**Department of Commerce**

**National Institute of Standards and Technology**

**Office of Safety, Health, and Environment**

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**X.01 Purpose**

The purpose of the Assessment Program is to establish the framework and guidance for systematically evaluating and measuring performance of NIST’s Occupational Health and Safety Management System (OHSMS) and its components. The OHSMS consists of occupational health and safety, administrative safety, and environmental management (SHE) programs, other NIST programs, and assessment-related responsibilities managed within Organizational Units (OUs).

The Assessment Program provides the framework for:

1. Comprehensive assessment of the overall OHSMS, including Environmental Management System (EMS) programs and processes;
2. Design of assessment instruments for OHSMS components;
3. Design of assessment instruments for evaluations and inspections initiated at NIST’s direction;
4. Assessment planning and scheduling; and
5. Integration of assessment processes and outputs with other NIST programs, including Objectives Identification/Strategic Planning, Management Review/Assessment and Prioritization of Needs, Monitoring, Measurement, and Assessment, and Corrective and Preventive Action.

The Assessment Program’s objectives include:

1. Compliance assurance, such that periodic assessments of the OHSMS and its components meet applicable regulatory and policy requirements;
2. Monitoring the effectiveness of NIST programs in identifying hazards and controlling risks;
3. Conformance with safety and environmental management system standards such as ANSI Z10, OHSAS 18001, and ISO 19011 (see Appendix X.A); and
4. Maintaining effective mechanisms for feedback and continual improvement of the performance of the OHSMS and its components.

**X.02 Scope**

The scope of the Assessment Program is the conduct of assessments that evaluate and measure performance of NIST’s OHSMS and its components. Examples of NIST programs evaluated under the Assessment Program include electrical safety, respiratory protection, incident investigation, hazardous materials, and radiation safety. A representative list of programs and organizational functions included in the scope of the Assessment Program is provided in Appendix X.B. Programs that directly influence, are influenced by, or provide input to the Assessment Program are listed in Appendix X.C.

The provisions of this program apply to all NIST employees and associates with the exception of the following:

1. NIST associates working at sites owned and operated by NIST who are required to operate in accordance with their employers’ NIST-accepted safety plan (see the NIST Contractor Safety Program); and
2. NIST employees and associates conducting NIST work at sites owned and operated by other organizations in accordance with an analogous safety program that has been determined by NIST to provide an assurance of safety comparable to that provided by this program (see the NIST-Workers-at-Non-NIST-Sites Safety Program).

NIST employees and associates to whom the provisions of this program apply are referred to in this program as “covered employees and associates”.

**X.03 Policy**  
In accordance with federal regulations, Department of Commerce policy, and management system standards such as ANSI Z10, OHSAS 18001, and ISO 19011, it is NIST policy to periodically assess its OHSMS.

**X.04 Legal Authority**

1. Public Law 91-596, (Williams-Steiger) Occupational Health and Safety Act of 1970, Section 19, Federal Agency Safety Programs and Responsibilities.
2. Public Law 107-204, Sarbanes-Oxley Act of 2002.
3. Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.
4. Executive Order 13148, Greening the Government Through Leadership in Environmental Management.
5. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management.
6. Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance.
7. 10 CFR Part 20, Standards for Protection Against Radiation, specifically Subpart 20.1011, annual review of program.
8. 29 CFR Part 1910, Occupational Safety and Health Standards for General Industry.
9. 29 CFR Part 1926, Safety and Health Regulations for Construction.
10. 29 CFR Part 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters, specifically:
11. Subpart D—Inspection and Abatement, including 1960.25, Qualifications of safety and health inspectors and agency inspections; 1960.26, Conduct of inspections ; 1960.27, Representatives of officials in charge and representatives of employees; and 1960.31, Inspections by OSHA.
12. Letter of interpretation for Subpart D, 1960.25(c) and 1960.26(c), relevant to annual safety and health inspections. (May 29, 1992).
13. U.S. Department of Commerce, Office of Occupational Safety and Health. Policy Statement.

1. Relevant policies and procedures of the U.S. Department of Commerce Occupational Safety and Health Manual, specifically Chapter 9, Occupational Safety and Health Inspection Program.
2. Relevant sections of the National Institute for Standards and Technology’s Administrative Manual, specifically Subchapter 12.01, Safety Operational System (SOS); Subchapter 12.03, Ionizing Radiation Safety; and Subchapter 12.05, Environmental Management System (EMS) Program.

**X.05 Definitions**

1. Administrative Safety Programs – Component programs of NIST’s OHSMS that address safety support functions such as emergency preparedness, incident investigation, performance assessment, and document and record control. These programs provide a framework for NIST to manage its regulatory and policy compliance and improve OHSMS performance, including risk and opportunity identification, analysis, target setting, and measurement.
2. American National Standards Institute (ANSI) – Organization that coordinates the development and use of voluntary consensus standards in the United States and represents the needs and views of U.S. stakeholders in standardization forums around the globe.
3. ANSI Z10 – American National Standard for Occupational Health and Safety Management Systems (ANSI/AIHA Z10-2005), a voluntary consensus standard for occupational health and safety management systems, published by the American Industrial Hygiene Association and approved by the American National Standards Institute. ANSI Z10 provides critical management system requirements and guidelines for improvement of the OHSMS.
4. Assessment Finding – A documented finding of an activity or condition that represents either a failure to meet a specified requirement (e.g., regulatory, contract, or quality) or an imminent threat to human or environmental health and safety. Assessment findings are documented as objective evidence of an occurrence or condition witnessed, measured, and/or tested at a specific time and place.
5. Assessment Observation – A documented observation of an activity or condition that is questionable, inconsistent with good management practice, or adverse to quality or that represents an opportunity for improvement. Assessment observations provide objective evidence of the activity or condition witnessed at a specific time and place and the recommended or anticipated improvement.
6. Associate – An individual working at but not employed by NIST. Types of NIST associates include, but are not limited to, foreign and domestic guest researchers, facility users, contractors, and students. The following link lists all types of NIST Associate: <http://www-i.nist.gov/div222/NAIS/natypes%20web.htm>.
7. Compliance – Meeting the requirements of federal, local, and/or state regulations, statutes, codes, and standards.
8. Conformance – Meeting the requirements of NIST’s OHSMS and approved standards such as ANSI Z10, OHSAS 18001, and ISO 19011.
9. Corrective Action – Steps taken to prevent the recurrence of an undesirable condition or situation by removing contributing factors and the root cause. Corrective actions are problem-solving processes to fix an existing problem.
10. Deployment Tools – Procedures, forms, instructions, user guides, IT applications, training.
11. Employee – An individual employed by NIST.
12. Environmental Management Programs – NIST programs established under its Environmental Management System (e.g., Air Compliance and Storm Water Management) that are subject to the provisions of this Assessment Program.
13. Hazard – A potential source of harm.
14. Incident – An unexpected work-related event in which any of the following, individually or in combination, occurred or could have occurred:

* A work-related injury, illness, or fatality;
* An exposure to a hazardous material;
* A release of a hazardous material within any NIST facility or to the environment;
* Damage to, or loss of, equipment or property.

The “could have occurred” situation corresponds to “near misses”, defined below.

1. Individual Document Custodian – An OSHE employee assigned as the contact to answer technical and administrative questions and responsible for the following: (1) Monitoring changes in their document; (2) Determining if proposed changes from end-user warrant document revision; (3) Answering questions concerning the document; (4) Conducting reviews at prescribed intervals; and (5) Assisting in the performance of Document and Records Control Program audits.
2. Inspection – Inspections use observation, measurement, testing, and judgment to evaluate conformity. Inspection results are compared with specified requirements in order to establish whether conformity has been achieved.
3. ISO 19011 – Guidelines for Quality and/or Environmental Management Systems Auditing, a voluntary consensus standard published by the International Organization for Standardization. ISO 19011 provides guidance for management of assessment (audit) programs, the conduct of internal or external assessments, and assessor (auditor) competence and evaluation.
4. Management System – A set of interrelated or interacting elements that organizations use to implement policy and achieve objectives. A management system establishes program leadership roles, responsibilities, authorities, and accountabilities (R2A2s).
5. Near Miss – Also known as a “near-accident”, “near hit”, or “close call”, an incident that did not result in any of the following, either individually or in combination, but had a plausible likelihood of doing so:

* A work-related injury, illness, or fatality;
* An exposure to a hazardous material;
* A release of a hazardous material within any NIST facility or to the environment;
* Damage to, or loss of, equipment or property.

1. NIST Associate – An individual working at NIST, but not employed by the agency. Types of NIST associates include, but are not limited to, foreign and domestic guest researchers, students, contractors, and facility users.
2. NIST Employee – An individual employed by NIST.
3. NIST Visitor – An individual other than a NIST employee or NIST associate who has restricted access to NIST facilities for a specified period of time.
4. Objective Evidence – Information or data that demonstrates or proves that something exists or is true. Objective evidence includes documented observations, measurements, standard tests, or comparisons to a standard.
5. Occupational Health and Safety Assessment Series (OHSAS) − A set of standards and implementation guidelines published by BSI Management Systems America for occupational health and safety management systems.
6. Occupational Health and Safety Management System (OHSMS) – A framework of coordinated processes that allows organizations to efficiently direct resources to identify and control safety and environmental risks, reduce the potential for incidents, assure regulatory and policy compliance, and improve overall performance.
7. Occupational Health and Safety Management Systems – Requirements (OHSAS 18001) − An internationally recognized assessment specification published by BSI Management Systems America for occupational health and safety management systems.
8. Occupational Health and Safety Management Systems – Guidelines for the Implementation of OHSAS 18001:2007 (OHSAS 18002) − A guidance document published by BSI Management Systems America for development of occupational health and safety management systems that conform with OHSAS 18001 requirements.
9. Occupational Health and Safety Programs – Component programs of NIST’s OHSMS that address disciplines such as chemical hygiene, electrical safety, respiratory protection, and hearing conservation. These programs establish written action plans for identifying and controlling hazards, defining responsibilities, and responding to emergencies.
10. Organizational Unit (OU) – Term used herein to denote any of the following: the Office of the Director, the three Associate Director organizations, the two NIST Centers, the four NIST Laboratories, the three Extramural Programs, and the five Chief Offices.
11. Organizational Unit (OU)/Division Safety Personnel – Employees, such as OU Safety Coordinators and Division Safety Representatives, who perform designated safety-related duties for their OU or division on a full- or part-time basis.
12. OSHE Safety Program Manager – An OSHE employee appointed by the CSO who carries out OSHE's assigned roles and responsibilities for a given NIST safety program.
13. Performance – In the context of the Assessment Program, performance includes quality, timeliness, efficiency, effectiveness, and reliability.
14. Preventive Action – Steps taken to remove the causes of potential occurrences or situations that would be undesirable and prevent their occurrence. Preventive actions are designed to prevent occurrence of a potential problem that has not yet occurred.
15. Process Inputs – Factors that guide, limit, or influence a process. Examples include policy statements, regulatory requirements, electrical safety codes, industry standards, and directives from NIST management.
16. Process Outputs – Results or products generated by a process. Examples include completed inspection checklists, assessment summary reports, and program performance ratings.
17. Program Deployment Tools – Procedures, forms, instructions, user guides, IT applications, training.
18. Record – A document showing or stating results achieved or providing information or data of activities performed.
19. Shall/Should/May –
20. Shall (Must or Will): Indicates that the performance of an item or portion of a procedure is mandatory.
21. Should: Indicates that the performance of an item or portion of a procedure is not mandatory, but the full implications of not performing that item or portion of a procedure must be understood and carefully weighed before choosing a different course.
22. May: Indicates that the performance of an item or portion of a procedure can be considered for use, or non-use, at the discretion of the individual responsible for the action.
23. Substantive Change – A significant modification or expansion of the nature and scope of an existing OHSMS policy, program, or tool. For example, a substantive change would result in: (1) changes to staff or supervisory responsibilities; (2) changes or enhancements to occupational health and safety, administrative safety, or environmental management (SHE) practices, processes, and/or procedures; (3) new standards and requirements for SHE compliance; and/or (4) other changes of similar magnitude.

**X.06 Acronyms**

1. AIHA – American Industrial Hygiene Association
2. ANSI – American National Standards Institute
3. CAPA – Corrective and Preventive Action
4. CFR – Code of Federal Regulations
5. CSO – Chief Safety Officer
6. DCSO – Deputy Chief Safety Officer
7. ESC – Executive Safety Committee
8. ISO – International Organization for Standardization
9. IT – Information Technology
10. MMAP – Monitoring, Measurement, and Assessment Program
11. NIST – National Institute of Standards and Technology
12. OHSAS – Occupational Health and Safety Assessment Series
13. OHSMS – Occupational Health and Safety Management System
14. OSHA – Occupational Safety and Health Administration
15. OSHE – Office of Safety, Health, and Environment
16. OU – Organizational Unit
17. R2A2s – Roles, Responsibilities, Authorities, and Accountabilities
18. SHE – Occupational Health and Safety, Administrative Safety, or Environmental Management [program]
19. SPTS – NIST Safety Program Tracking System

**X.07 Responsibilities**

1. OU Directors are responsible for:
2. Establishing policies and procedures as needed for implementing this program within their OUs and ensuring the implementation of those policies and procedures;
3. Ensuring subordinate managers have the authority, resources, and training needed to implement this program;
4. Participating on Assessment Teams as required;
5. Reviewing assessment results and reports relevant to their respective OUs prior to release;
6. Distributing assessment results (e.g., from self-assessments) from their respective OUs to the DCSO, the OSHE Assessment Program Manager, relevant OSHE Safety Program Managers, other OU Directors, and others as required; and
7. Reporting on the performance of the OHSMS and its components as relevant to their respective OUs.

**NOTE:** For each of the laboratory divisions in Boulder, Colorado, the NIST-Boulder Labs Director and the Laboratory Director for the division in question each have these responsibilities. They should work together to coordinate their respective policies and procedures to the maximum extent possible to minimize any additional and undue burden on the division, which must otherwise follow two different sets of policies and procedures.

1. The Chief Safety Officer is responsible for:
2. Ensuring that this program is integrated effectively into NIST’s overall safety management system;
3. Appointing an OSHE employee to serve as the OSHE Assessment Program Manager to carry out the responsibilities for this position delineated below;
4. Ensuring that the OSHE Assessment Program Manager has the authority, resources, and training necessary to carry out their responsibilities for this position delineated below;
5. Ensuring that this program is effective, efficient, and continually improved to meet the needs of NIST management, employees, and associates;
6. Approving substantive changes to the Assessment Program, including the frequency of OHSMS assessments and/or significant revisions to documents and deployment tools;
7. Approving initial OHSMS assessment criteria and any substantive revisions to those criteria;
8. Reviewing and approving assessment results and reports as required; and
9. Issuing reports on NIST’s OHSMS performance.
10. The Deputy Chief Safety Officer is responsible for:
11. Acting on behalf of the CSO as needed for Assessment Program responsibilities as defined in this program.
12. Division Chiefs (or Equivalents) are responsible for:
13. Implementing this program within their organizations in accordance with the policies and procedures established by their OUs;
14. Participating on Assessment Teams as required; and
15. As appropriate, distributing assessment results (e.g., from self-assessments) from their respective divisions to the DCSO, the OSHE Assessment Program Manager, relevant OSHE Safety Program Managers, relevant OU Directors, and others as required.

**NOTE:** Some NIST OUs do not have Division Chiefs; these OUs shall designate other individuals to carry out these responsibilities.

1. OSHE Division Chiefs are responsible for:
2. All Division Chief responsibilities as defined in this program; and
3. For their respective OUs, identifying and approving assessment criteria for OHSMS assessments, program-level assessments, and evaluations and inspections initiated at NIST’s direction.

1. Organizational Unit (OU)/Division Safety Personnel are responsible for:
2. Assisting with the implementation of this program in accordance with policies and procedures of their OU/division;
3. Maintaining awareness of conditions, activities, or changes in their respective OUs that could trigger the need for review by the OSHE Assessment Program Manager to verify regulatory and policy applicability and compliance;
4. Assisting the OSHE Assessment Program Manager and OSHE Safety Program Managers with planning, coordinating, and implementing assessment activities for their respective OUs;
5. Participating on Assessment Teams as required and in accordance with their OU’s procedures; and
6. As appropriate, distributing assessment results (e.g., from self-assessments) from their respective OUs to the OSHE Assessment Program Manager, relevant OSHE Safety Program Managers, relevant OU Directors, and others as required.
7. Covered Employees and Associates are responsible for:
8. Completing the training designated by this program and their OUs and working in accordance with that training;
9. Operating in accordance with the requirements of this program and their OUs; and
10. As directed, participating in assessment activities, to include serving as an Assessment Team member.
11. OSHE Safety Program Managers are responsible for:
12. Serving as the primary Point of Contact, Subject Matter Expert, and Individual Document Custodian for their respective Administrative Safety Program or Occupational Health and Safety Program;
13. Providing NIST employees and associates with straightforward interpretations and explanations of how relevant regulations, codes, and standards in their respective program areas apply in the NIST environment;
14. Ensuring effective communication with management and covered employees and associates on issues related to their respective programs;
15. Creating, updating, and making available program deployment tools as necessary;
16. Ensuring that training on their respective programs is available and meets the needs of their organization;
17. Assisting the OSHE Assessment Program Manager with scheduling and scoping assessments for their respective SHE programs; and
18. Reviewing their respective programs on the approved cycles to ensure that programs reflect current regulations, codes, standards, and best practices.
19. The OSHE Assessment Program Manager is responsible for:
20. All OSHE Safety Program Manager responsibilities as defined in this program;
21. Recommending an assessment schedule for the OHSMS, approving schedules for program-level assessments, and developing and publishing assessment calendars;
22. Providing guidance to Division Chiefs, OSHE Division Chiefs, OSHE Safety Program Managers, and OU Directors in developing and identifying appropriate criteria and scope for program-level and NIST-directed assessments;
23. Approving OHSMS assessment criteria;
24. Developing report formats for OHSMS and NIST-directed assessments, and approving report formats for program-level assessment results;
25. Identifying the required qualifications for Lead Assessors and Assessment Team members, and establishing the NIST standards for assessor ethics, conduct, and competence (see example in Appendix X.D);
26. Approving nominations for Lead Assessors;
27. Providing oversight and guidance to Assessment Teams and the OUs being assessed, to include conflict resolution;
28. Reviewing final assessment results and reports;
29. Distributing assessment results to the CSO, DCSO, relevant OSHE Safety Program Managers and OU Directors, and others as required; and
30. Participating on Assessment Teams as required.
31. The Executive Safety Committee (ESC) is responsible for:
32. Providing mechanisms for employee participation in Assessment Program activities; and
33. Providing its members with a venue to provide input and feedback on the Assessment Program.
34. Lead Assessors are responsible for:
35. Assisting the OSHE Assessment Program Manager, OSHE Safety Program Managers, and OU Directors with planning, scoping, and coordinating assessment activities as directed;
36. Selecting Assessment Teams, assigning tasks, and ensuring that tasks are completed in accordance with established schedules, procedures, and protocols;
37. Planning assessments as directed, developing interview scripts and assessment materials, conducting opening and closing conferences, and conducting field assessments and interviews;
38. Leading and managing assessments in accordance with approved protocols, assessment plans, and the NIST standard for assessor ethics and conduct;
39. Compiling assessment documentation for release to the OSHE Assessment Program Manager and/or others as directed;
40. Recording the release of assessment results, reports, and documentation to recipients as directed by the OSHE Assessment Program Manager; and
41. Managing assessment documentation in accordance with the provisions of the Document and Record Control Program and/or other procedures and protocols as directed.
42. Assessment Teams are responsible for:
43. Completing all assessment tasks as assigned by the Lead Assessor and in accordance with approved protocols, assessment plans, and the NIST standard for assessor ethics and conduct; and
44. Notifying the Lead Assessor of questions, issues, or conflicts that arise during the course of assessment activities.

**X.08 Program Elements**

1. Assessment Types
2. OHSMS Assessment
3. The OHSMS Assessment is a systematic examination, evaluation, and measurement of the implementation of NIST’s overall OHSMS and its components.
4. The assessment shall determine whether the OHSMS meets the requirements of management system standards such as ANSI Z10 and OHSAS 18001 in evaluating the cumulative effectiveness of assessment activities (e.g., laboratory and workplace inspections, self-assessments, and compliance assessments) in managing risk, minimizing loss, and providing an overall assessment of program performance.
5. Program-Level Assessment
6. A program-level assessment is any form of systematic examination, evaluation, and measurement of any component of NIST’s OHSMS. Components include programs for specific disciplines (e.g., respiratory protection, incident investigation, hazardous materials, and radiation safety), other NIST programs, and OU-specific responsibilities (e.g., annual Workplace Safety Assessment performed by the designated “owner” or space manager).
7. Periodic assessment of many OHSMS components is mandated by federal and state regulations and Department of Commerce and NIST policies (see Appendix X.B). However, in all cases, program-level assessments shall be designed and tailored to meet specific requirements, with the common objective of compliance assurance and risk reduction.
8. Evaluations and Inspections Initiated at NIST’s Direction
9. Various types of assessments are required for NIST to achieve certain regulatory or legal obligations, address areas of increased risk, and as a means to ensure continual improvement of the OHSMS. These assessments shall be scoped as tools for evaluating or measuring target criteria within specific parameters (e.g., limited-scope laboratory inspections or targeted assessment of required documentation for a selected administrative protocol).
10. Assessment Scheduling
11. General Requirements for Assessment Scheduling
12. The schedule for assessments shall be established for purposes of compliance assurance and risk reduction.
13. In establishing assessment schedules, the OSHE Assessment Program Manager shall collaborate with OU Directors, OSHE Safety Program Managers, and OU/Division Safety Personnel to ensure that regulatory and policy requirements are met and that programs and organizational functions with higher levels of risk are assessed more frequently than those with lower levels of identified risk.
14. Collaboration and planning shall be employed to ensure efficiency and prevent unnecessary duplication of effort where feasible. For example, if the scope of an assessment of Hazard Reviews includes physical assessment of an activity that includes hazard signage, electrical safety, and lock out/tag out, the requirement for assessment of those individual programs could very likely be met, provided that adequate documentation and records are shared and maintained as required.
15. A perpetual calendar, scheduling templates and tools for different assessment types, and a scheduling matrix that identifies common assessment requirements among OUs shall be developed and maintained by the OSHE Assessment Program Manager.
16. Requirements for Assessment Scheduling by Type
17. OHSMS Assessment
18. The initial OHSMS assessment shall be initiated within 12 months of the date that 80 percent of substantively revised SHE programs are implemented.
19. Subsequent OHSMS assessments shall be initiated within 36 months of completing the previous OHSMS assessment.
20. At the discretion of the CSO, DCSO, and/or OSHE Assessment Program Manager, OHSMS assessments may occur at other times and/or frequencies.
21. Program-Level Assessments
22. Program-level assessments shall be scheduled at frequencies mandated by applicable federal or state regulations or by Department of Commerce and NIST policies.
23. In the absence of specific regulatory or policy requirements for frequency of program-level review and assessment, the OSHE Assessment Program Manager, relevant OSHE Safety Program Managers, and relevant OU/Division Safety Personnel shall establish assessment schedules that reflect frequencies appropriate for the identified levels of hazard or risk.
24. Evaluations and Inspections Initiated at NIST’s Direction
25. NIST-directed assessments shall be scheduled as appropriate for the purpose, scope, and objectives identified for the assessment activity, as identified by the ESC, CSO, DCSO, OSHE Assessment Program Manager, and/or relevant OSHE Safety Program Manager(s).
26. Assessment Criteria and Parameters
27. General Requirements for Criteria and Parameters
28. Clearly defined criteria (“what” specifically is to be observed and evaluated) and the parameters for those criteria (“where” in terms of physical or organizational boundaries) shall be established for each assessment type or activity. Exceptions or additions to criteria or parameters shall be clearly identified and documented.
29. Assessment criteria may be any aspect (processes, documentation, and/or requirements) of the OHSMS or its components. The table below presents a simple example of the concept for defining the criteria and parameters for an assessment.

|  |  |  |
| --- | --- | --- |
| **Criteria**  **(what process, documentation, and/or requirements are to be assessed?)** | **Parameters**  **(where, within physical or organizational boundaries?)** | **Exceptions**  **and**  **Additions** |
| Inspection tags on fire extinguishers | Gaithersburg campus Buildings A, B, and C,  1 January to 30 June 2011 | * Excludes fire extinguishers in radiation control areas of Building C * Includes fire extinguishers located in temporary construction trailer adjacent to Building A |

1. Assessment criteria and parameters shall be established on a case-by-case basis to meet specific regulatory and policy requirements, and objectives for compliance assurance and risk management.
2. The level of management direction, guidance, and approval required for assessment criteria and parameters shall be determined on the basis of identified risk level and program maturity.
3. Criteria and Parameters by Assessment Type
4. OHSMS Assessment
5. Criteria for the OHSMS assessment may include any aspects (processes, documentation, and/or requirements) of the OHSMS or its components.
6. Management system standards such as ANSI Z10 and OHSAS 18001 shall be used as guiding principles for identifying appropriate criteria, with information from the Objectives Identification/Strategic Planning, Management Review/Assessment and Prioritization of Needs, and Corrective and Preventive Action (CAPA) programs providing essential input for identification of specific assessment criteria.
7. For the initial OHSMS assessment, criteria shall be approved by the CSO, DCSO, and OSHE Division Chiefs.
8. Parameters for the OHSMS assessment shall include the Gaithersburg campus, Boulder campus, and other locations as directed by the CSO, DCSO, and/or OSHE Assessment Program Manager.
9. Program-Level Assessments
10. Criteria for program-level assessments may include any aspects (processes, documentation, and/or requirements) of individual SHE programs, other NIST programs, or organizational functions within the OHSMS.
11. Criteria shall be established by the OSHE Safety Program Managers on the basis of applicable regulatory and policy requirements and industry “best practices” for each discipline (e.g., respiratory protection) or organizational function.
12. Parameters for program-level assessments shall include the Gaithersburg campus, Boulder campus, and other locations as directed by the CSO, DCSO, and/or OSHE Assessment Program Manager.
13. Evaluations and Inspections Initiated at NIST’s Direction
14. Criteria for NIST-directed assessment may include any aspects (processes, documentation, and/or requirements) of the OHSMS, one or more OHSMS components, or other sources.
15. Criteria for any NIST-directed assessment shall be established by the manager or OU directing the assessment, with guidance and approval from relevant OU Directors, the OSHE Assessment Program Manager, and relevant OSHE Safety Program Managers.
16. Assessment criteria shall be selected to align with and benefit compliance assurance and risk management objectives while meeting specific, targeted objectives.
17. Parameters for NIST-directed assessments shall be determined on a case-by-case basis to meet specific, targeted objectives.
18. Information to be Collected
19. Assessment information and data shall be collected and documented on appropriate media (electronic and/or paper) using templates, forms, and/or checklists approved by the relevant OSHE Safety Program Managers and/or the OSHE Assessment Program Manager.
20. At the discretion of the relevant OSHE Safety Program Manager and OSHE Assessment Program Manager, additional assessment instruments (e.g., self-assessments or inspections conducted by OUs) shall be accepted as equivalent information sources for the purpose of assessment and evaluation.
21. For all assessment types, the data and information (objective evidence) to be collected and documented shall be determined primarily by the criteria selected for assessment but should include additional relevant information recorded as findings or observations.
22. Assessment Teams shall have adequate qualifications or training to ensure that information is collected and documented during assessments in accordance with the following definitions:
23. Objective evidence is information or data that demonstrates or proves that something exists or is true. Objective evidence includes observations, measurements, standard tests, or comparisons to a standard.
24. Assessment findings represent either a failure to meet a specified requirement or an imminent threat to human or environmental health and safety. Assessment findings are documented as objective evidence of an occurrence or condition witnessed, measured, and/or tested at a specific time and place.
25. Assessment observations are documented observations of activities or conditions that are questionable, inconsistent with good management practice, or adverse to quality or that represent an opportunity for improvement. Assessment observations provide objective evidence of the activity or condition witnessed at a specific time and place and the recommended or anticipated improvement.
26. Information and Data Management Requirements
27. The data and information collected, documented, and compiled during assessment activities shall be managed in accordance with specific regulatory requirements (e.g., confidentiality, reporting format and frequency, and/or records retention) and the provisions of the Document and Record Control Program.
28. In addition, measures shall be employed to ensure appropriate protection of data and information with regard to physical security, information assurance, patent rights, copyrights, export control, and review by management prior to release.
29. Assessment Preparation
30. Preparation for assessments of all types shall include the following essential elements and any additional steps necessary to ensure effective and efficient completion:
31. Planning
32. Establish assessment’s purpose, scope, criteria, and key points of contact.
33. Identify staff resources needed, including number of assessors and qualifications.
34. Prepare materials for opening and closing conferences and Assessment Team meetings – An opening conference is held to discuss the nature of the assessment, present assessment objectives, characterize the scope, and establish clear lines of communication. The Lead Assessor and Assessment Team hold the closing conference to present and explain assessment findings and resolve divergences. The Lead Assessor also holds Assessment Team orientation and close-out meetings for each assessment activity.
35. Finalize logistical and administrative details (e.g., building access, emergency planning, and access to documents and/or computer systems).
36. Request, distribute, and review relevant documentation (e.g., procedures, references, standards, checklists, log sheets, sampling plans, and prior assessments).
37. Notify key points of contact and affected organizations with appropriate levels of information.
38. Assessment Team Selection and Orientation
39. Designate Lead Assessor.
40. Assemble Assessment Team(s).
41. Assign assessment tasks.
42. Hold orientation meeting with Assessment Team.
43. Identify and Apply Standards for Assessor Ethics and Conduct
44. To address potential legal and professional issues, identify and apply factors of ethical and professional conduct and concepts of due diligence and due care with respect to confidentiality, conflict of interest, credibility, independence, objectivity, and qualifications (see Appendix X.D).
45. Identify legal and financial ramifications of improper assessor actions, such as carelessness, negligence, and discovery of illegal activities or unsafe conditions. Anticipate the effect that certain assessment results can have on regulatory and civil liabilities of individuals or any NIST entity.
46. Assessment Instruments and Tools
47. Assessment checklists (standard and customized) with online links to specific requirements in regulations and policies.
48. Assessment guidelines, work instructions, and process diagrams that provide step-by-step instructions and guidelines as well as illustrations of process interactions.
49. Assessment scheduling tools (e.g., perpetual calendar and scheduling matrix).
50. OSHE and OU web pages on NIST Intranet.
51. Loaned assessor program, where temporary assignments as an assessor are made for a particular assessment activity.
52. Assessment Strategies
53. Identify and use various tactical methods for conducting assessments, such as forward (from the requirements) and backward (to the requirements) tracing and discovery (fact-finding process).
54. As required, modify assessment methods if issues or conflicts develop.
55. Assessment Process
56. Assessments shall be conducted in accordance with procedures and protocols established in this program, with oversight from the OSHE Assessment Program Manager.
57. In general, the assessment process shall begin after completion of all planning and preparation steps and shall include (depending on scope) the following basic elements:
58. Hold orientation meeting with Assessment Team.
59. Conduct opening conference.
60. Conduct field assessments and interviews.
61. Compile documentation, to include checklists, copies of test results and log sheets, calculation sheets, and notes.
62. Distribute assessment results and reports to OU Directors or designated representatives for review and verification of fact.
63. Conduct closing conference.
64. Hold closeout meeting with Assessment Team to discuss overall successes, issues, concerns, and/or lessons learned.
65. Release assessment results as directed.
66. Compilation and Review of Assessment Results
67. Assessment results, to include completed checklists, interview logs, and notes, shall be compiled and transferred or downloaded into standard report formats for management and retention as records of objective evidence.
68. Assessment documentation shall undergo appropriate levels of review and verification of fact by the OU Director, the Assessment Team, and auditee(s).
69. Distribution of Assessment Results
70. Approved assessment results and reports shall be distributed as directed for further review and analysis, input to corrective or preventive actions and/or management review processes, and posting to online dashboards and web pages.

j. Periodic Assessment

In accordance with the provisions of this Assessment Program, this program shall be periodically assessed to ensure compliance with regulatory and policy requirements and conformance with ANSI Z10, OHSAS, and/or ISO 19011 standards or best practices as applicable to NIST.

**X.09 References**

1. American National Standard for Occupational Health and Safety Management Systems, ANSI/AIHA Z10-2005, July 25, 2005.
2. Competency Framework for Environmental Health and Safety Auditors, Board of Environmental, Health & Safety Auditor Certifications, <http://www.beac.org/guidance-gb.html#controls>
3. Environmental Health and Safety Audits, L.B. Cahill with R. W. Kane, Government Institutes, 9th edition, 2010.
4. ISO 19011, Guidelines for Quality and/or Environmental Management Systems Auditing, International Organization for Standardization, 2002.

OHSAS 18001, Occupational Health and Safety Management Systems – Requirements, BSI Management Systems America, Inc., 2007.

1. OHSAS 18002, Occupational Health and Safety Management Systems – Guidelines for the Implementation of OHSAS 18001, BSI Management Systems America, Inc., 2008.
2. OHSAS 18004, Guide to Achieving Effective Occupational Health and Safety Performance, BSI Management Systems America, Inc., 2008.

Safety, Health, and Asset Protection, Management Essentials, R.W. Lack, editor, CRC Press, 2002.

Safety, Health, and Environmental Auditing, A Practical Guide, S.W. Pain, CRC Press, 2010.

Safety Metrics, Tools and Techniques for Measuring Safety Performance, C.A. Janicak, Government Institutes, second edition, 2010.

**X.10 Review Cycle**

This program will be reviewed on a cyclical basis no less than once every 3 years.

**X.11 Revision History**

None

# Appendix X.A: Safety MANAGEMENT SYSTEM STANDARDS

# Representative Safety Management System Standards

# ANSI/AIHA Z10-2005, American National Standard for Occupational Health and Safety Management Systems, published by American Industrial Hygiene Association, approved by American National Standards Institute.

# http://tsapps-i.nist.gov/safety/safety/ANSI%20AIHA%20Z10%20(2005).pdf

# OHSAS 18001:2007, Occupational Health and Safety Management Systems –Requirements, published by BSI Management Systems America, Inc.

# http://www.bsiamerica.com/en-us/Assessment-and-Certification-services/Management-systems/Standards-and-schemes/OHSAS-18001

# ISO 19011:2002, Guidelines for Quality and/or Environmental Management Systems Auditing, published by International Organization for Standardization.

<http://www.iso.org/iso/catalogue_detail?csnumber=31169>

# Elements of Management System Standards Applicable to NIST’s OHSMS

# As required by ANSI Z10, OHSAS 18001, ISO 19011, and similar management system standards, NIST shall establish and implement processes to:

1. Assign roles, responsibilities, authorities, and accountabilities (R2A2s) for assessing performance of the OHSMS and its components.
2. Establish assessment protocols and procedures that reflect best practices for planning and conducting assessments and for identifying and evaluating assessor competence.
3. Conduct periodic assessments to determine whether NIST has competently applied and efficaciously implemented OHSMS fundamentals to identify and control hazards and manage risk. Assessment scope shall also include evaluation of operational controls, emergency preparedness and response, and adequacy of training, awareness, and competence.
4. Document and communicate assessment results to:
5. Those responsible for hazard mitigation and corrective or preventive action.
6. Appropriate levels of management.
7. Other affected parties, including employees and employee representatives.
8. Immediately communicate imminent hazards so that prompt corrective action, which may include a STOP WORK order, can be taken.

**Appendix X.B: REPRESENTATIVE LIST OF PROGRAMS AND ORGANIZATIONAL FUNCTIONS INCLUDED IN SCOPE OF ASSESSMENT PROGRAM**

The following list represents the major components of NIST’s Occupational Health and Safety Management System (OHSMS) subject to the provisions of the Assessment Program. At the discretion of the CSO, DCSO, and OSHE Assessment Program Manager, additional programs and organizational functions shall be monitored and evaluated under the provisions of this program.

1. Air Compliance Program
2. Annual Workplace Safety Assessment
3. Assessment
4. Biosafety
5. Bloodborne Pathogens
6. Chemical Hygiene
7. Compressed Gases
8. Communications
9. Confined Space
10. Contractor Safety
11. Corrective and Preventive Action
12. Cryogens
13. Design Review and Management of Change
14. Document and Record Control
15. Electrical Safety
16. Emergency Preparedness
17. Employee Participation
18. Equipment and Machine Safety
19. Ergonomics
20. Fire Protection and Prevention
21. Firearms Safety
22. Fleet Safety
23. Hazard Communication
24. Hazard Signage
25. Hazardous Materials
26. Hazardous Waste
27. Health and Wellness
28. Hearing Conservation
29. Hierarchy of Controls
30. Incident Investigation
31. Industrial Hygiene
32. Industrial Wastewater Compliance Program
33. Laser Safety
34. Lock Out Tag Out
35. Management Review/Assessment and Prioritization of Needs
36. Material Handling
37. Monitoring, Measurement, and Assessment
38. Nanotechnology
39. Non-Ionizing Radiation Safety
40. Objectives Identification/Strategic Planning
41. Personal Protective Equipment (PPE)
42. Policy Development
43. Procurement Safety
44. Program Implementation Planning and Allocation of Resources
45. Radiation Safety
46. Management Oversight
47. Amendments and Program Changes
48. Facilities
49. Equipment and Instrumentation
50. Material Use, Control, and Transfer
51. Area Radiation Surveys and Contamination Control
52. Training and Instructions to Workers
53. Radiation Protection
54. Radioactive Waste Management
55. Decommissioning
56. Transportation
57. Notification and Reports
58. Posting and Labeling
59. Respiratory Protection
60. Safety Education and Training
61. Storm Water Management Program
62. Walking/Working Surfaces

# Appendix X.C: programs influencing or influenced by the Assessment ProGRAM

# The following administrative safety components of the OHSMS influence, are influenced by, and/or provide input into the Assessment Program:

# [Corrective and Preventive Action Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Corrective%20and%20Preventive%20Action%20Program)

# [Design Review and Management of Change Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Design%20Review%20and%20Management%20of%20Change%20Program)

# [Document and Record Control Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Document%20and%20Record%20Control%20Program)

# [Employee Participation Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Employee%20Participation%20Program)

# [Incident Investigation Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Incident%20Investigation%20Program)

# [Management Review/Assessment and Prioritization of Needs Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Management%20Review/Assessment%20and%20Prioritization%20of%20Needs)

# [Monitoring, Measurement, and Assessment Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Monitoring,%20Measurement%20and%20Assessment%20Program)

# [Objectives Identification/Strategic Planning Program](https://safetyp.nist.gov/apps/spts/SitePages/dashboard/view.aspx?Program=Objectives%20Identification/Strategic%20Planning%20Program)

**APPENDIX X.D: REPRESENTATIVE STANDARDS FOR ASSESSOR ETHICS, CONDUCT, AND COMPETENCE**

The following summaries of standards for assessor ethics, conduct, and competence are representative benchmarks that will be used in developing NIST standards for assessor ethics, conduct, and competence.

a. Board of Environmental, Health & Safety Auditor Certifications, Competency Framework for Environmental Health and Safety Auditors, Ethics and Standards of Conduct

<http://www.beac.org/guidance-gb.html#controls>

The reliance placed on environmental health and safety auditors by those who would benefit from their services imposes an obligation that all auditors maintain high standards of technical competence, morality and integrity. Auditors must understand the meaning and purpose of codes of professional ethics applicable to their work. They should be capable of mature judgment required in applying the codes to audit situations. Codes of Ethics directly applicable to the work of EHS Auditors are those promulgated by BEAC®, Auditing Roundtable, and the Institute of Internal Auditors. The central theme of all three codes is: The auditor shall exercise honesty, objectivity, and diligence in the conduct of all audit activities. Key provisions include:

1. Conflict of Interest

Auditors shall not participate in any activity that may be or may appear to be in conflict with the interests of audit clients or would prejudice their ability to objectively carry out their responsibilities.

1. Independence

Auditors must be independent of the activities that they audit. Auditors are independent when they can carry out their work freely and objectively. Independence permits auditors to render impartial and unbiased judgments.

1. Proficiency

Auditors shall undertake only those services that they can expect to complete with professional competence. They shall continually strive to improve their proficiency and effectiveness and the quality of their work.

1. Material Facts and Disclosure

Auditors shall reveal to the audit client all material facts known to them which if not revealed could either distort reports of operations audited or conceal unlawful practices.

1. Due Professional Care

Auditors must use care, diligence, skill and the judgment expected of a prudent and competent auditor in similar circumstances. They must perform professional services to the best of their ability, with concern for the best interests of the audit client.

1. Confidentiality

Auditors must not use confidential information gained in the course of their work for personal gain or in any other way that would be contrary to the law or reflect adversely on the auditors or the organization they represent.

1. ISO 19011, Section 7, Competence and Evaluation of Auditors, Guidelines for First, Second, and Third Party Auditing of Both Quality and Environmental Management Systems

<http://www.qpatraining.com/iso-19011/iso-19011-section-2.html>

The following principles relate to auditors:

1. Ethical conduct ­ Professionalism in auditing, including trust, integrity, confidentiality, and discretion.
2. Fair presentation ­ The obligation to report truthfully and accurately audit findings, audit conclusions, and audit reports, ensuring that they reflect truthfully and accurately the audit activities. Significant obstacles encountered during the audit and unresolved diverging opinions between the audit team and the auditee must be reported.
3. Due professional care ­The application of diligence and judgment in auditing, which by definition is independent and systematic.
4. Independence ­ The basis for the impartiality of the audit and objectivity of the audit conclusions. Auditors must be independent of the activity being audited and free from bias and conflict of interest. Auditors must maintain an objective state of mind throughout the audit process to ensure that the audit findings and conclusions will be based only on the audit evidence.
5. Evidence-based approach ­ The rational method for reaching reliable and reproducible audit conclusions in a systematic audit approach. Audit evidence must be verifiable, as it is based on samples of the information available at the time of audit, during a finite period of time and with finite resources. The appropriate use of sampling is closely related to the confidence that can be placed in the audit conclusions.