

Collider Accelerator EMS Assessment

ISO 14001

Date: May 13 & 14, 2003

Lead Auditor: R. Savage

Environmental Management System Model	PLANNING		
ELEMENT: 4.3.1	TITLE:	Environmental Aspects	
ISO 14001 STANDARD:			
	NO	PARTIAL	YES
<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 those significant impacts are considered in setting its environmental objectives.</p> <p>The organization shall keep the information up-to-date.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD:			
<p>The mechanism used to document Significant Aspects is the SBMS Subjects Area, Identification of Significant Environmental Aspects and Impacts. The C-A Department identifies environmental aspects during the planning phase of its operations using the Work Planning Systems, and Safety Review Systems. The work planning system has a section that addresses EMS for work done by C-A employees, BNL employees performing work in the C-A complex as well as external contractors performing work within the C-A complex. The key to managements work planning process includes knowing what aspects are associated with their employees daily work processes. C-A also has an EMS team, which reviews the existing significant aspects on an annual basis.</p>			
EXISTING PROCEDURES AND DOCUMENTATION (LIST):			
<p>OPM 2.28, C-A Procedure For Enhanced Work Planning OPM 2.29, C-A Procedure For Enhanced Work Planning For Experimenters OPM 9.1.12, Review of C-A Shielding Design OPM 9.1.15, Guideline For Review Criteria For C-A Experiments OPM 9.2.1, Reviewing Conventional Safety Aspects of an Experiment OPM 9.3.1, Reviewing Conventional Safety Aspects of an Accelerator System Process Evaluations Environmental Aspects Matrix OPM 1.10.2 EMS Task List 2002/3</p>			
COMMENTS: Aspects are appropriately covered, review and update is well managed.			
EVALUATION:			
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE	
AUDIT QUESTIONS:			
<p>Is there a documented and maintained procedure to review and update aspects? What mechanism is used to initiate aspect review/revision when operations change? Is there knowledge and use of significance criteria? Are there records showing that analysis to select significant aspects were done? Was there effort to include aspects over which there is influence? Are there any obvious aspects, which should have been considered and were not? If not, why not?</p>			

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Environmental Management System Model	PLANNING
ELEMENT: 4.3.2	TITLE: Legal and Other Requirements
ISO 14001 STANDARD:	
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.	NO <input type="checkbox"/>
	PARTIAL <input type="checkbox"/>
	YES <input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD:	
Legal requirements come from external agencies to Laboratory level personnel. These requirements are communicated through the generation of subject areas. Cognizant C-A personnel have subscribed to the SBMS subscription Service that notifies users of new and updated subject areas. The C-A Department ECR also, as part of his job function, makes sure that the department is made aware of new requirements and works to assure department compliance to these requirements. The C-A EMP's list legal & other requirements as applicable. The ECR ensures the incorporation of new requirements as a member of the ASSRC and ESRC and through incorporation of new requirements into the process assessments.	
EXISTING PROCEDURES AND DOCUMENTATION (LIST):	
OPM 1.10.2	
COMMENTS: Opportunity for Improvement: During next years Environmental Management Program Revision process, it is recommended that management consider using bullets instead of letter characters that identifies the departments objectives, targets and tasks, which presently may be misinterpreted.	
Noteworthy Practice: The EMS Management Review process continues to evolve by adding self-assessment tasks and Safety and Health objectives this year.	
EVALUATION:	
<input checked="" type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE
	<input type="checkbox"/> MAJOR NONCONFORMANCE
AUDIT QUESTIONS:	
Is there a documented procedure for the organization to identify and have access to all applicable legal requirements?	
Is someone (or more than one) designated to keep unit current on requirements?	
What are that persons resources, references, methods to keep current?	
How is applicability of new requirements determined?	

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Environmental Management System Model		PLANNING	
ELEMENT:	4.3.3	TITLE:	Objectives and Targets
ISO 14001 STANDARD:			
		NO	PARTIAL
		YES	
<p>The organization shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization.</p> <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.</p> <p>The objectives and targets shall be consistent with the environmental policy, including the commitment to pollution prevention.</p>		<input type="checkbox"/>	<input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD:			
<p>C-A objectives and targets are created around the Laboratory's Critical Outcomes and fine-tuned to each specific EMP area. The C-A application of the Laboratory's Critical Outcomes can be found in the C-A Self-Assessment Program. The C-A objectives and Targets are documented on an Environmental Management Program form, which is linked to a Process Evaluation and the significant aspects of that process. Additionally the EMP documents the performance indicators, a description of the program, the potential environmental impacts, legal and other requirements, budget required, the tasks, person responsible for completing the tasks and completion dates, which are measured and tracked in the FATS.</p>			
EXISTING PROCEDURES AND DOCUMENTATION (LIST):			
<p>Environmental Management Program Forms Identification of Significant Environmental Aspects and Impacts C-A Department Environmental Management Matrix of Objectives and Targets for Significant Aspects Form C-A Self-Assessment 2002 BNL FY03 Critical Outcomes & Performance Measures OPM 1.10.2, Environmental Management Program Description EMS Audit FY02 and C-A EMS Flow-Down Matrix Document</p>			
COMMENTS: Noteworthy Practice: Tickler cards being used to assist personnel with tracking and/or monitoring EMS objectives and targets completion date status.			
EVALUATION:			
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE	
AUDIT QUESTIONS:			
<p>Has the organization established and maintained objectives and targets all significant aspects? Have the documented objectives and targets considered legal and other requirements? Are objectives and targets reasonable and measurable? Is there a documented and maintained procedure for periodically reviewing objectives and targets? Are objectives and targets communicated to the employees that are supposed to achieve them? Do objectives and targets reflect a commitment to pollution prevention?</p>			

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Environmental Management System Model	IMPLEMENTATION AND OPERATION		
ELEMENT: 4.4.3	TITLE:	Communication	
ISO 14001 STANDARD:			
With regard to its environmental aspects and environmental management system, the organization shall establish and maintain procedures for: <ul style="list-style-type: none"> a) Internal communication between the various levels and functions of the organization; b) Receiving, documenting and responding to relevant communication from external interested parties. The organization shall consider processes from external communication on its significant environmental aspects and record its decision.	NO	PARTIAL	YES
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD: Internal communication is performed through various means but much of this is grounded in the work planning process, which follows planned weekly meetings throughout the department. It is at these meetings where relevant information regarding EMS and information specific to a particular job or process is communicated. OPM 2.28 has an attachment that details weekly meeting. Additionally, internal communications come in the form of formal memos, e-mail, newsletters, monthly/weekly Group meetings, SBMS Subscription Service, TIER I process, ATS notifications and responses and web postings. External communications are channeled through the BNL public affairs (SIGPA), other community action committees (BER, CAC), and are documented through the CCTS where applicable.			
EXISTING PROCEDURES AND DOCUMENTATION (LIST): OPM 2.12 C-A Web site CCTS OPM 1.10.2 and 1.10.2.c			
COMMENTS: Opportunity for Improvement: In June 2002, C-A enhanced their procedure revision process by adding a section to the new/revised/cancel procedure form that requests the initiator of the proposed procedure revision to include the "Reason for the Revision". Even though this practice is being implemented, the procedural step is not identified in the procedure for implementing New or Revised Permanent Procedures (OPM 1.4.3). It is recommended that management consider revising this OPM to include this practice.			
EVALUATION:			
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE	
AUDIT QUESTIONS: Are there procedures and records that are maintained for communications and activities regarding the company's environmental aspects and its overall EMS? How are internal communications between different levels and different functions documented? How are the receiving, documenting and responding to relevant questions from interested parties documented?			

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Environmental Management System Model		IMPLEMENTATION AND OPERATION		
ELEMENT:	4.4.6	TITLE:	Operational Control	
ISO 14001 STANDARD:		NO	PARTIAL	YES
<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"> a) Establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets; b) Stipulating operating criteria in the procedures; c) 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 the suppliers and contractors. 		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD: Operational Control Forms are prepared in accordance with the SBMS Identification of Significant Aspects and Impacts SA and OPM 1.10.2. The OCF documents the operation, the activity/aspect(s) of the operation, the operational controls (C-A OPM's and other controls), necessary maintenance plans, (e.g. drainage rerouting, compressor noise abatement, sealing concrete floors to minimize discharge events, improving system designs and operating modes, component replacement to reduce energy consumption) actions to take if a control fails, records involved with the OCF, responsible individuals and training required for the operation.				
EXISTING PROCEDURES AND DOCUMENTATION (LIST): OPM 1.10.2, OPM 2.28, OPM 2.5, OPM 6.1.10, OPM 9.1.15, OPM 9.2.1, OPM 9.3.1, OPM 8.32, OPM 2.19, OPM 8.20 Identification of Significant Aspects and Impacts, C-A Operational Control Forms, Cap Inspections, Experimental Safety Reviews, EMP Beamline Construction and Disassembly (work permit 552003-014.				
COMMENTS: Noteworthy Practices: 1. Cryogenics Group continuing striving to reduce energy consumption and helium loss/usage through component replacement with better design features and operating modes. While cost driven, these reduction improvements also ultimately reduce overall energy usage and emissions. 2. Waste minimization efforts to track, recycle and reuse materials (e.g. cables, cable trays, lead bricks) during beamline disassembly activities are being implemented.				
EVALUATION:				
<input type="checkbox"/>	MEETS REQUIREMENT	<input type="checkbox"/>	MINOR NONCONFORMANCE	<input type="checkbox"/>
		MAJOR NONCONFORMANCE		
AUDIT QUESTIONS:				
Have the operations and activities been identified that are associated with the significant environmental aspects?				
Are the identified operations and activities consistent with the company's policy, objectives and targets?				
Is there a maintenance plan for the above identified operations and activities?				
Have procedures been established and maintained for the above operations that, if they are not followed for these situations, could lead to deviations from the environmental policy and the objectives and targets?				
Are operating criteria clearly established and documented in the procedures for the operations and activities identified above?				
Have the significant environmental aspects of raw materials, supplies and services used in the above operations and activities been identified?				
Are there procedures for handling raw materials, supplies and services used in the activities associated with significant impacts?				
Are relevant procedures and requirements communicated to the appropriate suppliers and contractors?				

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Environmental Management System Model		CHECKING AND CORRECTIVE ACTION		
ELEMENT:	4.5.1	TITLE:	Monitoring and Measurement	
ISO 14001 STANDARD:		NO	PARTIAL	YES
<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.</p> <p>Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organization's procedures.</p> <p>The organization shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations.</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>FACILITY IMPLEMENTATION OF STANDARD: Environmental performance monitoring is specified in C-A-QAP-1001. The C-A Environmental Compliance Representative is required to specify areas where compliance monitoring is required. The C-A QA is required to audit to assure that the compliance monitoring is accomplished. Other monitoring (e.g. Diff. pressure alarms, PLC controls, system parameter monitoring, visual leak detection) and measurement is performed as specified in the Operational Control Forms and associated Operational Procedures. With the exception of confirmatory air sampling performed by the C-A Radiological Control Division, soil cap inspections, chipmunk measurements, ground water wells, laboratory analysis there is no other equipment in the C-A EMS requiring calibration.</p>				
<p>EXISTING PROCEDURES AND DOCUMENTATION (LIST): FS-CAD-360 OPM 1.14, OPM 1.15, OPM 8.20, OPM 8.32, OPM 2.19 Memo dated 3/9/00 Control of Salvage Containers Memo dated 2/26/03 Handling of Printed Circuit Boards Memo dated 3/6/03 Cooling Towers 2,3 and 4</p>				
<p>COMMENTS: None</p>				
EVALUATION:				
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE		
<p>AUDIT QUESTIONS: Are procedures documented and maintained to monitor and measure operations that can have a significant impact on the environment? Is there a calibration system for monitoring equipment? Does the company have a documented procedure for periodically evaluating compliance with environmental legislation and regulations?</p>				

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Environmental Management System Model		CHECKING AND CORRECTIVE ACTION		
ELEMENT:	4.5.2	TITLE:	Nonconformance and Corrective and Preventive Action	
ISO 14001 STANDARD:		NO	PARTIAL	YES
<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.</p>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>FACILITY IMPLEMENTATION OF STANDARD: EMS nonconformances are documented by three mechanisms: Occurrence Reporting and Processing System (ORPS), Critiques, and through the SBMS Nonconformance & Corrective and Preventive Action subject area. Critiques and NCR's are tracked for closure and corrective action through the C-A ATS. ORPS reportable incidents are tracked to closure through a higher level Laboratory &DOE tracking system. Copies of Critiques and NCR's with supporting documentation were available and for review in the QA group. ORPS can be found through the C-A web site. Critiques and NCR's were noted as in the C-A ATS system. There were no ORPS reportable incidents since the last EMS audit.</p>				
<p>EXISTING PROCEDURES AND DOCUMENTATION (LIST): OPM 1.10.2 OPM 10.0 series SBMS Critiques SA SBMS Occurrence Reporting and Processing System SA SBMS Nonconformance & Corrective and Preventive Action SA C-A ATS</p>				
<p>COMMENTS: None</p>				
EVALUATION:				
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE		
<p>AUDIT QUESTIONS: Are procedures documented and maintained for defining responsibility and authority for handling, investigating and taking action to minimize impacts of nonconformances? Are procedures documented and maintained for initiating and completing corrective and preventive action? Are appropriate corrective and preventive actions taken? Are the results of the corrective and preventive actions implemented and recorded?</p>				

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Environmental Management System Model	CHECKING AND CORRECTIVE ACTION		
ELEMENT: 4.5.4	TITLE: Environmental Management System Audit		
ISO 14001 STANDARD:			
	NO	PARTIAL	YES
<p>The organization shall establish and maintain (a) programme(s) and procedures for periodic environmental management system audits to be carried out, in order to:</p> <ul style="list-style-type: none"> a) Determine whether or not the environmental management system <ul style="list-style-type: none"> 1) Conforms to planned arrangements for environmental management, including the requirements of this International Standard; and 2) Has been properly implemented and maintained; and b) Provide information on the results of audits to management. <p>The organization's audit programme, including any schedule, shall be based on the environmental importance of the activity concerned and the results of the 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.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FACILITY IMPLEMENTATION OF STANDARD: The EMS audit is scheduled and performed in accordance with the C-A Department FY2002 Self-Assessment Program. The C-A QA group maintains a database of audit schedules as well as audits and audit reports. Audits are conducted in accordance with the SBMS Environmental Assessments subject area and OPM 1.10.2. An Audit Plan was generated as well as an Audit Schedule and Audit Notification. In addition, operating procedures are reviewed on a 3-year cycle to ensure they reflect current operating conditions.			
EXISTING PROCEDURES AND DOCUMENTATION (LIST):			
OPM 1.10.2 SBMS Environmental Assessments SA C-A-QAP-1001 Independent Assessment C-A Department FY 2002 Self-Assessment Program			
COMMENTS: None			
EVALUATION:			
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE	
AUDIT QUESTIONS:			
Are procedures documented and maintained for periodic EMS audits? Does the procedure for EMS audits include the scope of the audit, frequency, methodologies used, responsibilities, requirements, and method of reporting results? Does the EMS audit determine whether their EMS has been implemented and maintained and conforms to this standard? Does the EMS audit provide results of the audits to management?			

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Environmental Management System Model		MANAGEMENT REVIEW	
ELEMENT:	4.6	TITLE:	Management Review
ISO 14001 STANDARD:			
		NO	PARTIAL
		YES	
<p>The organization's top management, shall at intervals that it determines, review the environmental 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. The review shall be documented.</p> <p>The management review shall address the possible need for changes to policy, objectives and other elements of the environmental management system, in the light environmental management system audit results, changing circumstances and the commitment to continual improvement.</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>FACILITY IMPLEMENTATION OF STANDARD: The management review was found to be very comprehensive. It specifically addressed each of the areas listed above as part of a question and answer session during the review. Additionally, management is also supportive with implementing recommended programs and allocating funding, and is kept informed of EMS issues at the monthly Department Chairman's meetings.</p>			
EXISTING PROCEDURES AND DOCUMENTATION (LIST):			
<p>OPM 1.10.2 SBMS Environmental Assessments SA C-A Management Review Agenda (2002) C-A Management Review (2002) C-A Management Review Minutes (2002) C-A Record of Decision (2002)</p>			
COMMENTS: None			
EVALUATION:			
<input type="checkbox"/> MEETS REQUIREMENT	<input type="checkbox"/> MINOR NONCONFORMANCE	<input type="checkbox"/> MAJOR NONCONFORMANCE	
AUDIT QUESTIONS:			
<p>Has the top management performed a documented review of the EMS on a periodic basis? Does the review address the system's continued suitability, the system's adequacy, the system's effectiveness, the system's possible need to change its policy, the system's possible need to change its objectives and other elements of the EMS in light of the audit results, continual improvement, etc., the system audit as required in 4.5.4, and the Nonconformances and Corrective and Preventive Action? Is there a record of decision, which outlines actions for the coming year?</p>			