



Office of Science  
Chicago Office

## Integrated Safety Management System Description

October 2007

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## Management Commitment to Safety

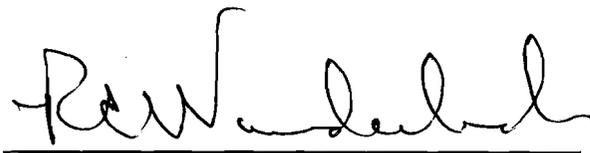
This document describes the Department of Energy (DOE) Office of Science (SC) Chicago Office (CH) Integrated Safety Management (ISM) System. The SC-CH ISM System (ISMS) Description implements the requirements delineated in DOE P 450.4, *Safety Management System Policy*, and DOE M 450.4-1 *Integrated Safety Management System Manual*. The SC-CH ISMS Description (ISMSD) continues the flow-down of the DOE ISM requirements from the Department's Directives to the SC ISMS Program Description to the work of SC-CH. In ISM, the term safety is used synonymously with environment, safety, and health (ES&H) to encompass protection of the public, the workers, and the environment.

The ISMS defined in this document has two major components. The first component applies to the safety and health of all SC-CH federal employees, and the second component applies to the work of SC-CH staff members who carry out the line management oversight role for the New Brunswick Laboratory (NBL), a government-owned government-operated nuclear analytical chemistry laboratory located on the Argonne National Laboratory site.

Safety is a component of every SC-CH employee's work activity, regardless of whether their work is performed exclusively in the offices of SC-CH, or takes them to various laboratory sites to provide services to the SC Site Offices, or requires them to perform oversight of work activities at NBL. The Department's ISM principles and functions, as delineated in DOE P 450.4 are applicable to, and must be incorporated into, all aspects of our work, including but not limited to defining expectations for work, work planning, budget formulation, finance and accounting, contracts management, authorizing work, evaluating work through field oversight, and improving work processes and products. The ultimate objective of SC-CH management and the fundamental premise of the SC-CH ISMS are to **Do Work Safely**.

The core functions of the Department's ISM policy are built upon the classic Plan-Do-Check-Act quality cycle developed many decades ago by the renowned Dr. W. Edwards Deming. These quality-based elements of ISM are, of course, also embodied in the Department's QA Directive DOE O 414.1C. Therefore, ISM and QA are fully compatible. The SC-CH ISMSD promotes the full inclusion and integration of environment, safety, health, and quality assurance into the totality of work, such that it is an integral part of the whole—not a standalone program.

My objective and the fundamental premise of ISM at SC-CH are to set up a system for planning and identifying controls which enable us to accomplish our work safely. There is no more important goal. I fully endorse the SC-CH ISMSD, and expect every employee of SC-CH to understand and apply the Department's ISM principles and functions in our work. We have several ISM experts in our Office of Safety, Technical and Infrastructure Services; you are encouraged to contact them if you have any questions regarding ISM or this ISMSD.



Robert C. Wunderlich, Manager  
Office of Science – Chicago Office

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## Acronyms

AAR	Annual Assessment Report
ACQ	Office of Acquisition and Assistance
AMS	Assistant Manager for Science (SC-OR)
AMSO	Ames Site Office
ANL	Argonne National Laboratory
APP	Annual Performance Plan
ASO	Argonne Site Office
BHSO	Brookhaven Site Office
BSO	Berkeley Site Office
CF	Core Function
CSEA	Cyber Security and Enterprise Architecture
DDFO	Deputy Director for Field Operations
DEAR	Department of Energy Acquisition Regulations
DOE	Department of Energy
EMS	Environmental Management System
ES&H	Environment, Safety and Health
FEOSH	Federal Occupational Safety and Health
FR	Facility Representative
FRAM	Functions, Responsibilities, and Authorities Manual
FSO	Fermi Site Office
GOGO	Government-Owned, Government-Operated
GP	Guiding Principle
IAS	Integrated Assessment Schedule
IM	Issues Management
ISC	Integrated Support Center
ISM	Integrated Safety Management
ISMSD	Integrated Safety Management System Description
LD	Local Directives
LL	Lessons Learned
LOO	Letter of Obligation
LPE	Office of Laboratory Policy Evaluation

M	Manual
MEO	Most Efficient Organization
M&O	Management and Operating
NBL	New Brunswick Laboratory
OV	Oversight
P	Policy
PNSO	Pacific Northwest Site Office
PSO	Princeton Site Office
PP	Performance Plans
PEMP	Performance Evaluation and Measurement Plan
QA	Quality Assurance
QAP	Quality Assurance Program
SC	Office of Science
SC-CH	Office of Science Chicago Office
SC-OR	Office of Science Oak Ridge Office
SCMS	Office of Science Management System
SME	Subject Matter Expert
SSI	Office of Safety, Security and Infrastructure
SSO	Stanford Site Office
STS	Safety and Technical Services
STSM	Senior Technical Safety Manager
TJSO	Thomas Jefferson Site Office
TQP	Technical Qualification Program

## Introduction

The Office of Science (SC) Chicago Office (SC-CH), together with the SC Oak Ridge Office (SC-OR), comprise the SC Integrated Support Center (ISC). The ISC provides a broad range of technical and administrative services to the SC Site Offices as well as to SC headquarters. This includes technical services in the areas of environment, safety and health (ES&H), quality assurance (QA), and Integrated Safety Management (ISM). In this role of support/service provider, SC-CH does not have line management responsibilities and authorities. The SC-CH does not have direct responsibility for the management and oversight of operations at Department of Energy (DOE) sites/facilities. Within SC, line management responsibility/authority for SC sites is vested with the SC Site Offices. Therefore the SC Site Offices are responsible for performing line management oversight of the activities and facilities of the SC management and operating (M&O) contractors.

In addition to the role of service provider for the SC Site Offices and SC headquarters, the SC Deputy Director for Field Operations (DDFO) has delegated line management responsibility and authority for New Brunswick Laboratory (NBL) to the SC-CH Manager. NBL is a government-owned, government-operated (GOGO), hazard category 2 nuclear facility whose mission is to serve as the Nation's nuclear materials standards laboratory. As an operating nuclear analytical chemistry laboratory, NBL must implement the ISM/ES&H requirements contained in DOE Directives that are written for application to M&O contractors, even though the NBL staff are federal employees rather than contractors. In carrying out this delegated responsibility and authority from the SC DDFO, SC-CH essentially serves as the SC Site Office for NBL. Therefore, regarding ISM/ES&H, SC-CH communicates ISM/ES&H expectations to NBL; reviews and approves various ISM, ES&H, and QA management systems and safety basis documents of NBL; and conducts oversight of NBL to evaluate the effectiveness of ISM/ES&H implementation by NBL.

DOE M 450.4-1, *Integrated Safety Management System Manual*, recognizes field offices to include those DOE entities with direct management and oversight of operational activities performed at GOGO facilities. Furthermore, DOE M 450.4-1 requires field offices to develop and maintain an approved Integrated Safety Management System Description (ISMSD) that is complete, accurate and up-to-date. The SC-CH ISMSD was written to address the line management responsibility and authority delegated by the SC DDFO to the SC-CH Manager.

### 1.0 Purpose and Objective

The purpose of the SC-CH ISMSD is to describe how the requirements of DOE M 450.4-1 are applied to the work of SC-CH in its role of SC line management for NBL. SC-CH provides for the safety and health of its employees who carry out the ISC functions by maintaining and implementing the SC-CH Federal Employee Occupational Safety and Health (FEOSH) program. The SC-CH FEOSH program employs the DOE ISM Guiding Principles and Core Functions.

The objective of developing and maintaining this ISMSD is much more than a simple paper exercise whereby SC-CH identifies activities and processes being accomplished to fulfill ISM principles and functions. Rather, it is intended to spur real and continuous improvement of ISM implementation. All levels of SC-CH management, as well as individual contributors, understand the value of integrated safety management and are engaged to sustain and improve this program.

## **2.0 Overview of the ISM System**

The SC-CH ISMSD is consistent with established DOE safety directives and the SC approach to ISM as described in the SC Management System (SCMS). It is the primary document that describes how SC-CH implements the SC line management authority to ensure that work at NBL is accomplished in a safe and environmentally sound manner. Other SC-wide and SC-CH documents and processes work in concert with the SC-CH ISMSD. The SC-CH ISMSD is integrated with the SC-CH Quality Assurance Program (QAP), the SC-CH Functions, Responsibilities and Authorities Manual (FRAM), and SCMS.

There are nineteen Management Systems within the SCMS; in particular the Management Systems for ES&H, Requirements Management, and QA & Oversight are key elements in SC-CH implementation of Departmental ISM requirements. The SC-CH ISMSD is also integrated within other SC-CH business processes for work definition and planning, budgeting, authorization, execution, financial management, performance measurement, and performance evaluation.

The SC-CH ISMSD describes the ISM/ES&H processes implemented by SC-CH employees in executing the line management oversight of NBL. It does not apply to the NBL employees. As an operating laboratory, NBL maintains and implements its own ISMSD.

SC-CH does not possess its own Environmental Management System (EMS) pursuant with DOE O 450.1, *Environmental Protection Program*. As site occupants of Argonne National Laboratory (ANL), as a minimum, SC-CH is obligated to the applicable requirements set forth in the ANL ES&H Manual. These ANL requirements are supplemented through SC-CH ES&H requirements that specifically address work performed by SC-CH employees.

## **3.0 Management Expectations**

For its management of the M&O Contractors that operate the SC Government-Owned, Contractor-Operated Laboratories, SC has developed a mechanism known as the Performance Evaluation and Measurement Plan (PEMP). The PEMP is used to annually establish and convey SC expectations, expressed as performance objectives, goals, and measures, in a broad range of performance areas including ISM/ES&H. The PEMP is part of the contract between DOE and

an M&O contractor. The process for implementing the PEMP is detailed in the SCMS Management System for Management and Operating Contracting ([http://scms.sc.doe.gov/orbitsearch/MSD/MOC/MOC\\_MS.cfm](http://scms.sc.doe.gov/orbitsearch/MSD/MOC/MOC_MS.cfm)).

Because of the Site Office/contractor type relationship existing between SC-CH and NBL, with NBL functioning as the contractor, SC-CH has adapted the PEMP process to its line management of NBL. The SC-CH Manager and Deputy Manager convey the ISM/ES&H-related performance expectations (as well as expectations in numerous other areas of operations, business, and science performance) to the NBL Director using a PEMP. NBL management periodically reports to SC-CH management on laboratory progress/status at meeting those expectations.

Similarly, an annual PEMP-type process is used to establish and convey SC and SC-CH expectations, expressed as performance objectives, goals, and measures, in a broad range of performance areas including ES&H. Annual guidance<sup>1</sup> is issued by the SC DDFO for the preparation of an Annual Performance Plan (APP) and Annual Assessment Report (AAR) ([http://scms.sc.doe.gov/OrbitSearch/LD/FOPP/FOPP\\_LD.cfm](http://scms.sc.doe.gov/OrbitSearch/LD/FOPP/FOPP_LD.cfm)) to all SC DDFO organizational elements (see Figure 1).

The SC-CH Annual Plan refines these expectations; translating them into distinct organizational goals and measures and assigns them to specific SC-CH offices, as appropriate ([http://www.ch.doe.gov/html/site\\_info/organization\\_chart.htm](http://www.ch.doe.gov/html/site_info/organization_chart.htm)). The SC-CH Annual Performance Plan for fiscal year 2008 is available off the SC-CH Homepage (<http://www.ch.doe.gov/>). Inclusive in this annual plan, is the current workforce analysis and articulation of organizational staffing-related priorities; safety being one of the highest priorities of the office.

Safety-related performance expectations are mandated for all Departmental employees; from members of the Senior Executive Service, to other supervisors and managers, team leaders and all non-supervisory employees, regardless of position series or grade. There is a safety-related performance element in the individual performance plan for every SC-CH employee. Special emphasis safety-related expectations may be articulated in the DDFO AAP guidance or flowed down to the SC-CH Manager.

In addition to performance plans, safety-related training is included in appropriate Individual Development Plans. Safety-related training and expectations are further articulated in both the SC-CH FRAM and the Building 201 Federal Employee Worker Safety and Health Plan (also available off the SC-CH Homepage (<http://www.ch.doe.gov/>)).

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<sup>1</sup> This process is articulated in the SCMS QA & Oversight Management System ([http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL\\_MS.cfm](http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL_MS.cfm)) and will be fully codified in the Evaluation of SC Performance Subject Area which is expected to be published in the SCMS in mid-Fiscal Year 2008.

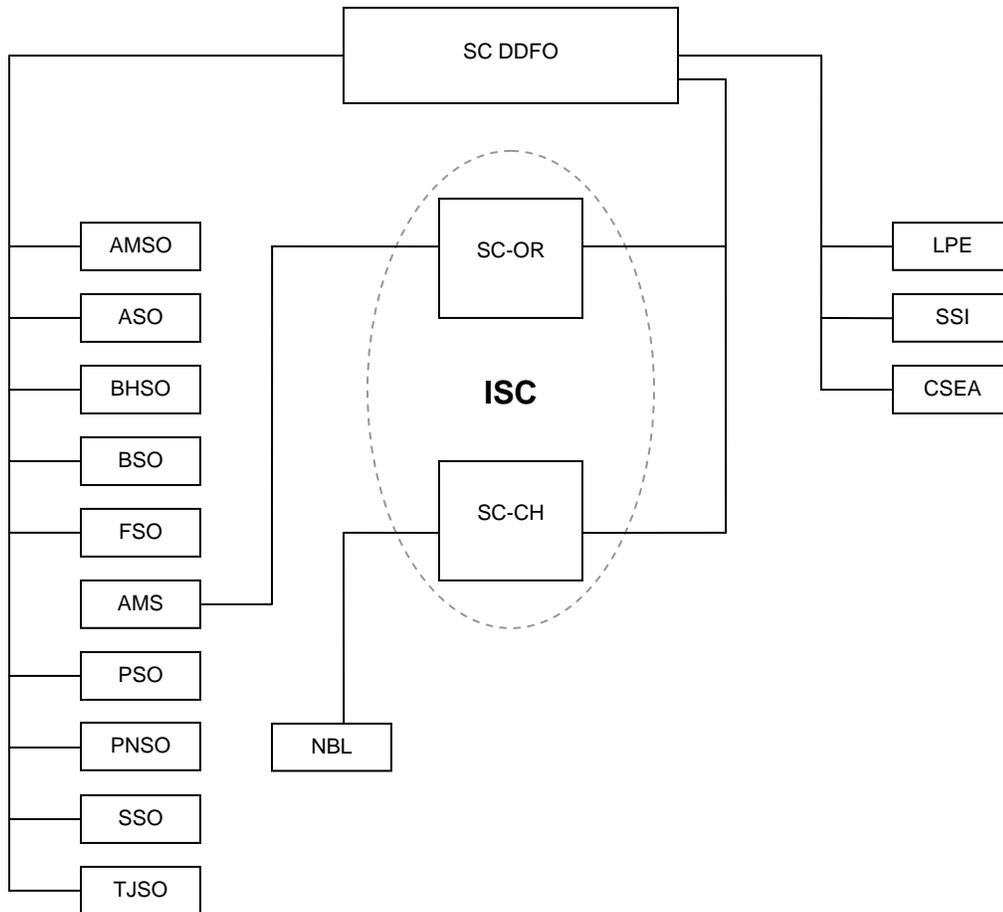


Figure 1, DDFO Organizational Elements

## 4.0 Roles and Responsibilities

### 4.1. Federal Line Management Responsibilities

DOE P 411.1, *Safety Management Functions, Responsibilities and Authorities Policy*, and DOE M 411.1-1C, *Safety Management Functions, Responsibilities, and Authorities Manual (FRAM)* identify the organizational functions and delegations for safety-related responsibilities within DOE. These directives, as well as other safety-related directives referenced therein, provide the high level framework for understanding the specific safety management requirements for DOE management and staff.

SC-CH maintains a FRAM at the SC-CH level to document the flow-down of the ISM/ES&H functions, responsibilities and authorities addressed in Table 6 of DOE M 411.1-1C, and the SC FRAM. The SC-CH FRAM identifies the ISM/ES&H-related authorities of, and delegated to, the SC-CH Manager. It identifies the responsibility assignments within SC-CH to carry out those authorities. Because of the Site Office/contractor type relationship existing between SC-CH and NBL, with NBL functioning as

the contractor, NBL is not expected to possess its own FRAM. The content that would typically be contained within a FRAM is instead captured by the NBL ISMSD.

#### 4.2 Government-Owned, Government-Operated Organization Responsibilities

NBL is a GOGO facility. It is not operated by a contractor; the NBL staff are federal employees. DOE ES&H and ISM Directives are written for the model of operations in which the DOE facility/site is operated by a contractor(s), while DOE administers the contract and conducts oversight to evaluate performance adequacy. The structure and responsibility assignments of the Directives reflect this model of operations. Therefore, as a GOGO facility at which potentially hazardous work is performed, NBL must interpret the ES&H and ISM Directives to determine which of the Directive requirements and responsibilities aimed at contractors also has applicability to NBL. SC-CH, through review and approval of key NBL management system documents as well as through the performance of oversight of NBL operations, ensures that appropriate interpretations of the applicability of Directives requirements to NBL have been established.

### 5.0 Implementation of ISM

SC-CH functions are “non-operational” work activities as defined in DOE M 450.4-1. That is, they do not involve hands-on work but rather include activities such as defining work scopes, allocating resources, reviewing and approving program documents (safety basis, the NBL ISMSD and annual ISM declarations, QAP, etc.), and conducting operational awareness activities (e.g. assessments, surveillances, and walkthroughs). While these activities are non-operational, they do include hazards associated with typical office environments (e.g., repetitive motion activities, uneven walking surfaces, use of electrical equipment, and office sanitation) as well as potential hazards associated with performing oversight activities at DOE and contractor facilities. Implementation of ISM for SC-CH work activities is addressed in the sections below. Through SC-CH oversight of NBL, SC-CH plays a critical role in assuring that ISM is effectively implemented at the NBL. The role of SC-CH oversight in the implementation of ISM is addressed in Section 5.3 below.

#### 5.1. Implementation of ISM Guiding Principles for SC-CH Work Activities

##### 5.1.1. Line Management Responsibility for Safety.

Line management responsibility for safety is delineated within the SC-CH FRAM. Attributes of this principle include, but are not limited to:

- SC-CH line management spends time touring the NBL facility with the DOE Facility Representative (FR) for NBL and SC-CH ES&H Subject Matter Experts (SMEs).

SC-CH managers practice visible leadership, coaching and mentoring SC-CH and NBL staff, ensuring any deviation is corrected promptly, and when appropriate, providing positive reinforcement. They encourage open, honest feedback and continuously look for opportunities to improve.

- SC-CH line managers maintain a strong and constant focus on conducting work safely. They are leading advocates of maintaining situational awareness, monitoring for adverse trends or indications, and taking prompt action to identify and understand underlying causes.
- SC-CH line management fosters a “just culture”. Understanding that people are fallible, when mistakes are made the management team seeks first to learn why it happened rather than to focus blame.

#### 5.1.2. Clear Roles and Responsibilities.

Organizational roles and responsibilities are defined in the SC-CH FRAM. Key attributes of this principle include, but are not limited to:

- All SC-CH personnel understand the importance of adherence to safety requirements.
- Reporting relationships, positional authority, staff capability, organizational processes, and financial resources are commensurate with and support fulfillment of assigned and delegated safety responsibilities.
- Responsibilities and authority for safety are well defined and clearly understood as integral part of performing work.

#### 5.1.3. Competence Commensurate with Responsibilities.

SC-CH ensures that its employees meet the competency requirements delineated in their position descriptions. Competency requirements of each position description are initially established during the hiring process, but are then periodically adjusted to account for changes of responsibility.

The DOE Technical Qualification Program (TQP) was established for standardizing the technical competencies of employees providing management oversight and guidance for DOE defense nuclear facilities, and whose actions and decisions could impact the safe operations of DOE defense nuclear facilities. At present SC

has one nuclear facility (Building 325 at the Pacific Northwest National Laboratory) under the purview of the Defense Nuclear Facilities Safety Board. On April 2, 2007, the SC DDFO required implementation of an SC Technical Qualification Program (TQP) at SC Sites with hazard category 1, 2, and 3 nuclear facilities. The SC TQP calls for those positions designated as a Senior Technical Safety Manager (STSM), FR, and others whose duties include overseeing nuclear facility safety to satisfy the corresponding DOE TQP requirements. SC-CH oversees nuclear facility safety at NBL, and provides technical support to the SC Argonne Site Office, Brookhaven Site Office, and Pacific Northwest Site Office for the safety oversight of their respective contractor's nuclear facilities.

SC-CH is currently progressing with the qualification of two STSMs, an NBL FR, and two nuclear engineers. SC-CH is also piloting a process for implementing the DOE TQP for its entire technical staff. This pilot will be evaluating the education, training, and professional experiences of selected SC-CH positions to assist in determining the resources necessary for assuring all SC-CH technical staff satisfy any applicable DOE TQP requirements associated with their responsibilities. All SC-CH qualifications are expected to be completed at the end of fiscal year 2008.

Key attributes of this principle include, but are not limited to:

- SC-CH maintains a highly knowledgeable staff in a broad range of technical and business management areas of expertise. Specialized expertise can be brought in from external sources when needed through technical support contractors.
- SC-CH encourages and provides training, professional certifications, and access to seminars to broaden individual capabilities and to support organization learning.
- SC-CH managers have strong technical and operational backgrounds to support managing a technical and diverse organization.
- SC-CH values continuous learning. SC-CH line managers set an example for safety through personal commitment and learning.

#### 5.1.4. Balanced Priorities.

SC-CH is committed to effectively allocate resources to address safety, mission, and operational considerations. Priorities and goals are documented in the SC-CH APP. The APP is prepared by

the Manager of an organizational element which establishes the performance expectations, organizational goals, objectives, measures, and commitments for that office for the upcoming year. The APP is prepared in accordance with the SCMS QA & Oversight Management System ([http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL\\_MS.cfm](http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL_MS.cfm)), along with any annual guidance from the SC DDFO.

Key attributes of this principle include, but are not limited to:

- SC-CH management has and continues to actively support funding of safety-related equipment (e.g., safety glasses, ergonomic chairs, etc.).
- SC-CH management consistently communicates the safety message.
- SC-CH has an active management-employee Safety Committee.

#### 5.1.5. Identification of Safety Standards and Requirements.

SC-CH evaluates its work to identify any associated hazards, and determines what safety standards/requirements should be implemented to protect the health and safety of the workers and the public, and protects the environment. Safety standards and requirements applicable to SC-CH employees are identified in the SC-CH FEOSH Program.

Key attributes of this principle include, but are not limited to:

- Applicable requirements from rules and regulations are identified and captured in processes.
- Compliance with applicable safety requirements is expected and verified. Willful violations of requirements are not tolerated, and personnel are held accountable.

SC-CH ACQ utilizes the expertise of SC-CH Safety and Technical Services to identify applicable ES&H-related clauses into contracts solicited for the provision of support services for NBL. Designated SC-CH ACQ Contracting Officers, and appointed SC-CH Contracting Officer Representatives monitor support service contractor implementation of identified ES&H requirements.

#### 5.1.6. Hazard Controls Tailored to Work Being Performed.

SC-CH evaluates hazards and tailors administrative controls to prevent and mitigate hazards. Safety standards and requirements applicable to SC-CH employees are identified in the SC-CH FEOSH Program, and/or applicable DOE safety standards.

Key attributes of this principle include, but are not limited to:

- SC-CH emphasizes that work be designed to reduce or eliminate the hazards and to prevent accidents and unplanned releases and exposures.
- SC-CH implements hazard controls that are consistent. Safety is embedded in day-to-day processes and procedures through a committed safety culture and functioning safety management program.
- Office equipment and building structure (e.g. file cabinets, chairs, and computers) are consistently maintained so that they meet design requirements.

#### 5.1.7. Operations Authorization.

Authorization to perform oversight activities is implicitly given through assignments made by SC-CH supervision and agreed to by staff. Prior to beginning work, employees undergo a new employee orientation process which informs them of site safety policies.

All SC-CH employees are afforded stop-work authority through both the SC-CH FEOSH Program and NBL operational procedures. Stop-work authority is to be invoked should any work condition or practice be recognized as unsafe, unhealthy, or detrimental to the environment. Likewise, all SC-CH employees are encouraged to immediately report observations of imminent danger<sup>2</sup> to the responsible line manager, to their immediate supervisor, or through the SC-CH Employee Concerns Program.

Authorizations pertaining to NBL nuclear operations are held by the SC Deputy Director for Field Operations.

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<sup>2</sup> Conditions or practices in a place of employment which are such that a danger exists which could reasonably be expected to cause death or serious physical harm to an individual or to the environment immediately or before the imminence of such danger can be eliminated.

## 5.2. Implementation of ISM Core Functions for SC-CH Work Activities

SC-CH is firmly committed to the five core functions of ISM. The ISM functions are an embodiment of the traditional Plan-Do-Check-Act quality cycle that can be applied to any work processes. SC-CH implements its FEOSH Program. The FEOSH program is documented and implements the ISM functions by providing processes by which work is defined and performed, hazards are identified and analyzed, and controls are implemented. Feedback and improvement is implemented through the SC-CH QA Program.

SC-CH performs a myriad of non-operational work activities that are essential for assuring safety during the conduct of “operational work activities” at NBL. These non-operational work activities include defining work scopes, allocating resources, reviewing safety controls and safety analyses, conducting assessments, developing corrective action plans, and integrating feedback sources to identify opportunities for improvement.

SC-CH work activities that are required for the overall Department-wide ISM system to be effective, and to integrate safety effectively into work being accomplishment by NBL include, but are not limited to:

- Providing clear and visible leadership vision on the ISM system;
- Establishing a positive environment for effective ISM system implementation;
- Translating the mission into meaningful scopes of work;
- Establishing annual budgets, including making decisions on mission-safety trade-offs;
- Evaluating resource short-falls and identifying safety problems to ensure adequate resources are applied to resolve safety problems and secure safety improvements;
- Ensuring the adequate delineation of safety requirements;
- Reviewing and approving safety documentation, such as documented safety analyses, technical safety requirements, ISM Systems, QA Programs, worker safety and health programs, and assurance systems;
- Determining when authorization agreements are needed and approving authorization agreements;
- Maintaining operational awareness of NBL work activities,

including implementation of hazard controls;

- Establishing and implementing feedback and improvement programs and processes to facilitate a culture that promotes ongoing examination and learning and continuous improvement;
- Monitoring various sources of feedback information;
- Developing and implementing corrective actions and improvement actions;
- Monitoring the effectiveness of corrective actions;
- Planning and performing self/management-assessments;
- Planning and performing oversight of NBL work activities;

Continuous improvement of ES&H comes when each of the five core functions are performed in an integrated, effective manner. Therefore, this ISMSD serves to facilitate and focus thinking and planning of an appropriate approach to safety management, and organizing and implementing the necessary follow-through activities. The SC-CH ISMSD is also expected to capture and institutionalize future changes and improvements to the approach during annual updates thus providing new organization members with a road-map to see the full-integrated vision.

### 5.3. Oversight of ISM at NBL

The protection of the public, the workers, and the environment through safety management is a primary responsibility of DOE line management. This responsibility includes planning, direction, and oversight of activities designed to ensure safety in all activities. There is an unbroken line of managers who are fully committed to performing work safely that extends from the Secretary of Energy to each individual worker. While performing the work safely is the personal responsibility of every individual, it is management's responsibility to ensure that this safety philosophy is established and nurtured and that safety management programs are implemented consistent with the level of hazards and risks of each operation. As the line manager with responsibility for day-to-day oversight of NBL safety management, the SC-CH Manager plays a key role in that unbroken chain.

The SC-CH utilizes a combination of direction, oversight, and approval activities to accomplish its safety management roles and responsibilities. SC-CH uses the PEMP and other tools to provide direction to NBL. The processes used for oversight of NBL and for providing stewardship of the Laboratory is captured in the SC-CH M 226.1, *Oversight and Assurance Plan for New Brunswick Laboratory*, the SCMS QA & Oversight, and

## ES&H Management Systems.

DEAR Clause 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution* (Dec 2000), is used in M&O contracts to impose the DOE ISM Guiding Principles and Core Functions on contractors. Since NBL is a GOGO, there is no contractual mechanism. As a result of the 2006 A-76 competition which recognized NBL as the most efficient organization (MEO) for operation of the Laboratory, the Assistant Manager of SC-CH's Office of Acquisition and Assistance issued a Letter of Obligation (LOO) to the MEO. The LOO commits the MEO to perform their work consistent with all applicable laws, regulations, and other requirements. Through mutual agreement, NBL and SC-CH work together to determine which of the contractor-focused requirements from DOE Directives, DEAR clauses, and regulations are appropriate for NBL. NBL then incorporates those requirements into their various management systems and operating procedures.

The DOE ISM requirements are clearly applicable to NBL; in response to these requirements, NBL maintains and implements an ISMSD. The NBL ISMSD is a living document that defines how the Laboratory meets the Core Functions and Guiding Principles of Integrated Safety Management. The PEMP establishes specific performance objectives, measures, and commitments related to safety management. Through annual review and approval of objectives, measures, and commitments, and day-to-day oversight and evaluation of safety performance, SC-CH fulfills its safety management responsibilities. In addition, SC-CH utilizes information and data provided in the annual NBL Self-Evaluation Report, SC-CH oversight of NBL, various independent assessments, and performance metrics (e.g., Days Away, Restricted, or Transferred Rate, Total Recordable Case Rate, etc.) to determine Laboratory performance related to safety management.

SC-CH conducts safety oversight and approvals through the following five (5) key functions:

### 5.3.1. Management Supervision

The Director of NBL reports to the SC-CH Manager. The elements and expectations of the NBL Director's Performance Appraisal Plan are determined by the SC-CH Manager. The NBL Director's job performance is appraised by the SC-CH Manager. This is an effective tool with which the SC-CH Manager sets expectations and influences performance in a wide range of areas, including safety management at NBL. A key expectation is that NBL is responsible to define and document a management approach and system that is satisfactory to SC-CH. This expectation specifically includes management controls, an integrated safety management system, and an assurance process, which reflect an understanding of the

risks, maintains mechanisms for eliminating or mitigating risks, and maintains a process to ensure that the objectives of the management systems are being effectively accomplished. SC-CH develops specific performance criteria in the PEMP and monitors and evaluates performance against these criteria throughout the year.

#### 5.3.2. Performance Assurance

SC-CH conducts performance assurance to establish NBL accountability in defining, documenting and implementing their management approach and system. This is accomplished through oversight of the NBL management systems, including Integrated Safety Management, Worker Safety and Health, Radiological Control, Facility Safety, Environmental Protection, etc. Since ISM relies directly or indirectly on all management systems and programs, SC-CH assurance activities represent a primary means by which collective ISM oversight is achieved. These oversight activities are conducted to identify specific requirements for setting expectations, conducting performance assurance activities, documenting results, and conducting analysis of results. This process relies on SC-CH SMEs to make independent judgments in evaluating the adequacy of requirements, the appropriate translation of those requirements into management systems, processes, and procedures, and the effectiveness of implementation.

#### 5.3.3. Work Authorization

SC-CH authorizes work at NBL through the approval of environmental permits, safety authorization approvals (e.g. Documented Safety Analysis), and management system documents such as the NBL QAP and ISMSD.

#### 5.3.4. Operational Awareness Oversight

The SMEs and the FR perform Operational Awareness activities. Their primary duty is to provide oversight of NBL operations. Oversight performed by SMEs and the FR provides management with accurate and objective information on the effectiveness of NBL work performance and practices, including implementation of the integrated safety management system. SMEs and the FR perform oversight to:

- Determine whether NBL is performing work and operating the facility safely.
- Perform assessment and verify that NBL management

systems are effectively controlling conduct of operations and implementing ISM objectives, principles, and functions.

- Provide management with timely information concerning facility events, conditions, activities, and operational performance.
- Provide effective lines of communication between SC-CH and NBL management during periods of normal operation and following reportable events.
- Evaluate NBL corrective actions taken in response to events, conditions, and performance issues.

#### 5.4. Integration with Key SC-CH and SC-wide Programs and Documents

The SC-CH ISMSD, FRAM, and QAP work together with various elements of the SCMS (specifically the SCMS QA & Oversight, and ES&H Management Systems) to provide the framework for SC-CH ISM implementation. Appendix A presents a crosswalk showing how SC-CH processes, articulated in SC-CH and SCMS documents, address the specific ISM Core Functions and Guiding Principles. Integration of these processes into one management approach provides SC-CH with the most efficient and effective means for achieving ISM.

## 6.0 Annual ISM Maintenance and Improvement Processes

### 6.1. ISMSD Maintenance and Improvement

The SC-CH ISMSD will be reviewed at least annually to determine whether updates are needed. If no changes are needed to maintain the SC-CH ISMSD complete, accurate, and up-to-date, then no annual update will be necessary. A statement to this effect will be included in the annual ISM summary evaluation. If changes are needed, these will be approved by the SC-CH Manager.

### 6.2. ISM Annual Oversight, Effectiveness Reviews and Self-Assessments

Annual reviews of NBL ISM implementation will be conducted consistent with the oversight approach described in Section 5.3 above and will be scheduled in the SC Integrated Assessment Schedule (IAS). In addition, SC-CH self-assesses its ISM implementation.

### 6.3. ISM Annual Safety Performance Objectives, Measures and Commitments

SC-CH will update its safety performance objectives, measures, and commitments on an annual basis through development of the APP. The

APP is prepared in accordance with the SCMS QA & Oversight Management System ([http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL\\_MS.cfm](http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL_MS.cfm)), along with any annual guidance from the SC DDFO.

#### 6.4. ISM Annual Summary Evaluation Process

An annual review of NBL ISM effectiveness will be conducted by SC-CH to:

- Determine the effectiveness of the NBL ISMS in integrating safety into work performance, in supporting the safe performance of work, and in improving safety performance.
- Identify strengths of the NBL ISMS implementation for sharing with other DOE elements to aid improvements at other locations.
- Identify weaknesses of NBL ISMS implementation to focus attention on corrective and improvement actions.
- Identify opportunities for improvement in efficiency or effectiveness of the NBL ISMS, and identify actions for continuous improvement.

The SC-CH annual review of NBL ISM effectiveness is a qualitative review that involves multiple elements, including review against quantitative performance measures, and a compilation of oversight results. The annual review will also include evaluation of performance against safety objectives, measures, and commitments described in the APP as determined through the SC-CH AAR, and any other pertinent feedback data from any other relevant mechanisms. The NBL ISM self-evaluation and ISM Declaration are considered in the SC-CH annual review of NBL ISM implementation. The AAR is prepared in accordance with the SCMS QA & Oversight Management System ([http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL\\_MS.cfm](http://scms.sc.doe.gov/orbitsearch/MSD/QUAL/QUAL_MS.cfm)).

Elements of this review are on-going throughout the year, and will culminate in a review report that supports an annual summary evaluation. The approach for this review and steps to be considered during the review are provided in Appendix B. In accordance with DOE M 450.4-1, following the annual NBL ISM effectiveness review, the SC-CH Manager will issue an “ISM Declaration” to the SC DDFO on the implementation status of ISM at NBL.

### 7.0 Change Control

The SC-CH ISMSD, including the SC-CH FRAM and SC-CH QAP, will be reviewed periodically (at least annually) and updated as appropriate.

Likewise, as applicable DOE Directives are issued or modified, and/or associated SC and SC-CH processes and management systems are developed or modified, these three documents will be updated accordingly. The SC-CH Safety and Technical Services Division has the lead responsibility for ensuring periodic revision of these three documents.

## Appendix A: Crosswalk Between SC-CH Programs/Processes and the ISM Core Functions and Guiding Principles

ISM Guiding Principles (GPs) and Core Functions (CFs)	SC-CH Processes								Oversight of NBL				
	FEOSH	QAP	FRAM	SCMS	LD	APP/AAR	TQP	PP	PEMP	LOO	OV	IM	LL
GP1 – Line Management Responsibility for Safety	X	X	X	X	X			X			X	X	
GP2 – Clear Roles and Responsibilities	X	X	X	X	X			X			X		
GP3 – Competence Commensurate with Responsibility	X	X		X			X	X			X		X
GP4 – Balanced Priorities	X			X		X		X	X		X	X	
GP5 – Identification of Safety Standards and Requirements	X	X	X	X	X					X	X		
GP6 – Hazard Controls Tailored to Work	X	X		X							X	X	X
GP7 – Operations Authorization	X	X		X	X					X	X		
CF1 – Define the Work	X	X		X		X		X		X	X		
CF2 – Identify and Analyze the Hazards	X	X		X							X		X
CF3 – Identify and Implement Controls	X	X		X							X	X	X
CF4 – Perform Work Within Controls	X	X		X							X		
CF5 – Feedback and Improvement	X	X		X	X	X		X	X		X	X	X

FEOSH Federal Employee Occupational Safety and Health  
 QAP Quality Assurance Program  
 FRAM Functions, Responsibilities and Authorities Manual  
 SCMS Office of Science Management System  
 LD SC-CH Local Directives

LOO Letter of Obligation  
 TQP Technical Qualification Program  
 PP Performance Plans  
 PEMP Performance Evaluation and Management Plan  
 APP/AAR Assessment Performance Plan/Annual Assessment Report

OV Oversight  
 IM Issues management  
 LL Lessons Learned

## Appendix B: Annual ISM Summary Evaluation Approach

The following steps will be considered for the annual ISM summary evaluation review:

- Review the annual ISM review(s) and summary evaluation(s) performed by NBL.
- Review the safety performance of NBL against the previous year's Safety Performance Objectives, Measures, and Commitments.
- Review the overall safety performance of NBL, including results from various streams of feedback and improvement information.
- Review results of line oversight of NBL; these line oversight reviews can and should be conducted throughout the year, as required by DOE Order 226.1A, *Implementation of Department of Energy Oversight Policy*.
- Review the completeness and accuracy of the NBL ISMSD.
- Determine whether a major ISM assessment of the contractor(s) is needed.
- If a full, formal ISM assessment is needed, perform it using guidance below.
- If a full, formal ISM assessment is not needed, document review and conclusions regarding effectiveness of the ISM program implementation by NBL, basis for conclusions, strengths and weaknesses and areas for improvement.
- For SC-CH, review self-assessment results regarding SC-CH ISM performance; these self-assessment reviews can and should be conducted throughout the year.
- Review SC-CH performance against the previous year's Safety Performance Objectives, Measures, and Commitments.
- Review the completeness and accuracy of the SC-CH ISMSD, and make necessary changes. Determine whether an update is necessary. If an update is made, prepare a summary of changes.
- Review integrated SC-CH/NBL safety performance, including results from various sources of feedback and improvement information, including external and independent oversight findings.
- Based on all the prior reviews, reach an overall conclusion regarding the state of ISM effectiveness: (1) ISM is not being effectively implemented, (2) ISM is being effectively implemented, but noteworthy weaknesses need to be addressed, or (3) ISM is being effectively implemented. Provide the basis for this summary evaluation. Provide any immediate corrective or compensatory actions that must be taken.

- Prepare the annual summary evaluation report that documents the overall review process and conclusions regarding effectiveness of the ISM system, basis for conclusions, strengths and weaknesses and areas for improvement, and corrective and improvement actions, with schedules for completion.