each of these efforts.
- **Complete scheduled enforceable environmental milestones:** In FY 2004, 26 environmental milestones are scheduled for completion including 10 VCO, 8 FFA/CO, 2 STP, and 6 NOV/CO milestones. Actions to achieve these milestones are major FY 2004 programmatic work commitments.
- **Complete scheduled actions in the EM Accelerated Cleanup Plan:** The EM Accelerated Cleanup Plan identifies activities and milestones to accelerate environmental cleanup in line with the Top-To-Bottom EM Review Report. Completion of scheduled actions for FY 2004 will facilitate application of the DOE investment to other DOE missions and growing the INEEL as a R&D laboratory.
- **Implement improvements in Chemical Services:** Implementation of actions will continue the significant improvements achieved in chemical management. Planned actions address correcting deficiencies in the INEEL Chemical Management System database, training of Chemical Custodians, and procedural changes.
- **Maintain VPP Star status:** For FY 2004, maintenance includes continued implementation of program requirements, acceptable safety statistics, an annual self-assessment with a minimum score of 80% in each element, and successfully passing a recertification review by DOE.

- **Develop and implement actions to improve Safety Basis implementation:** Although many improvements have been made and recognized, deficiencies in safety basis implementation continue to be a primary cause of reportable occurrences and PAAA noncompliances. Additional actions are needed to achieve expected performance. These actions include full implementation of new and revised safety basis documents, continued implementation of PLN-489, and correction of deficiencies in USQ process design and implementation.
- **Develop and implement actions to improve performance in Conduct of Operations:** Actions were taken in FY 2003 to improve performance in conduct of operations and improvement was noted; however, conduct of operations continues to be the primary category of deficiencies identified by assessments. Areas needing improvement include general conduct of operations, control of equipment and system status, operations procedures, and work control.
- **Develop and implement actions to improve performance in Conduct of Maintenance:** Performance in conduct of maintenance was an area identified by the FEB as needing improvement. This need is supported by other assessment findings. Particular areas needing improvement include the quality of work orders and performing work within controls.
- **Development and implement actions to improve performance in Quality Assurance:** Implementation of IQAMS has improved performance, but assessment findings indicate further improvement is needed in work processes, personnel training, and document management.
- **Develop and complete planned actions to implement INPO Human Performance Management processes:** Implementation began in FY 2001 and continued in FY 2002 and FY 2003. Full implementation of the Human Performance Management processes address reducing events and improving performance in conduct of operations, conduct of maintenance, quality assurance, safety basis implementation, and feedback and improvement. These actions are being developed by a cross-organizational Strategic Working Group and will be approved by a senior management Steering Team. The actions include development of appropriate leading indicators of performance.
- **Develop and implement actions to reduce near misses and work control occurrences:** The number of near misses and work control occurrences increased in FY 2003. One particular concern is continued problems with LO/TO violations. Numerous actions were taken in FY 2003 to reduce these events with some success; however, additional actions are necessary. Reduction of these events will be a primary focus of Human Performance Management implementation.
- **Implement actions to correct DOE-OA Inspection findings:** Corrective actions have been submitted to NE-ID. Implementation will be routinely monitored and reported.
- **Evaluate opportunities for improvement identified by the DOE-OA Inspection and implement as appropriate:** These improvement recommendations will be evaluated. Those selected for implementation will be tracked to completion.
- **Evaluate opportunities for improvement identified by Functional Support Areas and implement as appropriate:** These improvement recommendations are discussed in Section 3.3. Those selected for implementation will be tracked to completion.
- **In coordination with NE-ID, develop a contract requirements management process designed to identify an appropriate set of standard practices and controls tailored to the hazards of the work to be performed:** This is an action in the FY 2004 PEMP that focuses on streamlining requirements for work activities.

- **Develop and begin implementation of a risk based performance assurance system containing the basic elements of the NNSA Contractor Assurance System:** This is an action in the FY 2004 PEMP. Basic elements include self-assessment, performance measurement, external reviews, and responsive corrective action management.
- **Implement actions to improve Feedback and Improvement processes:** These actions address improvements in Integrated Assessment Program implementation, causal analysis, corrective action management, and Lessons Learned program formalization.

Appendix Tables

Table 1
Cross-reference of Continuing Core Expectations (CCEs)
to ISMS Annual Report Sections

	CCE	Report Section
CCE-1	Annual updates in response to budget guidance: - Performance objectives, measures, and commitments updated. - ISMS description updated and submitted for approval.	7 6.4
CCE-2	System effectiveness (measured as described) is satisfactory. SPOMCs met or exceeded. SPOMCs revised for next year.	6.5 4.1, 4.2 7
CCE-3	Work activities reflect implementation of core functions including worker involvement as priority: - Define Scope of Work - Identify and Analyze Hazards - Develop and Implement Hazard Controls - Perform Work Within Controls - Provide Feedback and Improvement	4.4 – 4.7
CCE-4	Implementing mechanisms support guiding principles: - Roles and responsibilities are clear. - Line management is responsible for safety. - Required competence is commensurate with responsibilities. Technical and safety system knowledge of managers and staff continue to improve.	3.1 3.1.2 3.1.2 3.1.3
CCE-5	Budget processes ensure balanced priorities: - Budget development and change control ensure safety and production are balanced. - Facility procedures ensure safety and production are balanced.	3.1.1
CCE-6	An effective feedback and improvement process is in place at activity, facility, and site levels. Expectations of DOE P 450.5 are in place: - Performance measures and performance indicators - Line and independent evaluations - Compliance with applicable requirements - Data collection, analysis, and corrective actions - Feedback and performance improvement Issues management is effective. ISMS issues previously identified in verifications and annual evaluations are effectively addressed.	3.1.10, 4.2 3.1.8, 4.4 3.1.4, 4.4 3.1.9, 3.1.10 3.1.8, 9, 10 3.1.9 4.3
CCE-7	Effective, dynamic process to keep standards and requirements current is apparent: - List A/B is reviewed and updated at least annually with budget cycle. - Process for changing List A/B is used and effective. - Authorization Agreements and Authorization Basis documents are maintained current.	3.1.4 3.1.4 3.1.5
CCE-8	Performance objectives and criteria guidance for assessments focus on adequate implementation of core function and guiding principles. Assessments use the POCs.	3.1.8, 4.4
CCE-9	Relevant records that provide evidence of ISMS implementation, integration, and effectiveness reflect an improving ISMS: - Routine self-assessment reports - Independent and focused assessment reports - Incident investigations - Occurrence reports - PAAA enforcement action reports - Enforcement activity by external ES&H agencies - Other documentation Feedback, improvement, and change control of ISMS description is in place and effective.	6 4.4 4.4 4.5 4.5 4.6 4.6 4.7 6.4

Table 2
FY 2003 ISMS Evaluation Issues

Process	Issue Number	Issue	Report Section
R2A2s	ISMS-2003-01	Identification of functional support areas and SMEs	3.1.2
	ISMS-2003-02	ISMS responsibilities in Site Steering Committee charters	3.1.2
	ISMS-2003-03	Definition of R2A2s at lower ICP organization levels	3.1.2
	ISMS-2003-04	Designation of FSMs and SMEs for INEEL and ICP	3.1.2
	ISMS-2003-05	Definition of R2A2s for Construction Field Engineers	3.1.2
Training	ISMS-2003-06	Proficiency of personnel performing LO/TO	3.1.3
Requirements Management	ISMS-2003-07	Implementation of ID O 420.D (Safety Analysis)	3.1.4
	ISMS-2003-08	Implementation of ID M 251.A-1 (Directives System)	3.1.4
	ISMS-2003-09	Implementation of ID O 433.A (Maintenance)	3.1.4
	ISMS-2003-10	Update of Assured Equipment Grounding Conductor Program	3.1.4
	ISMS-2003-11	Redundancy of DOE O 443.1 to 10 CFR 745	3.1.4
	ISMS-2003-12	Requirement for EAP PhD Clinical Psychologist	3.1.4
	ISMS-2003-13	Update of MLLW Project requirements rolldown	3.1.4
	ISMS-2003-14	Clarification of requirements for Type 2 procedures	3.1.4
Facility Safety Basis	ISMS-2003-15	Inconsistent implementation of USQ process	3.1.5
	ISMS-2003-16	Controlled list of nonnuclear facilities and managers	3.1.5
Integrated Assessment Program	ISMS-2003-17	Revision of assessment requirements in MCP-3419 (Criticality Safety)	3.1.8
	ISMS-2003-18	Addressing Lessons Learned program in FEB CRADs	3.1.8
	ISMS-2003-19	Integration of HPIL assessments with RadCon program assessments	3.1.8
	ISMS-2003-20	Training program assessment plans and schedules	3.1.8
	ISMS-2003-21	Assessment for compliance with DOE O 435.1	3.1.8
	ISMS-2003-22	Independent assessment of NTS Waste Certification Program	3.1.8
	ISMS-2003-23	Integration of MCP-3449 safety inspections	3.1.8
Issues Management	ISMS-2003-24	Issues not being entered into ICARE	3.1.9
	ISMS-2003-25	Issues not appropriately categorized in ICARE	3.1.9
	ISMS-2003-26	Inadequacies in corrective action management	3.1.9
Performance	ISMS-2003-27	Number and content of performance reports	3.1.10
System Impacts	ISMS-2003-28	ERO staffing for ICP	5
	ISMS-2003-29	Shortage of skilled craft and laborers	5

Table 3
FY 2003 ISMS Evaluation
Opportunities for Improvement

Number	Opportunity for Improvement
Areas Where List A or B Requirements are Exceeded	
ISMS-2002-OFI-01	Storage of incompatible and time sensitive chemicals
ISMS-2002-OFI-02	Ergonomics record keeping
ISMS-2002-OFI-03	Software qualify for some activities
ISMS-2002-OFI-04	QA review of work orders
ISMS-2002-OFI-05	Records management assessments
ISMS-2002-OFI-06	Explosives safety training
Areas Where Requirements Can be Implemented More Efficiently	
ISMS-2002-OFI-07	Implementation of QA requirements in Engineering processes
ISMS-2002-OFI-08	Construction Management process
ISMS-2002-OFI-09	Criticality Safety procedural and posting requirements
ISMS-2002-OFI-10	Implementation of Explosives Safety requirements
ISMS-2002-OFI-11	Hoisting and Rigging Equipment compliance inspections and testing
ISMS-2002-OFI-12	Industrial Safety processes
ISMS-2002-OFI-13	Maintenance organization
ISMS-2002-OFI-14	USQ process
ISMS-2002-OFI-15	Project Management reporting and performance measurement
ISMS-2002-OFI-16	Radiation worker training
ISMS-2002-OFI-17	Standardization of measurement and test equipment
ISMS-2002-OFI-18	Processing of foreign visits and assignments
ISMS-2002-OFI-19	Waste container management
Areas Where Implementation Behavior is Overly Conservative	
ISMS-2002-OFI-20	Lessons Learned database maintenance
ISMS-2002-OFI-21	Fabrication work control
ISMS-2002-OFI-22	Expedited work orders
ISMS-2002-OFI-23	Radiological surveys
ISMS-2002-OFI-24	Radiological PPE—use of scrubs
ISMS-2002-OFI-25	Use of waste type procedures

Table 4
Status of FY 2003 Performance Commitments

Number	Performance Commitment	Status	FY 2004¹ Commitment
ISMS-2002-PC-1	Maintain ISO 14001 Registration for EMS.	Complete	Yes
ISMS-2002-PC-2	Disclose self-identified Environmental Compliance issues.	Complete	No
ISMS-2002-PC-3	Implement Pollution Prevention and Energy Efficiency actions.	Partially Complete	Yes
ISMS-2002-PC-4	Complete scheduled Enforceable Environmental Milestones.	Complete	Yes
ISMS-2002-PC-5	Complete scheduled actions in the EM Accelerated Cleanup Plan.	Complete	Yes
ISMS-2002-PC-6	Complete scheduled actions in the Chemical Management System Work Plan.	Complete	Yes
ISMS-2002-PC-7	Maintain VPP Star status.	Complete	Yes
ISMS-2002-PC-8	Complete scheduled actions in PLN-489.	Complete	Yes
ISMS-2002-PC-9	Develop and implement actions to improve Safety Basis implementation.	Complete	Yes
ISMS-2002-PC-10	Develop and implement actions to improve Conduct of Operations performance.	Complete	Yes
ISMS-2002-PC-11	Develop and implement actions to improve Conduct of Maintenance performance.	Partially Complete	Yes
ISMS-2002-PC-12	Develop and implement actions to improve ISMS implementation for Subcontractor activities.	Partially Complete	No
ISMS-2002-PC-13	Complete planned actions to implement INPO Human Performance Management.	Complete	Yes
ISMS-2002-PC-14	Implement the Integrated Quality Assurance Management System project.	Complete	No
ISMS-2002-PC-15	Complete planned actions to improve the efficiency and effectiveness of assessments.	Partially Complete	Yes
ISMS-2002-PC-16	Complete planned actions to improve performance in Issues Management.	Partially Complete	Yes
ISMS-2002-PC-17	Complete planned actions to improve the Performance Measurement Program.	Complete	No
ISMS-2002-PC-18	Complete planned actions for implementation of SBMS.	Complete	No

1. Some commitments have been combined for FY 2004.

Table 5
Status of FY 2003 Performance Measures

Measure	Status		
	FY 2001	FY 2002	FY 2003
Environmental Compliance			
Reportable Releases	6	1	0
Environmental Compliance Violations Index	0.07	0.04	0.0025
Completion of Enforceable Milestones	Completed	Completed	Completed
- VCO	Completed	Completed	Completed
- FFA/CO	Completed	Completed	Completed
- Site Treatment Plan	Completed	Completed	Completed
- Settlement Agreement	Completed	Completed	Completed
Pollution Prevention			
- Hazardous Waste Reduction	Achieved	Achieved	Achieved
- Radioactive Waste Reduction	Achieved	Achieved	Achieved
- Mixed Waste Reduction	Achieved	Achieved	Achieved
- Sanitary Waste Recycled	Achieved	Achieved	Achieved
- SARA 313 Releases	Achieved	Achieved	Achieved
Energy Efficiency			
- Energy Consumption	Achieved	Achieved	Achieved
- Petroleum Consumption	Not Achieved	Achieved	Not Achieved
- Alternative Fuel Usage	Not Achieved	Not Achieved	Not Achieved
Safety and Health			
Total Recordable Case Rate	2.58	1.61	1.22
Day Away Case Rate	NA	0.30	0.38
Radiological Performance Index	0.61	0.43	0.64
Radiation Exposure Control	Achieved	Achieved	Achieved
Radiation Dose to the Public	2.54	NA	NA
Occurrences			
Reportable Occurrences	143	103	105
Near Misses	28	13	19
Safety Basis Violations	8	14	5
Performance Assurance			
Completed Assessments	NA	NA	87%
Externally Identified Issues	27%	25%	11%
Recurring Issues	NA	NA	NA
Overdue Corrective Actions	NA	17	7

Table 6
Status of FY 2002 ISMS Evaluation Issues

Process	Issue Number	Issue	Status	Report Section	
Infrastructure	ISMS-2002-01	Revision of ES&H Infrastructure Maintenance process	Closed	3.1.1	
R2A2s	ISMS-2002-02	R2A2s for System Engineers and SSC Engineers	Closed	3.1.2	
	ISMS-2002-03	R2A2s for radiography operations	Closed	3.1.2	
	ISMS-2002-04	RadCon ownership of fixed radiological instrumentation program	Closed	3.1.2	
	ISMS-2002-05	Maintenance of organization charts on home page	Open	3.1.2	
Personnel Selection, Training, and Qualification	ISMS-2002-06	Inappropriate use of training as corrective action.	Closed	3.1.3	
	ISMS-2002-07	Required training not being completed	Closed	3.1.3	
	ISMS-2002-08	Terminated employees not removed from TRAIN	Closed	3.1.3	
	ISMS-2002-09	Excessive number of trained Records Coordinators	Closed	3.1.3	
	ISMS-2002-10	Requirements management training	Closed	3.1.3	
	ISMS-2002-11	Nonnuclear facility managers training/qualification	Closed	3.1.3	
	ISMS-2002-12	Training and qualification for CTRs, STRs CFEs, and CCs	Closed	3.1.3	
	ISMS-2002-13	Additional radiological training for WGS personnel	Closed	3.1.3	
	ISMS-2002-14	Workstation training and qualification in S&CL	Closed	3.1.3	
	ISMS-2002-15	Lack of Information Management training upgrades	Open	3.1.3	
Requirements Management	ISMS-2002-16	T&Q implementation for Environmental Monitoring personnel	Closed	3.1.3	
	ISMS-2002-17	Lessons learned system training upgrades	Closed	3.1.3	
	ISMS-2002-18	Modification of Workplace Substance Abuse Program	Closed	3.1.4	
	ISMS-2002-19	Implementation of DOE Order 420.1A (Facility Safety)	Open	3.1.4	
	ISMS-2002-20	Implementation of DOE Order 433.1 (Maintenance)	Open	3.1.4	
	ISMS-2002-21	Implementation of two requirements in DOE Order 5480.19	Open	3.1.4	
	ISMS-2002-22	Implementation of 10CFR830 for Transportation and Crit. Safety	Closed	3.1.4	
	ISMS-2002-23	Implementation of DOE Order 461.1 for SNM & nuclear explosives	Closed	3.1.4	
	ISMS-2002-24	Implementation of ACGIH TLVs for heat and cold stress	Closed	3.1.4	
	ISMS-2002-25	Modification of MCP-190 for contract change	Closed	3.1.4	
Facility Safety	ISMS-2002-26	Authorization Agreements document type not in MCP-135	Closed	3.1.4	
	ISMS-2002-27	Organizations not managing records in accordance with MCP-135	Open	3.1.4	
	ISMS-2002-28	PLNs being used to implement explosives safety requirements	Closed	3.1.4	
	ISMS-2002-29	Authorization Agreements not updated as required	Closed	3.1.5	
	Activity Level HIAC	ISMS-2002-30	Use of HIAC processes for transport of explosives	Closed	3.1.6
		ISMS-2002-31	HIAC implementation weaknesses	Closed	3.1.6
	Assessment Program	ISMS-2002-32	Required assessments not performed (3 areas)	Closed	3.1.8
		ISMS-2002-33	Records Management assessments not scheduled	Closed	3.1.8
		ISMS-2002-34	Criticality Safety assessment reports not completed and issued	Closed	3.1.8
	Issues Management	ISMS-2002-35	Assessment findings not entered into ICARE	Closed	3.1.9
ISMS-2002-36		Inadequate and ineffective corrective actions	Closed	3.1.9	
ISMS-2002-37		PEC corrective actions changes	Closed	3.1.9	
ISMS-2002-38		Inadequacies in PAAA noncompliance screening	Closed	3.1.9	
ISMS-2002-39		Significant decline in reported safety concerns	Closed	4.7	
Environmental Management System	ISMS-2002-40	More focus needed on closure of environmental issues	Closed	3.1.9	
	ISMS-2002-41	Reduction of errors in environmental reports	Closed	4.6.1	
	ISMS-2002-42	Inclusion of MACT for HAPs in Title V Air Permit	Closed	4.6.1	

Table 7
Status of FY 2002 ISMS Evaluation
Areas for Improvement

Issue Number	Area for Improvement	Status
ISMS-2002-AFI-1	Safety Bases Implementation	Closed
ISMS-2002-AFI-2	Conduct of Operations	Closed
ISMS-2002-AFI-3	Conduct of Maintenance	Closed
ISMS-2002-AFI-4	ISMS Implementation for Subcontractor Activities	Closed
ISMS-2002-AFI-5	Quality Assurance Program Implementation	Closed
ISMS-2002-AFI-6	Efficiency and Effectiveness of Assessments	Closed
ISMS-2002-AFI-7	Corrective Action Management	Closed
ISMS-2002-AFI-8	Performance Measurement System Effectiveness	Closed

Table 8
Status of FY 2002 ISMS Evaluation
Focused Training

Issue Number	Focused Training	Status
ISMS-2002-FT-1	R2A2s for FSMs and SMEs	Open
ISMS-2002-FT-2	Safety Bases Implementation	Closed
ISMS-2002-FT-3	Conduct of Operations	Closed
ISMS-2002-FT-4	Conduct of Maintenance	Closed
ISMS-2002-FT-5	Human Performance Management	Closed
ISMS-2002-FT-6	ISMS Implementation for Subcontractor Activities	Closed
ISMS-2002-FT-7	Industrial Hygiene	Closed
ISMS-2002-FT-8	Radiological Controls	Closed
ISMS-2002-FT-9	Performing Assessments	Closed
ISMS-2002-FT-10	Issues Management	Closed
ISMS-2002-FT-11	Performance Measurement and Analysis	Closed
ISMS-2002-FT-12	Quality Assurance	Closed

**Table 9
FY 2003 FEB Results**

Evaluation Area	Site Area							INEEL Average
	CFA/IFF	INTEC	TAN	RWMC	SMC	TRA	WROC	
ISMS Module	Average	Average	Average	Not Graded	Not Graded	Average	Average	Average
Conduct of Maintenance	Above Average	Average	Below Average	Not Graded	Not Graded	Average	Below Average	Average
Quality Rule	Above Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
Environmental Protection and VCO	Above Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
Industrial Safety and Health	Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
GIOI/CO ₂	Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
Facility Housekeeping and Storage	Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
Overall Grade (FY 2003)	Average	Average	Average	Not Graded	Not Graded	Above Average	Average	Average
Overall Grade (FY 2002)	Average	Average	Above Average	Average	Above Average	Below Average	Above Average	Average
Overall Grade (FY 2001)	Above Average	Average	Average	Average	Average	Above Average	Average	Average

Table 10
DOE-OA Inspection Findings

Number	ES&H Findings
OA-2003-ESH-01	Idaho Operations Office (ID) and Bechtel BWXT Idaho, LLC (BBWI) have not ensured that the Idaho National Engineering and Environmental Laboratory (INEEL) unreviewed safety question process is effectively designed and implemented.
OA-2003-ESH-02	The level of rigor and formality applied to radiological hazards analyses at the Building 616 decontamination and decommissioning project was not sufficient to demonstrate that all relevant radiological hazards were clearly analyzed and that corresponding controls were adequate.
OA-2003-ESH-03	MCP-3571, "Independent Hazard Review," and other related documents do not sufficiently document INEEL Research Center management expectations for some elements of planning and conducting research to ensure a consistent and adequate level of hazard review commensurate with the hazard and the complexity of the work being performed.
OA-2003-ESH-04	Idaho Nuclear Technology and Engineering Center and Test Area North field supervision and safety professionals have not ensured that work activities are performed within established hazard controls and requirements listed in work packages.
OA-2003-ESH-05	Some potential accidents and accident phenomena have not been adequately analyzed and documented to provide assurance that Advanced Test Reactor (ATR) safety systems are capable of mitigating loss-of-coolant accidents in accordance with the ATR updated final safety analysis report (UFSAR).
OA-2003-ESH-06	The U.S. Department of Energy (DOE) has not supported and BBWI has not implemented an effective configuration control program to ensure that the ATR design meets all technical and procedural requirements as required by PRD-115, "Configuration Management."
OA-2003-ESH-07	BBWI has not established a technically adequate surveillance program for testing the operability of the ATR firewater pumps as required by technical safety requirement (TSR) limiting conditions for operations (LCO) 3.2.1.2, surveillance requirement 4.2.1.2.8, and UFSAR Chapter 14.
OA-2003-ESH-08	BBWI has not implemented the American Society for Mechanical Engineering (ASME) Section XI inspection requirements for the Emergency Firewater Injection System check valves specified in the in-service inspection plan referenced in UFSAR Chapter 14.
Number	Emergency Management Findings
OA-2003-EM-01	BBWI has not ensured that all hazardous materials are identified and assessed for potential impact on site workers and the public, as required by DOE Order 151.1A, "Comprehensive Emergency Management System."
OA-2003-EM-02	BBWI has not fully analyzed an appropriate spectrum of emergency events and conditions; assessed available indicators of barrier failures for use in emergency action levels (EALs); or appropriately determined the extent of emergency planning zones, as required by DOE Order 151.1A.
OA-2003-EM-03	Many BBWI EALs do not contain an appropriate set of measurable implementation thresholds that ensure that event classifications are timely and accurate, as required by DOE Order 151.1A.

Table 11
DOE-OA Inspection ES&H Opportunities for Improvement

Number	Opportunities for Improvement
OA-2003-OFI-ESH-01	Evaluate and revise the USQ process.
OA-2003-OFI-ESH-02	Continue to strengthen self-assessment performance and hold line management accountable for effective implementation.
OA-2003-OFI-ESH-03	Improve compliance with implementation of the issues management system.
OA-2003-OFI-ESH-04	Improve the rigor and formality in implementing the lessons-learned program.
OA-200-053-OFI-ESH	Strengthen the documentation of the R&D IHR process to include additional instructions and guidance for researchers and to document management expectations for R&D work control.
OA-2003-OFI-ESH-06	Review the effectiveness of the Industrial Hygiene exposure assessment process as defined in MCP-153.
OA-2003-OFI-ESH-07	Conduct a review of Radiological Control requirements for current and planned RWPs within INTEC.
OA-2003-OFI-ESH-08	Increase emphasis on rigor and formality associated with radiological work planning and control to ensure that a documented and justifiable technical basis for radiological decision-making is maintained.
OA-2003-OFI-ESH-09	Increase attention on ensuring adequate task breakdown and linkage between hazards and controls in work order work packages, consistent with STD-101.
OA-2003-OFI-ESH-10	Establish uniform site standards and requirements for line management to follow regarding confirmatory/job-specific bioassays for groups of radiological workers who are exposed to high hazards but are not required to participate in a routine bioassay program.
OA-2003-OFI-ESH-11	Improve programs and practices associated with scaffold erection and inspection at INEEL.
OA-2003-OFI-ESH-12	Enhance worker safety provisions and supervisory and worker adherence to controls.
OA-2003-OFI-ESH-13	Establish and implement a plan to confirm the adequacy of the ATR safety design.
OA-2003-OFI-ESH-14	Enhance the configuration management program.
OA-2003-OFI-ESH-15	Upgrade the existing industry experience review program.
OA-2003-OFI-ESH-16	Establish a program of periodic technical self-assessments of essential system functionality for selected systems that includes detailed assessment of parameters, assumptions, and authorization bases.
OA-2003-OFI-ESH-17	Strengthen the EFIS and the LOCA PCP shutoff system surveillance and test program.
OA-2003-OFI-ESH-18	Enhance the PM program to improve the reliability of important components.
OA-2003-OFI-ESH-19	Enhance operations procedures to improve usability.

Table 12
DOE-OA Inspection EM Opportunities for Improvement

Number	Opportunities for Improvement
OA-2003-OFI-EM-01	Improve the hazards survey/hazards assessment development and maintenance procedures by providing additional specificity to important process attributes.
OA-2003-OFI-EM-02	Enhance the quality of hazards surveys and HAs by including additional details and assumptions.
OA-2003-OFI-EM-03	Consider computing “surrogate” threshold planning quantities (i.e., determining the amount of hazardous material required to adversely impact worker/public health) for materials of concern that do not have published threshold quantities and listing them in ICMS.
OA-2003-OFI-EM-04	Enhance EALs and integrate them with procedures to make them a more effective emergency response tool.
OA-2003-OFI-EM-05	Cross-walk emergency management documents to ensure clear and consistent statements of roles and responsibilities.
OA-2003-OFI-EM-06	Identify, within EPIs or response checklists, the methods to be used by EAMs, ECs, and emergency directors when reviewing or determining event categorization and classification while offsite.
OA-2003-OFI-EM-07	Revise consequence assessment procedures and checklists to further define roles and responsibilities and assist assessment specialists in ensuring appropriate data is obtained and exchanged between NOAA and BBWI.
OA-2003-OFI-EM-08	Strengthen the initial training and requalification programs.
OA-2003-OFI-EM-09	Enhance the effectiveness and efficiency of the drill program by expanding the scope of participating organizations and establishing additional formality in some elements.
OA-2003-OFI-EM-10	Ensure that all elements of the emergency management program are evaluated over a multi-year period by increasing the scope of events evaluated by the exercise program.
OA-2003-OFI-EM-11	Conduct evaluated tabletop performance tests that involve postulated event scenarios having progressive facility/event degradation to focus on sequential usage of emergency action levels. Consider incorporating tabletop performance tests into the BBWI drill program.
OA-2003-OFI-EM-12	Enhance emergency response by implementing a consistent use of maps and related tools at all venues.
OA-2003-OFI-EM-13	Improve the usability of EALs in a high-stress environment.
OA-2003-OFI-EM-14	Improve the thoroughness and timeliness of consequence assessment support by emphasizing management expectations for use of procedures and checklists.
OA-2003-OFI-EM-15	Establish a minimum set of requirements for using work group tasks for tracking self-assessment items. The goal should be to provide a consistent approach, define expectations, and minimize the administrative burden for items that need to be tracked but do not meet the threshold of an ICARE “issue.”
OA-2003-OFI-EM-16	Update the discussion of exemptions in the Emergency Readiness Assurance Plan to reflect only those issues that are actual deviations from DOE policy.

Table 13
FY 2003 ISMS Evaluation
Areas for Improvement

Issue Number	Areas for Improvement
ISMS-2003-AFI-01	USQ process design and implementation
ISMS-2003-AFI-02	Safety basis implementation
ISMS-2003-AFI-03	Quality assurance program implementation
ISMS-2003-AFI-04	Industrial Safety
ISMS-2003-AFI-05	Conduct of Operations
ISMS-2003-AFI-06	Conduct of Maintenance
ISMS-2003-AFI-07	Procedural compliance
ISMS-2003-AFI-08	Assessment performance
ISMS-2003-AFI-09	Causal analysis
ISMS-2003-AFI-10	Corrective action management
ISMS-2003-AFI-11	Lessons Learned formalization

Table 14
FY 2003 ISMS Evaluation
Areas for Focused Training

Issue Number	Areas for Improvement
ISMS-2003-AFT-01	Safeguards and Security
ISMS-2003-AFT-02	Fire Department
ISMS-2003-AFT-03	Explosives Safety
ISMS-2003-AFT-04	USQ Process
ISMS-2003-AFT-05	Nuclear Safety Analysis
ISMS-2003-AFT-06	Nonnuclear Safety Analysis
ISMS-2003-AFT-07	Criticality Safety
ISMS-2003-AFT-08	Records Management
ISMS-2003-AFT-09	Chemical Management
ISMS-2003-AFT-10	Construction Management
ISMS-2003-AFT-11	Project Management
ISMS-2003-AFT-12	Conduct of Maintenance
ISMS-2003-AFT-13	Conduct of Operations
ISMS-2003-AFT-14	Conduct of Engineering
ISMS-2003-AFT-15	Suspect/Counterfeit Item Control
ISMS-2003-AFT-16	Assessment Performance
ISMS-2003-AFT-17	Corrective Action System
ISMS-2003-AFT-18	Lessons Learned System
ISMS-2003-AFT-19	Performance Measurement and Analysis
ISMS-2003-AFT-20	Human Performance Management

Table 15
FY 2004 Performance Objectives

Number	Performance Objective
ISMS-2004-PO-1	Achieve operational excellence to enable accelerated site cleanup and enhance the laboratories ability to execute its research and development mission.
ISMS-2004-PO-2	Maintain and continuously improve the Integrated Safety Management System.
ISMS-2004-PO-3	Continuously improve safety performance.
ISMS-2004-PO-4	Achieve and maintain full environmental regulatory compliance.
ISMS-2004-PO-5	Meet commitments to compliance agreements on schedule, within costs, and, as appropriate, through integration of science and technology.
ISMS-2004-PO-6	Complete clean up of legacy contamination.
ISMS-2004-PO-7	Conduct operations so as to conserve natural resources and minimize environmental impacts and thereby achieve DOE pollution prevention and energy efficiency goals.
ISMS-2004-PO-8	Implement and maintain a compliant Quality Assurance program that promotes employee and management participation and strives for continuous improvement.

Table 16
FY 2004 Performance Measures

Area	Performance Measure
Environmental Compliance	Reportable Releases to the Environment
	Externally Identified Environmental Deficiencies
	Enforceable Milestones – FFA/CO, NOV/CO, and VCO
	Site Treatment Plan Milestones
	Settlement Agreement Milestones
Pollution Prevention	Hazardous Waste Generation
	Radioactive Low-Level Waste Generation
	Mixed Low-Level Waste Generation
	Sanitary Waste Recycling
	SARA 313 Chemical Usage
Energy Efficiency	Energy Consumption
	Petroleum Consumption
	Alternative Fuel Usage
Occupational Safety and Health	Date Away Case Rate
	First Aid Case Rate
	Recordable Case Rate
	Total Case Incidence Rate
	Exposures Exceeding TLVs and PELs
	Construction Safety Violations Index
	Fire Protection Systems Maintenance
Radiological Safety	Radiological Performance Index
	Radiation Exposure and Dose Management
	Radiation Dose to the Public
Assessments	Completion of Scheduled Assessments
	Issues Identified by Assessment (%)
	Externally Identified Issues (%)
Issues	Reportable Occurrences
	Near Miss Occurrences
	Safety Basis Violations
	Work Control Occurrences
	Work Control Recordable Cases
	PAAA Noncompliances
	PAAA Reportable Noncompliances
	Significant Deficiencies
	Adverse Deficiencies
	Nonconformances
	Safety Concerns
	Other Issues
	Recurring Issues
Issues Management	Extensions of Issues Closure
	On Time Closure of Issues
	Late Closure of Issues
	Average Time to Closure of Issues
	Average Age of Open Issues
	Lessons Learned Identification and Implementation
Maintenance	Backlog of Maintenance and Repair
	Preventive Maintenance Completion Rate
	Work Order Mean Time to Repair

Table 17
FY 2004 Performance Commitments

Number	Performance Commitment
ISMS-2004-PC-1	Maintain ISO 14001 Registration for EMS.
ISMS-2004-PC-2	Implement Pollution Prevention and Energy Efficiency actions.
ISMS-2004-PC-3	Complete scheduled Enforceable Environmental Milestones.
ISMS-2004-PC-4	Complete scheduled actions in the EM Accelerated Cleanup Plan.
ISMS-2004-PC-5	Implement improvements in Chemical Services
ISMS-2004-PC-6	Develop/implement actions to improve Quality Assurance implementation.
ISMS-2004-PC-7	Maintain VPP Star status.
ISMS-2004-PC-8	Develop/implement actions to improve Safety Basis implementation.
ISMS-2004-PC-9	Develop/implement actions to improve Conduct of Operations performance.
ISMS-2004-PC-10	Develop/implement actions to improve Conduct of Maintenance performance.
ISMS-2004-PC-11	Develop/implement actions to implement Human Performance Management.
ISMS-2004-PC-12	Develop/implement actions to reduce near misses and work control occurrences.
ISMS-2004-PC-13	Implement actions to address DOE-OA Inspection Findings.
ISMS-2004-PC-14	Evaluate/implement DOE-OA Inspection opportunities for improvement.
ISMS-2004-PC-15	Evaluate/implement Functional Support Area opportunities for improvement.
ISMS-2004-PC-16	Develop a contract requirements management process.
ISMS-2004-PC-17	Develop a risk-based performance assurance system.
ISMS-2004-PC-18	Complete planned actions to improve Feedback and Improvement processes.