

**COLLIDER-ACCELERATOR DEPARTMENT  
ENVIRONMENTAL MANAGEMENT SYSTEM ACTION PLAN**

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| <p>4.1 General Requirements</p> <p>The organization shall establish and maintain an EMS, the requirements of which are described in ISO 14001. [ISO 14001, 4..1]</p>  | <p>4.1 General Requirements</p> <p>C-A recognizes that the Standards-Based Management System (<a href="#">SBMS</a>) provides a hierarchy of documentation describing Laboratory requirements. A portion of this hierarchy of documents is linked to the <a href="#">C-A Operational Procedures Manual</a>.</p> | <p>4.1 General Requirements</p> <p>The C-A EMS Implementation Team is working to complete an integrated EMS at the C-A Department level. See the C-A ESH&amp;Q <a href="#">To Do List</a> and note the EMS task descriptions and persons responsible.</p> |
| <p>4.2 Environmental Policy</p> <p>Top management shall define the organization's environmental policy and ensure that it:<br/>is appropriate to the nature, scale and environmental impacts of its activities, products or services;<br/>includes a commitment to continual improvement and prevention of pollution;<br/>includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;<br/>provides the framework for setting and reviewing environmental objectives and targets;<br/>is documented, implemented and maintained and communicated to all employees;<br/>is available to the public. [ISO 14001, 4.2]</p> | <p>4.2 Environmental Policy</p> <p>Top management has defined the BNL's environmental policy through issuance of an <a href="#">Environmental Stewardship Policy</a>. The policy is communicated through plaques, brochures and training programs such as <a href="#">GE-ENV-GET</a>.</p>                      | <p>4.2 Environmental Policy</p> <p>The C-A EMS Implementation Team will identify and update C-A training programs to incorporate the <a href="#">Environmental Stewardship Policy</a>. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>              |

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| <p>ISO 14001 4.3 Planning</p> <p>4.3.1 Environmental Aspects and Impacts</p> <p>The organization shall establish and maintain (a) procedure(s) to identify the environmental aspects of its activities, products or services that it can control and over which it can be expected to have an influence, in order to determine those which have or can have significant impacts on the environment. The organization shall ensure that the aspects related to these significant impacts are considered in setting its environmental objectives. The organization shall keep this information up-to-date. [ISO 14001, 4.3.1]</p> | <p>ISO 14001 4.3 Planning</p> <p>4.3.1 Environmental Aspects and Impacts</p> <p>C-A recognizes that the Standards-Based Management System (<a href="#">SBMS</a>) maintains a procedure (<a href="#">Identification of Significant Environmental Aspects and Impacts</a>) to identify the environmental aspects of its activities, products or services. The <a href="#">SBMS</a> requires that the aspects be considered in setting environmental objectives via implementation of the <a href="#">Establishing and Implementing Environmental Objectives</a> subject area.</p> | <p>ISO 14001 4.3 Planning</p> <p>4.3.1 Environmental Aspects and Impacts</p> <p>C-A will follow the <a href="#">Identification of Significant Environmental Aspects and Impacts</a> subject area. The C-A EMS Implementation Team plans to compile a comprehensive listing of all significant aspects within the C-A. See the C-A ESH&amp;Q <a href="#">To Do List</a>. C-A will also use <a href="#">Establishing and Implementing Environmental Objectives</a>. Information shall be kept up to date by establishing an annual review-requirement in C-A procedures.</p> |
| <p>4.3.2 System for Determining Legal and Other Requirements</p> <p>The organization shall establish and maintain a procedure to identify and have access to legal and other requirements to which the organization subscribes, that are applicable to the environmental aspects of its activities, products or services. [ISO 14001, 4.3.2]</p>  | <p>4.3.2 System for Determining Legal and Other Requirements</p> <p><a href="#">SBMS</a> has a subscription service to which staff of C-A may subscribe to maintain access to legal and other requirements.</p>   | <p>4.3.2 System for Determining Legal and Other Requirements</p> <p>C-A is working to achieve full C-A staff participation in the <a href="#">SBMS</a> subscription service. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>   |
| <p>4.3.3 System for Defining Objectives and Targets</p> <p>The organization shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization.</p>  | <p>4.3.3 System for Defining Objectives and Targets</p> <p>C-A Department recognizes that BSA has a system for Critical Outcomes, Objectives and Performance Measures, which is Appendix B of DOE/BSA Contract.</p>   | <p>4.3.3 System for Defining Objectives and Targets</p> <p>C-A Department will implement the <a href="#">Establishing and Implementing Environmental Objectives</a> subject area. This procedure shall be performed initially as part of EMS implementation and then reviewed annually,</p>  |

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| <p>When establishing and reviewing its objectives, an organization shall consider the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the views of interested parties.<br/>The objectives and targets shall be consistent with the environmental policy, including the commitment to prevention of pollution. [ISO 14001, 4.3.3]</p>  |   | <p>documented, and revised as needed when there are changes to the significant environmental aspects of C-A Department processes, or changes in the Laboratory Critical Outcomes, Objectives, and Performance Measures. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |
| <p>4.3.4 Environmental Management Program(s)</p> <p>The organization shall establish and maintain (a) programme(s) for achieving its objectives and targets. It shall include:<br/>designated responsibility for achieving objectives and targets at each relevant function and level of the organization;<br/>the means and time-frame by which they are to be achieved.<br/>If a project relates to new developments and new or modified activities, products or services, program(s) shall be amended where relevant to ensure that environmental management applies to such projects. [ISO 14001, 4.3.4]</p> | <p>4.3.4 Environmental Management Program(s)</p> <p>C-A recognizes that the subject area <a href="#">Establishing and Implementing Environmental Objectives</a> meets these provisions.</p> | <p>4.3.4 Environmental Management Program(s)</p> <p>C-A Department will implement the <a href="#">Establishing and Implementing Environmental Objectives</a> subject area. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>  |

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| <p>4.4 Implementation and Operation</p> <p>4.4.1 Structure and Responsibility</p> <p>Roles, responsibility and authorities shall be defined, documented and communicated in order to facilitate effective environmental management. Management shall provide resources essential to the implementation and control of the EMS. Resources include human resources and specialized skills, technology and financial resources.</p> <p>The organization's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for: ensuring that EMS requirements are established, implemented and maintained in accordance with ISO 14001; reporting on the performance of the EMS to top management for review and as a basis for improvement of the EMS. [ISO 14001, 4.4.1]</p> | <p>4.4 Implementation and Operation</p> <p>4.4.1 Structure and Responsibility</p> <p>The C-A Department recognizes that the BNL <a href="#">Environmental Management System</a>, <a href="#">SBMS R2A2 Profiles</a>, <a href="#">EMS R2A2</a>, and <a href="#">EMS Management Representative R2A2</a> meet these provisions.</p> | <p>4.4 Implementation and Operation</p> <p>4.4.1 Structure and Responsibility</p> <p>C-A has an EMS Management Representative and has established R2A2s for staff. C-A will integrate <a href="#">EMS R2A2s</a>. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |
| <p>4.4.2 Training, Awareness, and Competence</p> <p>The organization shall identify training needs. It shall require that all personnel whose work may create a significant impact upon the environment have received appropriate training.</p> <p>It shall establish and maintain procedures to make its employees or members at each relevant function and level aware of:</p> <p>the importance of conformance with the environmental policy and procedures and with the</p>  | <p>4.4.2 Training, Awareness, and Competence</p> <p>C-A Department recognizes the <a href="#">BNL Training Policy</a>, and recognizes that an <a href="#">EMS Job Specific Training Template</a> is located at the EMS web-site.</p>   | <p>4.4.2 Training, Awareness, and Competence</p> <p>C-A is in compliance with the <a href="#">BNL Training Policy</a> and will use the <a href="#">EMS Job Specific Training Template</a>. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>                       |

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| <p>requirements of the EMS;<br/>the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;<br/>their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the EMS, including emergency preparedness and response requirements;<br/>the potential consequences of departure from specified operating procedures.<br/>Personnel performing the tasks which can cause significant environmental impacts shall be competent on the basis of appropriate education, training, and/or experience. [ISO 14001, 4.4.2]</p> |  |  |
| <p>4.4.3 Communication</p> <p>With regard to its environmental aspects and EMS, the organization shall establish and maintain procedures for:<br/>internal communication between the various levels and functions of the organization;<br/>receiving, documenting and responding to relevant communication from external interested parties.<br/>The organization shall consider processes for external communication on its significant environmental aspects and record its decision. [ISO 14001, 4.4.3]</p>   | <p>4.4.3 Communication</p> <p>C-A Department recognizes internal and external communication requirements in the <a href="#">ISO 14001 "Plus" Environmental Management System Manual</a>.</p> | <p>4.4.3 Communication</p> <p>C-A is working to integrate the appropriate elements of the <a href="#">ISO 14001 "Plus" Environmental Management System Manual</a> at the department level. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |
| <p>4.4.4 EMS Documentation</p>   | <p>4.4.4 EMS Documentation</p>   | <p>4.4.4 EMS Documentation</p>   |

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| <p>The organization shall establish and maintain information, in paper or electronic form, to: describe the core elements of the management system and their interaction; provide direction to related documentation. [ISO 14001, 4.4.4]</p>  | <p>C-A Department recognizes the documentation requirements in the <a href="#">ISO 14001 "Plus" Environmental Management System Manual</a>.</p> | <p>C-A is working to integrate the appropriate elements of the <a href="#">ISO 14001 "Plus" Environmental Management System Manual</a> at the department level. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |
| <p>4.4.5 Document Control</p> <p>The organization shall establish and maintain procedures for controlling all documents required by ISO 14001 to ensure that:</p> <ul style="list-style-type: none"> <li>they can be located;</li> <li>they are periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel;</li> <li>the current versions of relevant documents are available at all locations where operations essential to the effective functioning of the EMS are performed;</li> <li>obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use;</li> <li>any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.</li> </ul> <p>Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specified period. Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of documents.</p> | <p>4.4.5 Document Control</p> <p>The C-A has established document control requirements. See the <a href="#">C-A Conduct of Operations</a>.</p>  | <p>4.4.5 Document Control</p> <p>No further actions planned.</p>  |

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| [ISO 14001, 4.4.5]   |  |   |
| <p>4.4.6 Operational Control</p> <p>The organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. The organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions by:</p> <ul style="list-style-type: none"> <li>establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets;</li> <li>stipulating operating criteria in the procedures;</li> <li>establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors. [ISO 14001, 4.4.6]</li> </ul> | <p>4.4.6 Operational Control</p> <p>The C-A Department has integrated <a href="#">ESH Standard 1.3.6 Work Planning and Control for Operations</a> and <a href="#">ESH Standard 1.3.5 Planning and Control of Experiments</a> into its <a href="#">Operations Procedures Manual</a> and <a href="#">Quality Assurance Manual</a>.</p> | <p>4.4.6 Operational Control</p> <p>C-A is working to update current procedures in order to integrate EMS and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>                 |
| <p>4.4.7 Emergency Preparedness and Response</p> <p>The organization shall establish and maintain procedures to identify the potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them. The organization shall review and revise, where necessary, its emergency preparedness and response</p>   | <p>4.4.7 Emergency Preparedness and Response</p> <p>The C-A Department has emergency procedures in <a href="#">Chapter 3 of the OPM</a>, and occurrence reporting procedures in <a href="#">Chapter 10</a>.</p>  | <p>4.4.7 Emergency Preparedness and Response</p> <p>C-A is working to update current procedures in order to integrate EMS and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |

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| <p>procedures, in particular, after the occurrence of accidents or emergency situations.<br/>The organization shall also periodically test such procedures where practicable. [ISO 14001, 4.4.7]</p>   |  |  |
| <p>4.5 Checking and Corrective Action</p> <p>4.5.1 Monitoring and Measurement</p> <p>The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organization's environmental objectives and targets.<br/>Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organization's procedures.<br/>The organization shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations. [ISO 14001, 4.5.1]</p> | <p>4.5 Checking and Corrective Action</p> <p>4.5.1 Monitoring and Measurement</p> <p>C-A Department has documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. These procedures are in the <a href="#">Operations Procedures Manual</a> and <a href="#">Quality Assurance Manual</a>.</p> | <p>4.5 Checking and Corrective Action</p> <p>4.5.1 Monitoring and Measurement</p> <p>C-A is working to update current procedures in order to integrate EMS and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |

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| <p>4.5.2 Nonconformance and Corrective and Preventive Action</p> <p>The organization shall establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action.</p> <p>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 environmental impact encountered.</p> <p>The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action. [ISO 14001, 4.5.2]</p> | <p>4.5.2 Nonconformance and Corrective and Preventive Action</p> <p>C-A recognizes the <a href="#">Nonconformance and Corrective and Preventative Action</a> subject area.</p> | <p>4.5.2 Nonconformance and Corrective and Preventive Action</p> <p>C-A is working to update current procedures in order to integrate the <a href="#">Nonconformance and Corrective and Preventative Action</a> subject area and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |
| <p>4.5.3 Records Management</p> <p>The organization shall establish and maintain procedures for the identification, maintenance, and disposition of environmental records. These records shall include training records and the results of audits and reviews.</p> <p>Environmental records shall be legible, identifiable and traceable to the activity, product, or service involved. Environmental 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.</p>   | <p>4.5.3 Records Management</p> <p>C-A recognizes the <a href="#">Records Management</a> subject area</p>  | <p>4.5.3 Records Management</p> <p>C-A is working to update current procedures in order to integrate the <a href="#">Records Management</a> subject area and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p>   |

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| <p>Records shall be maintained as appropriate to the system and to the organization, to demonstrate conformance to the requirements of ISO 14001. [ISO 14001, 4.5.3]</p>  |  |  |
| <p>4.5.4 EMS Audit</p> <p>The organization shall establish and maintain (a) programme(s) and procedures for periodic environmental system audits to be carried out, in order to:</p> <p>a) determine whether or not the EMS: conforms to planned arrangements for environmental management including the requirements of ISO 14001; and has been properly implemented and maintained; and</p> <p>b) provide information on the results of audits to management.</p> <p>The organization's audit program, including any schedule, shall be based on the environmental importance of the activity concerned and the results of previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results. [ISO 14001, 4.5.4]</p> | <p>4.5.4 EMS Audit</p> <p>The C-A recognizes the <a href="#">Integrated Assessment Program</a> and the <a href="#">Environmental Assessments</a> subject area.</p> | <p>4.5.4 EMS Audit</p> <p>C-A is working to update current procedures in order to integrate the <a href="#">Integrated Assessment Program</a>, the <a href="#">Environmental Assessments</a> subject area, and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |

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| <p>4.6 Management Review</p> <p>The organization's top management shall, at intervals that it determines, review the EMS, 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.</p> <p>The management review shall address the possible need for changes to policy, objectives and other elements of the EMS, in the light of EMS audit results, changing circumstances and the commitment to continual improvement. [ISO 14001, 4.6]</p> | <p>4.6 Management Review</p> <p>C-A recognizes the Self Evaluation portion of the <a href="#">Integrated Assessment Program</a>, and the Management Review portion of the <a href="#">Environmental Assessments</a> subject area.</p> | <p>4.6 Management Review</p> <p>C-A is working to update current procedures in order to integrate the <a href="#">Integrated Assessment Program</a>, the <a href="#">Environmental Assessments</a> subject area, and the new C-A Department structure. See the C-A ESH&amp;Q <a href="#">To Do List</a>.</p> |