

Number: LS-ESH-0041

[Revision Log](#)

Section: **NSLS OHSAS Management System Manual**

Date: 10/13/2005

Revision: 3

Prepared by: Nicholas F. Gmür

Approved by: Steven Dierker, W. Robert Casey

- [FAQ](#)
- [Key OHSAS Contacts](#)

Table of Contents

- [OHSAS Element 4.1 – General Requirements](#)
- [OHSAS Element 4.2 – Occupational Safety and Health Policy](#)
- [OHSAS Element 4.3.1 – Planning for Hazard Identification, Risk Assessment and Risk Control](#)
- [OHSAS Element 4.3.2 – Legal and Other Requirements](#)
- [OHSAS Element 4.3.3 – Objectives](#)
- [OHSAS Element 4.3.4 – OH&S Management Program\(s\)](#)
- [OHSAS Element 4.4.1 – Structure and Responsibility](#)
- [OHSAS Element 4.4.2 – Training, Awareness and Competence](#)
- [OHSAS Element 4.4.3 – Consultation and Communication](#)
- [OHSAS Element 4.4.4 – Documentation](#)
- [OHSAS Element 4.4.5 – Document and Data Control](#)

- [OHSAS Element 4.4.6 – Operational Control](#)
- [OHSAS Element 4.4.7 – Emergency Preparedness and Response](#)
- [OHSAS Element 4.5.1 – Performance Measurement and Monitoring](#)
- [OHSAS Element 4.5.2 – Accidents, Incidents, Non-conformances and Corrective and Preventive Action](#)
- [OHSAS Element 4.5.3 – Records and Records Management](#)
- [OHSAS Element 4.5.4 – Audits](#)
- [OHSAS Element 4.6 – Management Review](#)

NLS OHSAS Documents

[NLS Job Risk Assessments](#)

[NLS Facility Risk Assessments](#)

[Worker Qualification Matrices](#)

[Crosswalk Between OHSAS 18001 Guidelines, BNL Standards-Based Managements System \(SBMS\) and NLS Documents](#)

[NLS OHSAS Management System Key Contacts List](#)

[NLS ESH Improvement Plan](#)

[Outline of NLS EMS/OHSAS Communications](#)

[NLS Self-Assessment Plan](#)

OHSAS 18001 Management System

OHSAS 18001 Element: 4.1 General Requirements

The organization shall establish and maintain an OH&S management system, the requirements for which are set out in clause 4. [OSHAS 18001 4.1]

The purpose of this Manual is to document the implementation of the Occupational Health and Safety Assessment Series (OHSAS) 18001 specification criteria within NSLS programs. The program elements apply to all activities conducted within the National Synchrotron Light Source (NSLS), including the Deep Ultraviolet-Free Electron Laser (DUV-FEL) facility. This manual is intended primarily as an OHS management tool for NSLS managers and the NSLS OHSAS Management Committee to implement and improve the OHS system, and to demonstrate conformance to assessors who review OHSAS implementation at NSLS. The [NSLS ESH Policies and Requirements Manual \(PRM\)](#) is the primary NSLS document for defining specific OHSAS requirements relating to performance in the work place. Job risk assessments, worker qualifications and training for the workers are merged in the [NSLS Worker Qualification Matrices](#).

BNL OHS Management Representative: [James Tarpinian](#)

NSLS OHS Management Representative: [W. Robert Casey](#); reports to Steven Dierker (ALD)

Responsibilities for maintaining OHSAS program elements are also assigned in this manual (see [NSLS OHSAS Management System Key Contacts List](#)). An OHSAS Management Committee is maintained and functions as one of the [NSLS Standing Committees](#). The primary role of the committee is to monitor performance of the OHSAS Management Program at NSLS at regular meetings. The OHSAS Management Committee meets at least twice a year. Members of the committee are:

Associate Chair for ESH/Q - Robert Casey
ESH Coordinator - Nicholas Gmur
Experimental Review Coordinator - Andrew Ackerman
Local Emergency Coordinator - Nicholas Gmur
Quality Representative - Michael Buckley
Deputy Safety Officer - John Aloï
Safety Engineer - Robert Chmiel
Training Coordinator - Mary Anne Corwin
Environmental Compliance Representative – Deborah Bauer
RCD Facility Support Representative - Nathaniel Foster

NSLS staff members are invited to contact any member of the OHSAS Committee for questions or comments.

BNL guidance for the OHSAS program is provided by:

- [Occupational Safety and Health \(OSH\) \(Pilot for OHSAS 18001\) Program Description](#)
- [Management System Description: Occupational Safety and Health \(OSH\) \(Pilot for OHSAS 18001\)](#).
- [BNL OHSAS Interim Procedures](#)

All NSLS OHSAS manual text in italics is excerpted from the OHSAS 18001 Specification.

OHSAS 18001 Element: 4.2 Occupational Safety and Health Policy

There shall be an Occupational Safety and Health policy authorized by the organization's top management that clearly states overall health and safety objectives and a commitment to improving health and safety performance.

The policy shall:

a) be appropriate to the nature and scale of the organization's OH&S risks;

- b) include a commitment to continual improvement;*
 - c) include a commitment to at least comply with current applicable OH&S legislation and with other requirements to which the organization subscribes;*
 - d) be documented, implemented and maintained;*
 - e) be communicated to all employees with the intent that employees are made aware of their individual OH&S obligations;*
 - f) be available to interested parties; and*
 - g) be reviewed periodically to ensure that it remains relevant and appropriate to the organization.*
- [OSHAS 18001, 4.2]*

The NSLS has committed to the Occupational Health & Safety (OHS) policies established by the BNL Laboratory Director and will adhere to the principles in the [BNL Environmental, Safety, Security and Health Policy](#). The Policy plaque has been posted in the NSLS front lobby (Bldg. 725).

The NSLS is committed to familiarizing NSLS staff and users with the OHSAS policies. This is detailed in the [Outline of NSLS EMS/OHSAS Communications](#).

Responsibility for periodic review of the Policy document has been assigned to the NSLS Associate Chair for ESH/Q, in conjunction with the NSLS OHSAS Management Committee.

OHSAS 18001 Element: 4.3 Planning

OHSAS 18001 Element: 4.3.1 Planning for Hazard Identification, Risk Assessment and Risk Control

The organization shall establish and maintain procedures for the ongoing identification of hazards, the assessment of risks, and the implementation of necessary control measures. These shall include:

- routine and non-routine activities;*
- activities of all personnel having access to the workplace (including subcontractors and visitors);*
- facilities at the workplace, whether provided by the organization or others.*

The organization shall ensure that the results of these assessments and the effects of these controls are considered when setting its OH&S objectives. The organization shall document and keep this information up to date.

The organization's methodology for hazard identification and risk assessment shall:

- be defined with respect to its scope, nature and timing to ensure it is proactive rather than reactive;*
- provide for the classification of risks and identification of those that are to be eliminated or controlled by measures as defined in 4.3.3 and 4.3.4;*
- be consistent with operating experience and the capabilities of risk control measures employed;*
- provide input into the determination of facility requirements, identification of training needs and/or development of operational controls;*
- provide for the monitoring of required actions to ensure both the effectiveness and timeliness of their implementation.*

Note: For further guidance on hazard identification, risk assessment and risk control, see OSHAS 18002. [OSHAS 18001, 4.3.1]

Potential hazards, risks and controls at the job or facility levels are evaluated through the use of [Job Risk Assessments](#) and [Facility Risk Assessments](#). Guidance is provided by the [Job Risk Analysis \(JRA\) interim procedure](#) and the [Facility Risk Analysis \(FRA\) interim procedure](#). The JRAs and FRAs are

integral components in the [NSLS Worker Qualification Matrices](#).

In addition, evaluating work for hazards, determining the risks involved in that work and assignment of the controls to assure risks are at a tolerable level are covered by procedures at the NSLS such as [PRM 1.3.5a, "Experiment Safety Review,"](#) [PRM 1.3.6, "NSLS Work Planning and Control Procedure"](#) and the [Design Reviews](#) procedure. These procedures refer up to the appropriate SBMS Subject Areas. In addition, a related [PRM 1.3.5b, "Beamline Safety Review"](#) forms part of this grouping. The NSLS Tier I program provides the mechanism for conducting and documenting OHS inspections of work places, and is described in [PRM 1.2.0, "Environmental, Safety and Health Inspections."](#) Non-NSLS users are managed through the NSLS User Administration Office; however, their hazards, risks and controls are determined through the above procedures. Contractors and vendors are managed through the NSLS Guest Administrator with guidance provided by the [NSLS Contractor/Vendor Orientation Form](#). Non-working visitors must have an NSLS contact to act as an escort.

Accelerator facility hazards and controls are described in the [Safety Assessment Documents \(SAD\) and Accelerator Safety Envelopes \(ASE\)](#). Risk Assessments are listed as an appendix of the DUV-FEL SAD (Note, the NSLS SAD is currently undergoing revision and will include a Risk Assessment appendix in the new version).

Required actions are monitored and measured and their effectiveness is determined through the use of self-assessments (such as Tier I safety inspections) and audits. The timeliness of their implementation is determined through Tier I's own follow-up system and through the BNL/NSLS Action Tracking system (ATS); persons listed for closures of items have responsibility for justifying the closures.

OHSAS 18001 Element: 4.3.2 Legal and Other Requirements

The organization shall establish and maintain a procedure for identifying and accessing the legal and other OH&S requirements that are applicable to it.

The organization shall keep this information up-to-date. It shall communicate relevant information on legal and other requirements to its employees and other relevant interested parties. [OSHAS 18001, 4.3.2]

Legal and other OHS requirements potentially applicable to NSLS are provided through the BNL Manuals, Subject Areas and Program/Management Descriptions in the [Standards-Based Management System \(SBMS\)](#). Applicable requirements have been identified in the [NSLS Facility Use Agreement \(FUA; password access only\)](#) and are re-iterated in the [NSLS ESH Policies and Requirements Manual](#). A list of any current permits for NSLS is maintained in the NSLS FUA. An additional resource for information concerning legal and other requirements is the SBMS [Legal and Other Requirements interim procedure](#).

Responsibility to ensure that the NSLS Policies and Requirements Manual is maintained current and is communicated to NSLS staff has been assigned to the NSLS Associate Chair for ESH/Q, in conjunction with the NSLS ESH Coordinator. The NSLS Facility Use Agreement is maintained by the NSLS Building Manager. They subscribe to the SBMS Change Notice Service and will assure that NSLS staff and users are advised by email or by meetings when changes in the legal requirements occur. NSLS Documents are updated as needed or when the NSLS document control system alerts a document owner that a revision cycle has ended.

OHSAS 18001 Element: 4.3.3 Objectives

The organization shall establish and maintain documented Occupational Safety and Health objectives, at each relevant function and level within the organization.

Note: Objectives should be quantified wherever practicable.

When establishing and reviewing its objectives, an organization shall consider its legal and other requirements, its OH&S hazards and risks, its technological options, its financial, operational and business requirements, and the views of interested parties. The objectives shall be consistent with the OH&S policy, including the commitment to continual improvement. [OSHAS 18001, 4.3.3]

The NSLS establishes annual OHS objectives in the [NSLS ESH Improvement Plan](#). These Objectives are developed and based on legal and BNL requirements as well as the department's OHS hazards and risks as detailed in the JRAs and FRAs. Each Objective is defined, has targets, is assigned to an individual and has a completion date. The NSLS ESH Improvement Plan may be amended as needed and is reviewed at least semi-annually. Reviews are conducted at EMS/OHSAS Committee group meetings and through periodic discussions with the NSLS Chairman.

Development of the NSLS OHS objectives is based on BNL priorities as established in the BNL Critical Outcomes and other documents, as well as on the NSLS priorities defined through the self-assessment program. The final NSLS OHS objectives are established by NSLS management, following consideration of technological options, and the financial, operational and business requirements of the department. These evaluations are conducted through the development of the annual NSLS Operating Plan.

The OHS Objectives are included as part of the over-all NSLS Performance Objectives which are established annually as a part of the [NSLS Self-Assessment Plan](#). Responsibility to ensure that the OHS objectives are reviewed and re-established annually is assigned to the NSLS Associate Chair for ESH/Q, in conjunction with the NSLS EMS/OHSAS Management Committee.

The views of interested parties are determined and addressed at annual meetings attended by NSLS Senior Management, the NSLS OHSAS Management Committee, members of the BNL ESH/Q Directorate Division, and BNL Management, as well as through the [Outline of NSLS EMS/OHSAS Communications](#).

Additional guidance is available in the SBMS [Documenting OSH Management System \(OSH MS\) Objectives/Targets and OSH Management Programs \(OMPs\)](#) interim procedure.

OHSAS 18001 Element: 4.3.4 OH&S Management Program(s)

The organization shall establish and maintain (an) OH&S management programme(s) for achieving its objectives. This shall include documentation of:

- a) the designated responsibility and authority for achievement of the objectives at relevant functions and levels of the organization; and*
- b) the means and time-scale by which objectives are to be achieved.*

The OH&S management programme(s) shall be reviewed at regular and planned intervals. Where necessary the OH&S management programme(s) shall be amended to address changes to the activities, products, services, or operating conditions of the organization. [OSHAS 18001, 4.3.4]

Development of NSLS OHS Objectives, contained in the NSLS ESH Improvement Plan, is described in Section 4.3.3 above. Each Objective is defined, has targets, is assigned to an individual and has a completion date.

Responsibility for annual review of this program has been assigned to the NSLS Associate Chair for ESH/Q, in conjunction with the NSLS EMS/OHSAS Management Committee. The review will be performed each year prior to the annual NSLS Management Review. Management may link objectives with the NSLS Budget Cycle for allocation of resources when appropriate.

Additional guidance is available in the SBMS [Documenting OSH Management System \(OSH MS\) Objectives/Targets and OSH Management Programs \(OMPs\)](#) interim procedure.

OHSAS 18001 Element: 4.4 Implementation and Operation

OHSAS 18001 Element: 4.4.1 Structure and Responsibility

The roles, responsibilities and authorities of personnel who manage, perform and verify activities having an effect on the OH&S risks of the organization's activities, facilities and processes, shall be defined, documented and communicated in order to facilitate OH&S management.

Ultimate responsibility for Occupational Safety and Health rests with top management. The organization shall appoint a member of top management (e.g., in a large organization, a Board or executive committee member) with particular responsibility for ensuring that the OH&S management system is properly implemented and performing to requirements in all locations and spheres of operation within the organization.

Management shall provide resources essential to the implementation, control and improvement of the OH&S management system.

Note: Resources include human resources and specialized skills, technology and financial resources.

The organization's management appointee shall have a defined role, responsibility and authority for:

- a) ensuring that OH&S management system requirements are established, implemented and maintained in accordance with this OSHAS specification;*
- b) ensuring that reports on the performance of the OH&S management system are presented to top management for review and as a basis for improvement of the OH&S management system.*

All those with management responsibility shall demonstrate their commitment to the continual improvement of OH&S performance. [OSHAS 18001, 4.4.1]

The NSLS has established responsibilities for maintaining the OHSAS Management System within the department. The Department Chair, assisted by the Associate Chair for ESH/Q, has overall responsibility to ensure that adequate resources are provided for effective implementation and control of the OHSAS Program. These responsibilities are listed in their respective R2A2s (Roles, Responsibilities, Accountabilities and Authorities). Results of the annual Management Review are provided to senior BNL management (see Section 4.6) and are used as a basis for continual improvement.

Specific responsibilities for portions of the OHSAS Management System are defined in this OHSAS Management System Manual and in the [NSLS Key OHSAS Contacts List](#). In addition, the EMS/OHSAS Management Committee provides support in maintaining the continuing program and participates in reviews of program effectiveness. The [NSLS ESH Improvement Plan](#) lists responsible parties for program objectives and targets.

Qualification and training for staff associated with hazards, risks and controls identified in the Job Risk Assessments are managed through the [Worker Qualification Matrices](#) program, and through the NSLS

Training Coordinator who develops [Job Training Assessments](#) in collaboration with the workers' supervisors (see Section 4.4.2 below).

Organization charts showing [NSLS departmental structure](#) and [NSLS ES&H structure](#) are available.

OHSAS 18001 Element: 4.4.2 Training, Awareness and Competence

Personnel shall be competent to perform tasks that may impact on OH&S in the workplace. Competence shall be defined in terms of appropriate education, training and/or experience.

The organization shall establish and maintain procedures to ensure that its employees working at each relevant function and level are aware of:

- *the importance of conformance to the OH&S policy and procedures, and to the requirements of the OH&S management system;*
- *the OH&S consequences, actual or potential, of their work activities and the OH&S benefits of improved personal performance;*
- *their roles and responsibilities in achieving conformance to the OH&S policy and procedures and to the requirements of the OH&S management system, including emergency preparedness and response requirements (see 4.4.7);*
- *the potential consequences of departure from specified operating procedures.*

Training procedures shall take into account differing levels of:

- *responsibility, ability and literacy; and*
- *risk. [OSHAS 18001, 4.4.2]*

The [NSLS Training Policy](#) has been developed and contains the NSLS-specific training policies. Training requirements for all NSLS staff, including those in support of the OHSAS management program, have been identified and incorporated into the individual Job Training Assessments (JTAs) which are accessible through the [Brookhaven Training Management System \(BTMS\)](#). Past education, training, and experience are used to determine the level of training needed to qualify an individual for NSLS activities. [Worker Qualification Matrices](#) are used for qualifying individuals for work activities that require a more formal qualification process due to the level of skill required, hazard encountered, risk or programmatic impact anticipated. These matrices are reviewed and agreed upon by the groups and individuals concerned. In addition, non-routine and technically complex tasks are reviewed through [work planning](#) to examine the hazards, develop the controls and reduce the risks. Training includes the BNL web-based module entitled, "[Reducing Injuries and Accidents in the Workplace](#)," TQ-SAFEWARE.

The NSLS Training Policy and the NSLS Job Training Assessments are maintained by the NSLS Training Coordinator.

OHSAS 18001 Element: 4.4.3 Consultation and Communication

The organization shall have procedures for ensuring that pertinent OH&S information is communicated to and from employees and other interested parties. Employee involvement and consultation arrangements shall be documented and interested parties informed.

Employees shall be:

- *involved in the development and review of policies and procedures to manage risks;*

*-consulted where there are any changes that affect workplace health and safety;
-represented on health and safety matters; and
-informed as to who is their employee OH&S representative(s) and specified management appointee
(see 4.4.1). [OSHAS 18001, 4.4.3]*

The [Outline of NSLS EMS/OHSAS Communications](#) and the [Frequently Asked Questions](#) have been established to guide the communication of OHS to NSLS staff. The NSLS OHSAS program has been communicated to NSLS staff and users through the establishment of OHSAS web pages, emails and through training to groups who are involved in occupational health and safety issues. The communication plan is the responsibility of the Associate Chair for ESH/Q and will be formally reviewed and revised on a three year cycle. The communication plan will be augmented as needed to reflect issues that need specific discussion and communication with NSLS staff and management.

Participation of workers in the development, review and update of policies, procedures and OHS issues is done through a) work planning, experiment review, beamline review, design review, ESH Improvement and JRA/FRA development; b) suggestion boxes; c) group toolbox meetings; d) weekly User Meetings, quarterly User Executive Committee Meetings, annual NSLS Users' Meeting; and e) safety suggestion emails.

Communication with external stakeholders is coordinated through the NSLS Chair's Office, the NSLS Information and Outreach Office, and the BNL Community, Education, Government and Public Affairs Office (CEGPA), and can be tracked using the Correspondence and Commitment Tracking System (CCTS).

Employees are informed who their OHS representative(s) and specified management appointee are through OHS training/briefings, and annual distribution of OHS information bulletins and facility specific OHS training.

Additional guidance is available in the SBMS [OHS Consultation and Communication](#) interim procedure.

OHSAS 18001 Element: 4.4.4 Documentation

The organization shall establish and maintain information, in a suitable medium such as paper or electronic form, that:

- a) describes the core elements of the management system and their interaction; and*
- b) provides direction to related documentation.*

Note: It is important that documentation is kept to the minimum required for effectiveness and efficiency. [OSHAS 18001, 4.4.4]

This OHSAS Manual provides the core element documentation of the NSLS OHSAS program. This Manual will be reviewed annually and revised as necessary.

Other key documents in the NSLS OHSAS program are listed in [Crosswalk Between OHSAS 18001 Guidelines, BNL Standards-Based Management System \(SBMS\) and NSLS Documents](#).

OHSAS 18001 Element: 4.4.5 Document and Data Control

The organization shall establish and maintain procedures for controlling all documents and data required by this OSHAS specification to ensure that:

- a) they can be located;*

- b) they are periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel;
- c) current versions of relevant documents and data are available at all locations where operations essential to the effective functioning of the OH&S system are performed;
- d) obsolete documents and data are promptly removed from all points of issue and points of use, or otherwise assured against unintended use;
- e) archival documents and data retained for legal or knowledge preservation purposes, are suitably identified. [OSHAS 18001, 4.4.5]

The NSLS has established procedures for Document Control - "[Preparation of Controlled Documents](#)" and "[Drawing and Specification Distribution](#)." These procedures are a part of the [NSLS QA Manual](#) and are maintained by the NSLS Quality Representative.

Documents required by the OHSAS Manual will be reviewed and revised as defined within this manual.

OHSAS 18001 Element: 4.4.6 Operational Control

The organization shall identify those operations and activities that are associated with the identified risks where control measures need to be applied. The organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions by:

- a) establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the OH&S policy and the objectives;
- b) stipulating operating criteria in the procedures;
- c) establishing and maintaining procedures related to the identified OH&S risks of goods, equipment and services purchased and/or used by the organization and communicating relevant procedures and requirements to suppliers and contractors;
- d) establishing and maintaining procedures for the design of workplace, process, installations, machinery, operating procedures and work organization, including their adaptation to human capabilities, in order to eliminate or reduce OH&S risks at their source. [OSHAS 18001, 4.4.6]

As described in [Element 4.3.1](#) above, NSLS and SBMS procedures are in place for reviewing work to identify the hazards, develop and implement controls, and assess the risks. Documentation of hazards, controls and the resulting risks is through [Facility Risk Assessments \(FRA\)](#) and [Job Risks Assessments \(JRA\)](#). If a risk determined is too high, controls are re-evaluated to reduce that risk and, where necessary, incorporated into procedures or other work-related documents.

The NSLS OHS Management Representative is responsible for scheduling annual reviews of JRAs and FRAs, including their operational controls, such that all JRAs and FRAs are reviewed on a three year cycle. JRAs or FRAs may be revised at any time to incorporate findings from an accident/injury investigation or from occurrence/non-conformance reports.

Procedures are in place to determine and evaluate OHS concerns associated with [on-site work](#) involving BNL trades or non-BNL contractors and vendors. Contracts may be established with suppliers and contractors that define NSLS, BNL and DOE requirements and expectations. Contractors and vendors, depending on the nature of their job and their length of stay at BNL/NSLS, may be required to attend the BNL Contractor/Vendor Orientation course, the [NSLS Contractor/Vendor Orientation Form](#), the [NSLS Facility ESH Briefing for Contractors and Vendors](#) and additional training.

OHSAS 18001 Element: 4.4.7 Emergency Preparedness and Response

The organization shall establish and maintain plans and procedures to identify the potential for, and responses to, incidents and emergency situations, and for preventing and mitigating the likely illness

and injury that may be associated with them.

The organization shall review its emergency preparedness and response plans and procedures, in particular after the occurrence of incidents or emergency situations.

The organization shall also periodically test such procedures where practicable. [OSHAS 18001, 4.4.7]

The NSLS has a [Local Emergency Plan](#) which follows the requirements of the BNL [Emergency Preparedness](#) Subject Area.

Periodic drills are carried out to verify that the NSLS Emergency Plan is up to date and to verify staff understanding and conformance. Responsibility to review and update the NSLS Local Emergency Plan on an annual basis or as needed is assigned to the NSLS Local Emergency Coordinator; this review takes advantage of lessons learned from recent drills and other incidents in which causes have been identified and corrective actions developed.

The NSLS maintains [Firehouse Response Cards](#) for each of its buildings. These include listings of Hazards and Special Notes, Fire Protection and Panel information, Utility Shutoff Locations and personnel contacts. These cards are reviewed annually.

OHSAS 18001 Element: 4.5 Checking and Corrective Action

OHSAS 18001 Element: 4.5.1 Performance Measurement and Monitoring

The organization shall establish and maintain procedures to monitor and measure OH&S performance on a regular basis. These procedures shall provide for:

- both qualitative and quantitative measures, appropriate to the needs of the organization;*
- monitoring of the extent to which the organization's OH&S objectives are met;*
- proactive measures of performance that monitor compliance with the OH&S management programme, operational criteria and applicable legislation and regulatory requirements;*
- reactive measures of performance to monitor accidents, ill health, incidents (including near-misses) and other historical evidence of deficient OH&S performance;*
- recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective and preventive action analysis.*

If monitoring equipment is required for performance measurement and monitoring, the organization shall establish and maintain procedures for the calibration and maintenance of such equipment.

Records of calibration and maintenance activities and results shall be retained. [OSHAS 18001, 4.5.1]

The NSLS monitors the effectiveness of its OHS program through its ongoing self-assessment of NSLS and BNL Critical Outcomes/Objectives/Performance Measures, by evaluation of reportable occurrences and non-conformances, through Tier I inspections, pre-job site inspections, worker feedback as part of work planning, and accident/injury follow-up. Causal factors of occurrences and non-conformances are determined and corrective action plans are established where needed and may be tracked in department or Laboratory tracking systems. Additional OHS audits and assessments are conducted by external agencies, DOE Brookhaven Site Office and OHS support groups within the ESH&Q Directorate.

Equipment used to monitor OHS performance at the NSLS is obtained from and used by BNL Industrial Hygiene and Radiological Control Division personnel; this equipment is calibrated as defined in the BNL [Calibration Subject Area](#) or equipment specific procedures. NSLS Oxygen Deficiency Hazard (ODH) equipment is maintained and calibrated according to internal procedures. NSLS "Chipmunks", real-time radiation monitors, are maintained and calibrated annually by C-AD Access Controls Group. NSLS calibration is managed through [The Control and Calibration of Measurement and Test Equipment](#) procedure.

OHSAS 18001 Element: 4.5.2 Accidents, Incidents, Non-conformances and Corrective and Preventive Action

The organization shall establish and maintain procedures for defining responsibility and authority for:

a) the handling and investigation of:

- accidents;*
- incidents;*
- non-conformances;*

b) taking action to mitigate any consequences arising from accidents, incidents or nonconformances;

c) the initiation and completion of corrective and preventive actions;

d) confirmation of the effectiveness of corrective and preventive actions taken.

These procedures shall require that all proposed corrective and preventive actions shall be reviewed through the risk assessment process prior to implementation.

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problems and commensurate with the OH&S risk encountered.

The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action. [OSHAS 18001, 4.5.2]

The Laboratory has established requirements and guidance in the [Nonconformance and Corrective and Preventive Action](#) SBMS Subject Area. The NSLS [Nonconformance and Corrective and Preventive Action](#) procedure provides NSLS specific responsibilities and procedures for reporting, documenting, and implementing corrective actions. An assessment report or an [NSLS Nonconformance Report](#) (NCR) form will be used to document significant nonconformances that occur at the NSLS. Additional guidance is available from [NSLS PRM 1.1.1, "Injury and Incident/Accident Investigations and Critiques."](#) BNL guidance is also available through the SBMS [Critiques, Occurrence Reporting and Processing System \(ORPS\)](#) and [Investigation of Incidents, Accidents and Injuries](#) subject areas.

As warranted, causal factors are determined and corrective action plans are established and tracked in the NSLS Assessment Tracking System (ATS). Action Owners assigned corrective actions and responsible for closing those out are also responsible for assuring the completeness and effectiveness of the corrective actions; Condition and Assessment Owners also review corrective actions before final closeout. The NSLS will update Job and Facility Risk Assessments (or create new ones, as needed) to assure that the preventive/corrective actions are reflected in these documents. Lessons learned may be distributed through [NSLS ESH Highlights](#) or the BNL [Lessons Learned](#) program.

The NSLS Quality Representative manages the NSLS non-conformance system.

OHSAS 18001 Element: 4.5.3 Records and Record Management

The organization shall establish and maintain procedures for the identification, maintenance and disposition of OH&S records, as well as the results of audits and reviews.

OH&S records shall be legible, identifiable and traceable to the activities involved. OH&S records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times shall be established and recorded.

Records shall be maintained, as appropriate to the system and to the organization, to demonstrate conformance to this OSHAS specification. [OSHAS 18001, 4.5.3]

An [NSLS EMS/OHSAS Records Management](#) procedure has been developed by NSLS for identifying and retaining important records, and is based on the [SBMS Records Management Subject Area](#). This procedure is maintained by the NSLS Quality Representative.

NSLS training records are maintained through the [Brookhaven Training Management System \(BTMS\)](#). Radiological dosimetry records are maintained through Personnel Monitoring in the BNL Radiological Control Division. Industrial Health records are maintained through the BNL ESH/Q Directorate as well as through the BNL Occupational Medicine Clinic. Experiment review and work planning records are maintained through their respective NSLS and BNL databases.

OHSAS 18001 Element: 4.5.4 Audit

The organization shall establish and maintain an audit programme and procedures for periodic OH&S management system audits to be carried out, in order to

a) determine whether or not the OH&S management system

- 1) conforms to planned arrangements for OH&S management including the requirements of this OSHAS specification;*
- 2) has been properly implemented and maintained; and*
- 3) is effective in meeting the organization's policy and objectives.*

b) review the results of previous audits;

c) provide information on the results of audits to management.

The audit programme, including any schedule, shall be based on the results of risk assessments of the organization's activities, and the results of previous audits. The audit procedures shall cover the scope, frequency, methodologies and competencies, as well as the responsibilities and requirements for conducting audits and reporting results.

Wherever possible, audits shall be conducted by personnel independent of those having direct responsibility for the activity being examined.

Note: the word "independent" here does not necessarily mean external to the organization. [OSHAS 18001, 4.5.4]

Assessments of OHSAS performance are conducted throughout the year. NSLS conformance with BNL subject areas is reviewed through the on-going [NSLS Tier 1 ESH Inspections](#) and by special audits conducted by the BNL, DOE/BHSO and external organizations. Guidance for OHSAS audits and checklists is provided in the [18001 Audit Checklist interim procedure](#). An audit of the NSLS OHSAS management program will be performed annually to review the status of the program elements and level of occupational health and safety management performance. More frequent assessments of specific issues may be conducted depending on the importance of the activity, and previous assessment results. This review may be performed by NSLS personnel independent of the activity performed or by personnel external to the NSLS who are retained to conduct this assessment. Results of this assessment are forwarded to NSLS Management and will be reviewed at the annual Management Review.

Management reviews of OHS performance are conducted semi-annually. The NSLS Management Review and the OHSAS assessment and the regulatory compliance audits are planned and scheduled by the NSLS Associate Chair for ESHQ as separate elements of the [NSLS Self-Assessment Plan](#). Regulatory compliance audits are scheduled by external organizations.

OHSAS 18001 Element: 4.6 Management Review

The organization's top management shall, at intervals that it determines, review the OH&S management system, to ensure its continuing suitability, adequacy and effectiveness. The management

review process shall ensure that the necessary information is collected to allow management to carry out this evaluation. This review shall be documented.

The management review shall address the possible need for changes to policy, objectives and other elements of the OH&S management system, in the light of OH&S management system audit results, changing circumstances and the commitment to continual improvement. [OSHAS 18001, 4.6]

The status of the NSLS OHSAS management program and the level of performance are reviewed at an annual meeting attended by NSLS Senior Management, the NSLS OHSAS Management Committee, and individuals listed in the guidance provided in the [Integrated Management Review interim procedure](#). This group will make a determination on the continuing suitability, adequacy and effectiveness of the NSLS OHSAS Management Program for its intended purposes. Proceedings of this review will be documented. Recommendations for corrective actions or improvements for the next Fiscal Year will be established as needed at this meeting.

The [presentation](#) and [minutes](#) of the most recent Management Review are available on the Web.

Additional guidance is available in the SBMS [Integrated Management Review interim procedure](#).

The only official copy of this file is the one on-line in the NSLS ESH website. Before using a printed copy, verify that it is the most current version by checking the document issue date on the NSLS ESH website.

*For information regarding this document contact Nicholas Gmur, gmur@bnl.gov
Maintained by K. Loverro loverro@bnl.gov, A. Bowden bowden1@bnl.gov*

