

# Environmental Management System Management Audit Report

August 1-5, 2005

## **Purpose**

Thomas Jefferson National Accelerator Facility (JLab) intends to self-declare implementation of an Environmental Management System (EMS) in the fall of 2005. In preparation for self-declaration this internal audit of the Lab's EMS was conducted in accordance with JLab SOP EMP-14, Internal Audit. Non-conformances, e.g. failures to meet a requirement, identified in the audit are to be addressed before self-declaration.

## **Scope**

The audit encompassed all of the EMS requirements defined in ISO 14001:2004 and covered activities on the Lab's main campus as well as in off-site rented/leased space such as Blue Crab Storage. The audit sought to determine whether the EMS that JLab is now implementing satisfies the requirements of ISO 14001 and whether the requirements of the EMS (including staff awareness of the EMS) are being met in the field.

## **Plan**

The audit plan was created by the audit team as part of its training and approved by the EMS Management Representative. The audit assignments were set so that no one audited work in which he or his line management had participated, in order to maintain objectivity.

The audit was divided into two pieces: audit of the EMS as a whole for conformance to the requirements of ISO 14001 and audit of awareness and implementation of the EMS in the field.

In order to audit the field the team prepared a matrix of Lab area versus significant environmental aspects and planned the audit to sample all areas and all significant aspect categories. The matrix and the resulting audit assignments are shown in Annex 1.

## **Audit Team**

The audit team was chosen by the EMS Management Representative from across JLab and also included two consultants from Gannett Flemming, Inc., the firm that has been assisting in the Lab's development and implementation of an EMS. Team members and their organizations:

Dave Buckle <sup>1</sup>	CIO
Mary Erwin <sup>3</sup> (EMS Management Representative)	CFO
Chuck Mason <sup>2</sup>	Gannett Flemming, Inc
Jim Murphy <sup>3</sup> (Lead Auditor)	OA

Dena Polyhronakis<sup>2</sup>  
Steve Rowley  
Tim Rothgeb<sup>1</sup>

Administrative Division  
Gannett Flemming, Inc.  
Accelerator Division

Gannett Flemming, Inc. trained the internal members of the team before the audit. Most of the audit was performed by two-person subteams. These three teams are indicated by superscripts following the names. Steve Rowley, who had not participated in the JLab EMS project before the audit, was charged with auditing the conformance of the overall EMS to the ISO 14001 standard.

## Results

Findings were graded as follows:

- OK - Item meets ISO 14001 and/or other requirements including the JLab EH&S Manual and SOPs. Noted on Corrective Action Request forms (CARs) only in particularly significant cases.
- Observations - Items which meet the intent of the requirements, but with minor inconsistencies. Noted on CARs, but no response required. Not tracked.
- Minor - Not an EMS failure, but a failure in some part of the documentation or a single observed failure in conforming to one requirement. Tracked.
- Major - EMS failure. The absence or total breakdown of an EMS requirement, or a number of minor findings against a single requirement. Tracked .

The audit recorded 25 observations, six (6) minor and two (2) major non-conformances.

The major non-conformances:

- Several people interviewed were not aware of the environmental policy or the EMS in general. Those who were aware knew about it mostly through informal channels. Root cause: employee not trained.  
Recommended Corrective Action: Perform JLab wide awareness training including training on the environmental policy.
- JLab has not performed a compliance audit per EMP-11.  
Recommended Corrective Action: Perform a compliance audit of JLab per EMP-11 and maintain records of the audit.

The minor non-conformances:

- TIPs should be updated with the status of the specific actions. Also the targets are expressed as tasks rather than a quantifiable performance level as required.  
Recommended Corrective Action: Update TIPs to show status. Express targets as the quantifiable performance level and deadline to help meet the broader objective.
- Operational controls have not been developed for all significant environmental aspects.

Recommended Corrective Action: Develop and finalize SOPs for all significant aspects.

- EMP-10 does not contain adequate detail to show the required equipment calibration performed at JLab.

Recommended Corrective Action: Develop a calibration requirements matrix.

- The corrective action process in EMP-12 has not been implemented for EMS-related non-conformances.

Recommended Corrective Action: Implement future corrective actions using EMP-12.

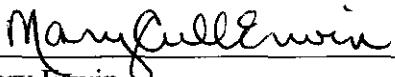
- The internal audit is being performed for the first time.

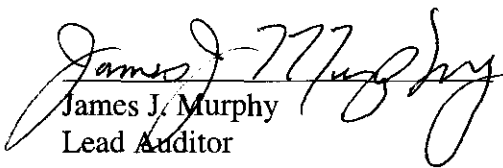
Recommended Corrective Action: Ensure that EMP-14 is followed in performing this audit and all future EMS audits.

- A top management review of the EMS has not been completed per EMP-15.

Recommended Corrective Action: Complete a top management review of the EMS per EMP-15.

The major and minor non-conformances have been entered into the Lab's corrective action tracking system and will be tracked to completion. The attached CARs document all of the observations, minor and major non-conformances.

  
Mary Erwin,  
EMS Management Representative

  
James J. Murphy  
Lead Auditor

Annex 1: Audit Plan

Area	Significant Environmental Aspect Categories						
	Team	Ionizing Radiation	Rad Waste	Recyclable Materials	Regulated Waste	Spills	WW Discharge
ACC Service Buildings	1		X				
ACC Tunnel	1						X
ARC Lab	2				X		
Blue Crab	2					X	
Chem Storage	3				X	X	X
Cryo	1				X	X	X
Physics/EEL	2			X	X	X	
Physics Halls	3	X	X			X	X
Radcon			X		X	X	
Test Lab	1, 2 & 3				X	X	X
Security - Involvement	CM						
Medical/ VARC	2				X		
Admin/ VARC	2				X	X	
Management System Elements	SR						

Team 1 = Dave Buckle and Tim Rothgeb  
 Team 2 = Dena Polyhronakis and Chuck Mason  
 Team 3 = Mary Erwin and Jim Murphy  
 CM = Chuck Mason  
 SR = Steve Rowley

Annex 2: Corrective Action Requests

All CARs will be attached.

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-SR-01-1</b>	<b>CAR Date: 8/3/05</b>
<b>Reported by (name): Steve Rowley</b>	
<b>Requirement (SOP, ISO 14001, or other): ISO 14001, 4.1 (General Requirements). Jefferson Lab must define the scope of its EMS.</b>	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>Section 2.0 of the EMS plan should provide a better definition of the operations within the scope of the EMS, such as "design and operation of the electron accelerator and support of physics experiments." It is not clear whether the Middle Ground storage facility is included in the EMS scope.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<p><b>Corrective Action Required:</b>  <b>Modify scope to provide greater detail of the specific activities involved in the scope of Jefferson Lab's EMS. Document if the Middle Ground facility is also included in the EMS scope.</b></p>	
<b>Responsibility for Corrective Action</b> (name and phone number): <b>NA</b>	<b>Due Date:</b>  <b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-2	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.4 (Documentation). <b>Interaction of EMS documentation to related documentation must be defined.</b>	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>The relationship between the Quality Assurance Program Manual, EHS Plan, and EMS Plan has not been well-defined in Section 4.4.4 of the EMS Plan.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<p><b>Corrective Action Required:</b></p> <p><b>Describe how these documents relate to each other and the major purpose of each document.</b></p>	
<p><b>Responsibility for Corrective Action</b> (name and phone number): <b>NA</b></p>	<p><b>Due Date:</b></p> <hr/> <p><b>Receipt Date:</b></p>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-3	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.3.1 (Environmental Aspects). Jefferson Lab must ensure that its environmental aspects are kept up to date.	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>EMP-04, Project Environmental Review, has not been fully implemented and not everyone has been trained on following it. In addition, the procedure does not include a cross-reference to 3120, Experimental Review Procedure found in the EH&amp;S Manual.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<p><b>Corrective Action Required:</b></p> <p><b>Implement and train everyone on EMP-04 and maintain all records required as part of the procedure. Explain how 3120 will be integrated with EMP-04.</b></p>	
<p><b>Responsibility for Corrective Action</b> (name and phone number): <b>NA</b></p>	<p><b>Due Date:</b></p> <hr/> <p><b>Receipt Date:</b></p>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-SR-01-4</b>	<b>CAR Date: 8/3/05</b>
<b>Reported by (name): Steve Rowley</b>	
<b>Requirement (SOP, ISO 14001, or other): ISO 14001, 4.3.3 (Objective, Targets, and Programs). Jefferson Lab must establish, implement, and maintain programs for achieving its objectives and targets.</b>	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>TIPs should be updated with the status of the specific action. Also, the targets are expressed as tasks, rather than a quantifiable performance level as required.</b></p>	
<b>Grading (circle one):</b> Major <u>Minor</u> Observation	
<p><b>Corrective Action Required:</b>  <b>Update the TIPs to show status of completion.</b></p> <p><b>Express targets as the quantifiable performance level and deadline to help meet the broader objective. For example, an objective to reduce waste might have a target of: 10% reduction in solid waste by December 31, 2005. The subtasks that must be achieved to meet this target should be task-oriented.</b></p>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>



**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-5	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.2 (Competence, Training, and Awareness). Jefferson Lab must identify training needs and ensure that all personnel are properly trained.	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>SOPs are not listed on the environmental training needs matrix. The matrix does not list specific environmental training needs for various job titles.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<p><b>Corrective Action Required:</b></p> <p><b>SOPs must be added to the environmental training needs matrix, and SOP training must be completed. Training requirements should be organized by job title or similar means to organize the information. The methodology for maintaining training records should be defined, such as CBT or sign-in sheets.</b></p> <p><b>As an improvement item, the EMS training program should be integrated with Jefferson Lab's existing training program management software.</b></p>	
<p><b>Responsibility for Corrective Action</b> (name and phone number): <b>NA</b></p>	<p><b>Due Date:</b></p>
	<p><b>Receipt Date:</b></p>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-6	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.3 (Communication). <b>Jefferson Lab must develop a procedure to receive, document, and respond to relevant external environmental communication.</b>	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>EMP-06 references the use of a communications log for responding to external communication. However, the form has not been developed or implemented.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Develop and implement the communications log.  Coordinate any external communication procedure with the public affairs department.	
<b>Responsibility for Corrective Action</b> (name and phone number): NA	<b>Due Date:</b>
	<b>Receipt Date:</b>
<b>Preventive Action Required:</b> NA	

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-7	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.5 (Control of Documents). Jefferson Lab must control all documents required for its EMS.	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  <b>EMP-07B is not complete; not all of the relevant EMS documents are listed.</b>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Update EMP-07B to show all required EMS documents.	
<b>Responsibility for Corrective Action</b> (name and phone number): NA	<b>Due Date:</b>  <b>Receipt Date:</b>
<b>Preventive Action Required:</b> NA	
<b>Responsibility for Preventive Action</b> (name and phone number): NA	<b>Due Date:</b> NA  <b>Receipt Date:</b>



**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-9	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.6 (Operational Control). Jefferson Lab must communicate applicable procedures and requirements to contractors and suppliers.	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>EMP-08 should provide a more detailed description or reference the process for communicating EMS requirements to contactors and suppliers.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Define responsibilities for communicating these requirements.	
<b>Responsibility for Corrective Action</b> (name and phone number): NA	<b>Due Date:</b>  <b>Receipt Date:</b>
<b>Preventive Action Required:</b> NA	
<b>Responsibility for Preventive Action</b> (name and phone number): NA	<b>Due Date:</b> NA  <b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-10	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.4.7 (Emergency Preparedness and Response). Jefferson Lab must review and revise its emergency response procedures.	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>The Incident Report Form (EMP-09A) is not used for recording environmental incidents or the results of drills described in EMP-09. The Oil Storage Inspection Sheets in the SPCC plan are not used.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<p><b>Corrective Action Required:</b></p> <p><b>Document and retain the Incident Report Form and the Oil Storage Inspection Sheets.</b></p> <p><b>As an improvement item, consider incorporating the emergency response testing procedure and the Emergency Response Drill form used by the Jefferson Lab security subcontractor.</b></p>	
<b>Responsibility for Corrective Action</b> (name and phone number): NA	<b>Due Date:</b>
	<b>Receipt Date:</b>
<p><b>Preventive Action Required:</b> NA</p>	

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-11	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.5.1 (Monitoring and Measurement). Jefferson Lab must ensure that all equipment requiring calibration is identified, and calibration records maintained.	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>EMP-10 does not contain adequate detail to show the required equipment calibrations performed at Jefferson Lab.</b></p>	
<b>Grading (circle one):</b> Major <u>Minor</u> Observation	
<p><b>Corrective Action Required:</b></p> <p><b>Develop a calibration requirements matrix, showing all equipment requiring calibration and the records maintained. This could be a subset of the records control matrix.</b></p>	
<p><b>Responsibility for Corrective Action</b> (name and phone number):</p>	<p><b>Due Date:</b></p> <hr/> <p><b>Receipt Date:</b></p>
<p><b>Preventive Action Required:</b></p>	
<p><b>Responsibility for Preventive Action</b> (name and phone number):</p>	<p><b>Due Date: NA</b></p>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-12	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.5.2 (Evaluation of Compliance). Jefferson Lab must regularly evaluate its compliance with regulatory requirements.	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>Jefferson Lab has not performed a compliance audit per EMP-11. Item 46 on the root cause list.</b></p>	
<b>Grading (circle one):</b> <u>Major</u> Minor    Observation	
<b>Corrective Action Required:</b>	
<b>Perform a compliance audit of Jefferson Lab per EMP-11 and maintain records of the audit.</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>



**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-13	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.5.3 (Nonconformity, corrective action, and preventive action). Jefferson Lab must identify, investigate, and close out all EMS non-conformances.	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>The corrective action process described in EMP-12 has not been implemented for EMS-related non-conformances.</b></p>	
<b>Grading</b> (circle one):    Major <u>Minor</u> Observation	
<b>Corrective Action Required:</b>	
Implement future corrective actions for EMS non-conformances using EMP 12.	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>
<b>Preventive Action Required:</b>	
<b>Responsibility for Preventive Action</b> (name and phone number):	<b>Due Date: NA</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-SR-01-14</b>		<b>CAR Date: 8/3/05</b>	
<b>Reported by (name): Steve Rowley</b>			
<b>Requirement (SOP, ISO 14001, or other): ISO 14001, 4.5.4 (Control of Records). Jefferson Lab must identify, maintain, and properly dispose of all records required by the EMS.</b>			
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)			
<b>The records control chart does not contain all required records.</b>			
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>			
<b>Corrective Action Required:</b>  <b>Update the records control chart (EMP-13A) to document all required records, including location, person responsible for maintaining the record, and retention time.</b>			
<b>Responsibility for Corrective Action</b> (name and phone number): <b>NA</b>		<b>Due Date:</b>	
		<b>Receipt Date:</b>	
<b>Preventive Action Required:</b> <b>NA</b>			
<b>Responsibility for Preventive Action</b> (name and phone number): <b>NA</b>		<b>Due Date: NA</b>	
		<b>Receipt Date:</b>	

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-SR-01-15	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Steve Rowley	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001, 4.5.5 (Internal Audit). Jefferson Lab must objectively audit its EMS on a regular basis and report the results to management.	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  <b>This procedure is being performed for the first time.</b>	
<b>Grading (circle one):</b> Major <u>Minor</u> Observation	
<b>Corrective Action Required:</b>  <b>Ensure that EMP-14 is followed in performing this audit and all future EMS audits.</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>
<b>Preventive Action Required:</b>	
<b>Responsibility for Preventive Action</b> (name and phone number):	<b>Due Date: NA</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-01	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4A.2, EMP-05, awareness of the policy and the EMS	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  Several people interviewed were not aware of the environmental policy or the EMS in general. Those who were aware knew about it mostly through informal channels. Item 28 from root cause list.	
<b>Grading (circle one):</b> <u>Major</u> Minor    Observation	
<b>Corrective Action Required:</b>  Perform J-lab wide awareness training, including training on the environmental policy.	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

EMP-12A

**Preventive Action Required:**

Same as corrective action, but ensure that annual refresher training ~~occurs~~ occurs.

**Responsibility for Preventive Action** (name and phone number):

**Due Date:**

**Receipt Date:**

**Describe Implementation and Effectiveness:**

**EMS Management Representative Approval Signature:**

**Date:**

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> CAR 2005-01-02	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> A.A.7, EMP-09 Emerg Response	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  Employee in acid transfer area and CHL were not aware on how to respond to emergency situations. There was a lack of consistency in the responses given.  Personnel in Room 109 of Physics/EEL also did not know how to respond to an emergency.  <u>Improvement area:</u> The security subcontractor tests emergency response procedures quarterly. Integrate these tests into the emergency response procedure, and use the form they use to document the drills.	
<b>Grading (circle one):</b> Major    Minor <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Observation</span>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>

✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-03	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.4.5, EMP-07 Control of Docs	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  Employee in acid transfer bldg and employee in CTL did not have a controlled version of SOPs. Employee in acid transfer wrote his own SOP and had not trained others on the SOP. In CTL, SOP revision procedure was not being followed.	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-04	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> A.5.4, A-01-006 SOP (Records control)	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p>Employee in acid transfer building did not maintain Chemlog records. pH calibration records were maintained as specified <sup>meter</sup> in the SOP.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>



**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-05	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.4.2, EMP-05 Training, A-04-009-SOP	
<b>Description of Nonconformance:</b> <small>(If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</small>	
<p>Employee in acid transfer building is required to <sup>take</sup> triple rinse training, but he did not recall receiving this training, and there was no record that he had received the training.</p> <p><u>Improvement area</u>: use the "aspen" training software to track training in SOPs. The software contains a feature to easily provide and track SOP training over the network. It will automatically update each person's ITP.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>

✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-06	<b>CAR Date:</b> 8/2/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.4.6 Housekeeping	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  Two unlabeled containers apparently containing used oil were stored in CHTL. One was an open container that could be easily spilled, and was also stored outside of secondary containment area. Supervisor was made aware of situation.	
<b>Grading (circle one):</b> Major Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-07	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> ISO 14001 4.4.5 (Control of Documents)	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p>The occupational nurse maintained her own <del>an</del> electronic copy of SOP-05-HR-03 (medical waste) on her hard drive. There is a separate electronic copy on DocuShare. There should be one copy of this SOP available.</p> <p>Potential area for improvement: The nurse maintains the original medical waste manifest and sends a copy to Linda Even. Is it necessary to have 2 people maintaining these records as opposed to one person?</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>

✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-01-08	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.4.6 Operational Control, 4.5.1 Monitoring and measurement	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.) Production clean room</p> <p>1) Do not currently calibrate the overflow or leak alarms for the chemical cabinet. However, they have a written "traveler" that is currently under development to address this. Steve Singleton will be responsible for completing the traveler. There is procedure or SOP for performing this operation as required.</p> <p>2) <u>Improvement idea</u>: Can the "traveler" system be used for performing monitoring and measurement required as part of an SOP.</p> <p>3) SOPs had not been distributed for managing significant aspects associated with VARC personnel, such as cooling tower mgmt or glycol spills.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A

<b>CAR No.:</b> 2005-01-09	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.4.6 Operational Control	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p>Personnel in the electronics group, room 109 (Jeff Wilson), were not aware of any SOPs that they had to follow related to waste lead solder management. This was identified as a significant aspect.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB**  
**CORRECTIVE ACTION REQUEST FORM**  
**EMP-12 A**

<b>CAR No.:</b> 2005-01-10	<b>CAR Date:</b> 8/3/05
<b>Reported by (name):</b> Chuck Mason	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.3.1 Env. aspects	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p>Oil spills were identified as a significant aspect in blue crab. However, there is a potential for only very small spills in blue crab because oil is drained from all equipment before it is stored there. Recommend re-scoring as a non-significant aspect.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-1-TR-1	<b>CAR Date:</b> 8/4/05
<b>Reported by (name):</b> Tim Rothgeb	
<b>Requirement (SOP, ISO 14001, or other):</b> 14001 4.4.6 A-05-014-SOP	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p>The SOP requires the impact beads to be replaced semi annually but this is not being done. It is also not clear who is responsible for this maintenance.</p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Determine if this maintenance item is required and if it is make it clear in the SOP who should do it.	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>

✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.:</b> 2005-1-TR-2	<b>CAR Date:</b> 8/4/05
<b>Reported by (name):</b> Tim Rothgeb	
<b>Requirement (SOP, ISO 14001, or other):</b> 14001 4.4.6 SOP → A-05-014-SOP	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  Section 5.0 of SOP is not complete.	
<b>Grading (circle one):</b> Major Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Insert the completed text in section 5.0 in Rev 1.	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>



✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-1-TR-3</b>	<b>CAR Date: 8/5/05</b>
<b>Reported by (name): Tim Rothgeb</b>	
<b>Requirement (SOP, ISO 14001, or other): 14001 4.4.6 ACC-015</b>	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.) <b>SOP requires oil booms and oil absorbent material at both the transfer and delivery points but these materials are not available at the "mule".</b>	
<b>Grading (circle one): Major Minor <u>Observation</u></b>	
<b>Corrective Action Required:</b> <b>Sealed 5 gallon buckets of the materials are being placed at the "mule" so that these materials will be available but will be protected from the weather.</b>	
<b>Responsibility for Corrective Action</b> (name and phone)	<b>Due Date:</b>

✓

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-1-TR-4</b>	<b>CAR Date: 8/5/05</b>
<b>Reported by (name): Tim Rothgeb</b>	
<b>Requirement (SOP, ISO 14001, or other): 14001 4.4.6 ACC-015</b>	
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.) <b>User unaware of the existence of the checklist in the SOP and therefore was not using it.</b>	
<b>Grading (circle one):</b> <b>Major</b> <b>Minor</b> <b>Observation</b>	
<b>Corrective Action Required:</b> <b>Retrain the user on the SOP.</b>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

**JEFFERSON LAB  
CORRECTIVE ACTION REQUEST FORM  
EMP-12 A**

<b>CAR No.: 2005-01-JM-01</b>		<b>CAR Date: 8/9/05</b>	
<b>Reported by (name): Jim Murphy</b>			
<b>Requirement (SOP, ISO 14001, or other):</b> <b>A-04-011-SOP</b>			
<b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)  <b>In the chemical storage building drums being stored for beneficial reuse have been incorrectly labeled with "Waste" stickers.</b>			
<b>Grading (circle one):</b> <b>Major</b> <b>Minor</b> <b>Observation</b>			
<b>Corrective Action Required:</b>  <b>Relabel SBR drums correctly</b>			
<b>Responsibility for Corrective Action</b> (name and phone number):		<b>Due Date:</b>	
		<b>Receipt Date:</b>	

<b>CAR No.:</b> 2005-01-JM-02	<b>CAR Date:</b> 08/09/05
<b>Reported by (name):</b> Jim Murphy	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.5.4 HPP-ADM-011	
<p><b>Description of Nonconformance:</b>          (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>RadCon Manager approval of incomplete daily inspections is not being documented.</b></p>	
<b>Grading (circle one):</b> Major    Minor <b>Observation</b>	
<p><b>Corrective Action Required:</b></p> <p><b>Document reason for incomplete inspection on daily log and indicate RadCon Manager approval</b></p>	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>
	<b>Receipt Date:</b>

<b>CAR No.:</b> 2005-01-JM-03	<b>CAR Date:</b> 08/09/05
<b>Reported by (name):</b> Jim Murphy	
<b>Requirement (SOP, ISO 14001, or other):</b> 4.5.6 HPP-ADM-012	
<p><b>Description of Nonconformance:</b> (If this is a major nonconformance then also insert the root and contributing cause category and specific cause from the attached list. Provide additional description or reference supporting information sources such as a completed Notable Event Report.)</p> <p><b>Bags of rad waste temporarily stored in Bldg 52 are unlabeled and "dumped" on the floor.</b></p>	
<b>Grading (circle one):</b> Major    Minor <u>Observation</u>	
<b>Corrective Action Required:</b>  Clean up area	
<b>Responsibility for Corrective Action</b> (name and phone number):	<b>Due Date:</b>  <b>Receipt Date:</b>