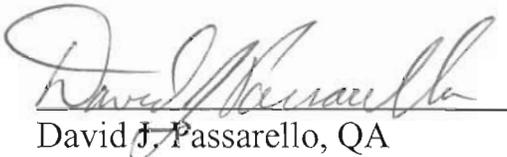
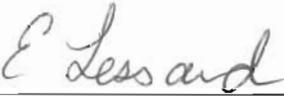


Collider-Accelerator Department

FY 2007 Self-Assessment Report

Prepared by:  3/28/08
David J. Passarello, QA Date

Approved by:  3/28/08
R. Karol, Division Head, ESSHQ Date

 3-31-08
E. Lessard, Associate Chair for ESSHQ Date

 4/2/08
D. Lowenstein, Department Chairman Date

I. Collider-Accelerator (C-A) Department Mission

In support of Brookhaven National Laboratory's broad mission of providing excellent science and advanced technology in a safe, environmentally responsible manner the Collider Accelerator Department is committed to the following:

- Excellence in environmental responsibility and safety in all C-A Department operations.
- Develop, improve, and operate the suite of proton/heavy ion accelerators used to carry out the program of accelerator-based experiments at BNL.
- Support the experimental program including design, construction, and operation of the beam transports to the experiments and partial support of detector and research needs of the experiments.
- Design and construct new accelerator facilities in support of the BNL and National Missions.

II. Self-Assessment Program

The objective of the C-A self-assessment program is to provide a systematic approach to performance management. That is, to provide C-A management with information needed to ensure organizational performance objectives are being met and appropriate improvement actions are identified and implemented.

C-A Self-Assessment supporting documentation; e.g., [Program and Facility](#), [Organization](#), [ESHQ Division](#), [Assessment and Inspection Programs](#), [C-A Environmental Management Program](#), [C-A Occupational Safety and Health \(OSH\) Management System](#), [Authorization Basis Documents](#), [Operations and Procedures Manual](#), [Conduct of Operations Agreement](#), [Training Programs and Associated Records](#) and [Tier 1 Safety Inspections](#) are maintained on the Collider-Accelerator web site.

The C-A Department has adopted a self-assessment framework primarily based on the Malcolm Baldrige National Quality Award Criteria, which are as follows:

- Leadership Commitment and Involvement
- Human Resource Development and Management
- Customer Focus and Satisfaction (Customer Value)
- Process Management
- Business and Operational Results
- Compliance with Laws Regulations and Contractual Requirements

III. Evaluation of Objectives and Measures

For each of the assessment criteria stated above, C-AD has established appropriate objectives and performance measures. The C-A FY 2007 Self-Assessment Program Matrix containing these objectives and performance measures is attached.

- For those measures/targets listed in the matrix, results are documented in the matrix.
- For those objectives and targets listed in C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations and C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices, results are documented in the C-A Family ATS (3499)

A brief summary of C-A performance items, which were not captured in the matrix, are listed below.

1. Occurrence Reports, Nonconformance Reports and Investigations

- a. Reportable occurrence trends are documented in the [C-A Performance Indicator](#) quarterly reports.
- b. Three Supplier Nonconformance Reports (NCR) were issued in FY07. Corrective actions are tracked to closure in the BNL Supplier Nonconformance database.
- c. Thirteen critiques were performed at the direction of C-A ESSHQ management. All recommended actions are tracked to closure in the C-A Family ATS.

2. EMS, OSH and SA

- a. The ISO 14001 and OHSAS 18001 registration audit was conducted in May 2007 (Institutional ATS 3827). There were no findings for the C-A Department. ISO 14001 and OHSAS 18001 registration was maintained.
- b. The C-A Department Management Review of Occupational Safety and Health (OSH), Environmental (EMS) and Self-Assessment (SA) Management Systems was convened on September 27, 2007. The meeting agenda including discussions on the following topics:
 - Performance on Past Objectives and Targets in 2007
 - Outcome of Manager Work Observations
 - Status of Authorization for EBIS and ERL
 - Financial Investments in ESSHQ
 - Results of Audits
 - Security Performance
 - Arc Flash Labeling & NRTL Progress
 - Injuries
 - Tier 1 Results
 - 10CFR851 Compliance Issues
 - Training Status
 - Human Performance Initiative
 - Environmental Performance
 - Waste Reductions & Metal Recycling Income
 - UMC Plan
 - Senior Manager Evaluation

Recommended actions resulting from the Management Review were documented in the 2007 Management Review Record of Decision. These action items were incorporated into the annual management plans that identify resources and responsibilities. See [C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations](#) and [C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices](#). The C-A Family ATS was used to document the status of each recommended action. (ATS 3499)

3. Assessments

Overall, C-AD conducted 159 internal assessments/reviews in 2007. These consisted of the annual Department Self-Assessment, annual EMS Assessment and OSH Assessment, annual Environmental Management Review, 10 QA assessments, 11 management walk arounds, 2 worker and supervisor self-evaluations, 36 Tier 1 inspections, 4 outdoor storage area inspections, 12 inspections of satellite-waste stations, 12 tank inspections and 52 90-Day Area inspections. Action items resulting from these internal assessments/reviews are tracked to closure in the C-A Family ATS.

III. Summary

The audits, assessments and reviews that have occurred in FY 2007 have verified that the Collider-Accelerator Department has implemented outstanding programs and systems which support BNL's broad mission of providing excellent science and advanced technology in a safe, environmentally responsible manner. In addition, the Department continues to maintain an excellent commitment by its staff and users to the various policies and programs that the Department and Laboratory have established.

Improvement actions that were documented in the C-A Record of Decision from Senior Management Evaluation (September 27, 2007) have been incorporated into [C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations](#) and [C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices](#), as appropriate. C-A family ATS will be used to track all measures and improvement action to closure.

IV. Open Action items from the FY 2007 Self-Assessment Program (ATS 3499)

The following open items from the C-A FY 2007 Self-Assessment Program will be included in the C-A FY 2008 Self-Assessment Program.

3499.1.4 Training of Building Managers
Description: Increase the number of Building Managers trained in OSHA regulations.
History: OSHA training was not performed in FY 2007 will be scheduled for 2008.

- 3499.1.12 Prepare ERL and EBIS authorization docs
Description: Establish targets to prepare ERL and EBIS authorization documents.
History: As some of the authorization documents are not due until FY 2010, this action item will be carried through each of the referenced years.
- 3499.2.3 Centralize engineering test data
Description: Integrate the ISO 14001 EMS with the Integrated Safety Management System
Target: Improve internal controlled documents by centralizing location of engineers' test reports
Measure: Number of test reports centralized
History: Original location selected for the centralized filing area was building 835. This building is currently being prepared for an Exit Readiness Review (ERR).
- C-AD has established a record storage area in building 926. The area has fire suppression sprinklers and is secure from the rest of the building. As of this report required file cabinets are in place
- Administrative records stored in building 835 have been reviewed by C-AD Administrative and Quality personnel, remaining records, e.g. training and radiological surveys, are ready for transfer to building 926. C-AD rigging support is required to move loaded file cabinets from building 835 to 926. Collider Electrical PS Group test data and ESSHQ work control records have been moved to record storage room.
- 3499.2.11 PCB containing devices at Linac and B912
Description: Reduce PCB containing devices at Linac and B912 by 25% (ROD)
Reduce PCB containing capacitors in building 928
History: Both Linac and building 928 capacitors have been purchased. Plans are for summer shutdown to remove old capacitors in place. Actual date of completion is expected to be around 10/31/2007. If PCB containing devices are still within the C-A facility by fiscal year end, continue tracking action in FY 08
- 3499.2.15 Implement tritiated cooling water system upgrades (ADS# 0007)
Description: Implement the tritiated cooling water system upgrades to satisfy Suffolk County Article 12 requirements or reduce the tritium in cooling water systems to below the Drinking Water Standard (C-AD ROD)
History: This is an ongoing program that started in 2001. There are many subtasks or efforts that pertain. This program is incrementally funded and will continue for at least 3 more years with any additions. This project did not receive any funding in FY07; however, tritiated systems are declining in size and number due to programmatic shift from HEP to NP.
- 3499.2.16 Archive data on activated soils
Description: Archive data on activated soils (ROD)
History: No data generated as no digging/restorations of activated areas was performed.

- 3499.2.18 Cap soil around HEBT water stops
Description: Fully implement groundwater protection program. Protect groundwater quality from further chemical and radiological releases, and remediate existing contaminated groundwater
Target: Increase the number of activated soil areas capped
Measure: Cap soil around HEBT water stops and investigate if improved capping is needed at AGS J-10 (ROD)
History: Preliminary design completed and presented to C-AD RSC in late summer 2007. There are questions about the design interface by AGS so this will be done during the FY08 shutdown.
- 3499.3.2 Building 912 roof
Description: Continue with Repair on Building 912 roof.
History: Repair of building 912 roof is an on going issue and is addressed as funds are available.
- 3499.3.5 Arc flash calculations and labeling program
Description: Complete the arc flash calculation and labeling program for STAR, PHENIX and other high priority areas.
History: arc flash calculations are complete and are being reviewed. As of 12/28/07, STAR and PHENIX facilities have 0/2/4 labels affixed. Specific requirements will be posted once calculations have been reviewed.
- 3499.3.20 Worker involvement in Tier 1
Description: Improve worker participation in Tier 1 inspections and in housekeeping for C-AD. Determine if there is a correlation between the number of workers participating in Tier 1 inspections and number of housekeeping findings on Tier 1 inspection.
History: 6 new Tier I members were provided 10 hour OSHA Safety training required for participation in Tier I inspections. In FY 2008, C-AD ESSHQ will determine if there is a correlation between the number of workers participating in Tier 1 inspections and number of housekeeping findings on Tier 1 inspection.
- 3499.3.32 Implement AHJ & NRTL programs at C-A
Description: Implement the AHJ and NRTL programs at C-AD and keep on schedule with the 5-year plan, including training of SMEs and equipment evaluations
History: all C-AD EEI's have been trained, equipment evaluations are on going. Existing equipment reviews are maintained in a C-A database. This is an ongoing project and will be tracked in the 2008 Self Assessment Program

ASSESSMENT CRITERIA 1: Leadership Commitment and Involvement

OBJECTIVE:

Excellence in environmental responsibility and safety in all Department operations.

- 1.1. Maintain laboratory-wide ISO 14001 and 18001 registrations and continually improve the EMS and OSH programs.
- 1.2. Reduce Injury Rates to Meet DOE Expectations
- 1.3. Compliance With Requirements and Standards
- 1.4. Integrate the ISO 14001 EMS with the Integrated Safety Management System

Measures	Responsibility	Schedule/Due Date
<p>Senior Management Evaluation convened and "Record of Decision" issued. (3499.1.1)</p> <p>Result: Management Review was held on September 27, 2007, Record Of Decision approved on 10/19/07.</p>	Associate Chair for ESSHQ	September 2007
<p>OSH/EMS team task list completed (3499.1.2)</p> <p>Result: OSH/EMS task list completed for FY 2007</p>	Associate Chair for ESSHQ	September 2007
<p>Achieve an injury-free work year in C-AD/SMD as a whole. Determine number of first-aid, recordable injury and DART cases in C-AD/SMD (3499.3.1)</p> <p>Result: Refer to 2007 Management Review slides to see this year's statistics for C-AD.</p>	Division Head ESSHQ	September 2007
<p>Increase participation of managers in work observations. This will improve accident and illness performance. The measure is the number of manager work observations and number of managers participating (3499.3.23)</p> <p>Result: ESSHQ Division Tickler Card #520 schedules and records this. This started in June of 2007. Objective Evidence on file with Ray Karol from the C-AD division.</p>	Division Head ESSHQ	June 2007
<p>Improve arc-flash labeling with PPE listings on the label. Determine number of label non-conformances at STAR and PHENIX (3499.3.5)</p> <p>Result: Arc flash calculations are complete and are being reviewed. As of 12/28/07, STAR and PHENIX facilities have 0/2/4 labels affixed. Specific requirements will be posted once calculation has been reviewed.</p>	Division Head ESSHQ	September 2007
<p>Increase the awareness of the BNL ESSH policy. Record the Number of workers checked for awareness vs. number aware of policy (3499.2.2)</p> <p>Result: R. Savage stated that on 5/25/07 this action item can be closed based on the following three observations: 1. C-AD trained 352 C-AD/SMD employees during the EMS/OSH Forums (5/3-5/15) which focused on (ISM) work control attributes and BNL ESSH policy requirements. 2. Based on field interviews and records reviewed during the C-AD Internal EMS/OSH Audit -personnel were found aware of ESSH policy and were found performing work tasks in accordance with C-AD procedures and training received. 3. Based on the recent NSF EMS/OSH Recertification Audit no findings were noted which demonstrates Managements commitment to BNL ESSH Policy and the overall EMS/OSH Program.</p>	Division Head ESSHQ	May 2007
<p>Reference attachment 1, C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations, for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.</p>		
<p>Reference attachment 2, C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices, for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.</p>		
<p>All tasks will be tracked to closure in the C-A Family Assessment Tracking System. (3499.2 and 3499.3)</p>		

ASSESSMENT CRITERIA 2: Human Resource Development and Management

OBJECTIVE:

Create a pool of talented, empowered, motivated, and goal oriented leaders/managers/workers to support and enhance the C-A competitive position within the DOE laboratory complex.

Measures	Responsibility	Schedule/Due Date
<p>Improve worker participation in Tier 1 inspections and in housekeeping for C-AD. Determine if there is a correlation between the number of workers participating in Tier 1 inspections and number of housekeeping findings on Tier 1 inspection. (3499.3.20)</p> <p>Result: 6 new Tier I members were provided 10 hour OSHA Safety training required for participation in Tier I inspections. In FY 2008, C-AD ESSHQ will determine if there is a correlation between the number of workers participating in Tier 1 inspections and number of housekeeping findings on Tier 1 inspection.</p>	<p>Division Head ESSHQ</p>	<p>September 2007</p>
<p>Provide managers, supervisors and approximately 75 workers formal Human Performance Training (3499.3.10)</p> <p>Result: During the summer of 2007, the following Human Performance classes were convened: 1 manager sessions (28), 2 supervisor sessions (34), and 3 worker sessions with 71 workers attended the training.</p>	<p>Division Head ESSHQ</p>	<p>September 2007</p>
<p>Improve electrical engineer's knowledge of the National Electrical Code. Determine the number of C-AD/SMD electrical engineers trained in NEC. (3499.3.11)</p> <p>Result: C-AD arranged 2 two-day training courses on the National Electric Code (NEC). They concluded March 8, 2007. The training was given by James Stallcup of Grayboy, Inc. 72 people attended lab-wide (30 from C-AD).</p>	<p>Training Manager</p>	<p>April 2007</p>

ASSESSMENT CRITERIA 3: Customer Focus and Satisfaction (Customer Value)

OBJECTIVE: Operate the C-A facility in a manner that is responsive to C-A internal and external customer expectations.

Measures	Responsibility	Schedule/Due Date
<p>Reference attachment 1, C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations, for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.</p> <p>Reference attachment 2, C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices, for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.</p> <p style="text-align: center;">All tasks will be tracked to closure in the C-A Family Assessment Tracking System. (3499.2 and 3499.3)</p>		

ASSESSMENT CRITERIA 4: Process Management

OBJECTIVE:

Establish, maintain and improve C-A processes/procedures for implementing Laboratory and organizational expectations.

Measures	Responsibility	Schedule/Due Date
<p>Improve control of internal documents by centralizing location of engineers' test reports. Record number of test reports centralized (3499.2.3)</p> <p>Result: C-AD has established a record storage area in building 926. The area has fire suppression sprinklers and is secure from the rest of the building.</p> <p>Due to actions that still need to be addressed, this action shall be tracked in the FY 2008 Self Assessment Plan</p>	Q Group	April 2007
<p>Perform assessment on the C-A implementation of the BNL Management System - Environmental Management (3499.1.6)</p> <ul style="list-style-type: none"> • Regulatory Compliance • EMS Assessments • Management Review <p>Result: Management Review was held on September 27, 2007, Record Of Decision approved on 10/19/07. Internal assessment of C-AD 14001 program issued in April 2007. (2007-215)</p>	Q Group	Annual
<p>Perform assessment on the C-A implementation of the BNL Management System – Quality Management (3499.1.7)</p> <ul style="list-style-type: none"> • Internal Controlled Documents Records <p>Result: The Required Self-assessment Aid for Internal Controlled Documents Subject Area (SA) was completed and submitted to S. Stein on 4/13/07.</p>	Q Group	April 2007
<p>Perform assessment on the C-A implementation of the BNL Management System – Worker Safety and Health (3499.1.8)</p> <ul style="list-style-type: none"> • Lockout/Tagout <p>Result: The required self-assessment aid for BNL Management System - Worker Safety and Health, Lockout/Tagout was completed and submitted to J. Durnan on 7/13/07.</p>	Q Group	August 2007
<p>Perform assessment on the C-A implementation of the BNL Management System – Worker Safety and Health (3499.1.10)</p> <ul style="list-style-type: none"> • Interlock Safety for protection of Personnel <p>Result: The required self-assessment aid for BNL Management System - Worker Safety and Health, Lockout/Tagout was completed and submitted to J. Durnan on 7/13/07.</p>	Q Group	Annual
<p>Perform assessment on the C-A implementation of the BNL Management System – Occupational Safety and Health (3499.1.11)</p> <ul style="list-style-type: none"> • OSH Management System (OHSAS 18001 Internal Audit) • Management Review <p>Result: Internal assessment of C-AD 18001 program issued in April 2007. (2007-215) Management Review was held on September 27, 2007, Record Of Decision approved on 10/19/07.</p>	Q Group	Annual

ASSESSMENT CRITERIA 5: Business and Operational Results

OBJECTIVE:

- 1 Design and construct new accelerator facilities in support of the BNL and national missions.
- 2 Operational
 - a) Operate and improve the suite of proton/heavy ion accelerators and beam transports used to carry out the program of accelerator-based experiments at BNL thus supporting the research mission of the laboratory's user population.
 - b) Support the experimental program including design, construction, and operation of the beam transports to the experiments plus partial support of detector and research needs of the experiments.

Measures	Responsibility	Schedule/Due Date
C-A Operations per FY07 Schedule and the accelerator performance meets the operational goals as specified in the most recent Field Work Proposal. (3499.1.9) Result: RHIC operations during FY2007 was delayed due to congressional continuing resolution that kept the funding at FY2006 level for the first five month of the fiscal year. After passage of a budget RHIC operations for a 20 cryo-week gold-gold run commenced in February 2007. The luminosity performance exceeded the average projections and almost reached the maximum performance that was projected. Details of the machine performance can be found at http://www.rhichome.bnl.gov/RHIC/Runs/ and in the Particle Accelerator Conference paper "Summary of the RHIC performance during the FY07 heavy ion run".	Associate Chair, Accelerators	September 2007

ASSESSMENT CRITERIA 6: Compliance with Laws Regulations and Contractual Requirements

OBJECTIVE:

1. Compliance - Achieve full compliance with applicable environmental and safety requirements.
2. Pollution Prevention - Integrate P2 into the work planning processes and expand participation in pollution prevention
3. Groundwater Protection - Fully implement groundwater protection program. Protect groundwater quality from further chemical and radiological releases, and remediate existing contaminated groundwater.
4. Implement environmental clean-up projects efficiently, minimizing waste generation to the extent practicable, and achieving schedule milestones

Measures	Responsibility	Schedule/Due Date
Improve compliance with RCRA at the Satellite Accumulation Areas. Report the number of RCRA non-compliances recorded on Tier I inspections and from monthly inspections (3499.2.14) Result: Monthly satellite area inspections are performed per OPM. Each group has a responsible person to maintain area in compliance. For 2007, no RCRA non-compliances were reported during Tier I inspections or monthly area inspections	Division Head ESSHQ	September 2007
Improve the support for the federal electronics challenge. Report the number of pounds of electronics recycled or reused (3499.2.13) Result: For SMD, This is an on-going program. As material is identified, it is collected and stored for future recycling. John Cintorino is the point of contact for this project. Objective Evidence on file with J. Cintorino from the SMD division. For C-AD, Ann Lamberti has movement forms for electrical equipment disposal. Yearly, Joel Scott will review forms and send a memo to appropriate personnel on numbers of equipment recycled.	ECR	September 2007
Increase the number of activated soil areas capped. Cap soil around HEBT water stops and investigate if improved capping is needed at AGS J-10 (ROD) (3499.2.18) Result: Preliminary design completed and presented to C-AD RSC in late summer 2007. There are questions about the design interface by AGS so this will be done during the FY08 shutdown.	Division Head ESSHQ	September 2007

Increase the number of legacy waste items for disposal. Report the number of pounds of legacy waste removed from the site (3499.2.19)	Division Head ESSHQ	September 2007
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Result:

180,000 lbs of legacy magnets, shielding blocks, etc.. loaded into trains awaiting shipment. 360,000 lbs of legacy soil from 912 blockyard also awaiting shipment.

Reference attachment 1, [C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations](#), for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.

Reference attachment 2, [C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices](#), for the complete list of objectives/targets/measures and tasks with responsible person(s) and scheduled completion dates.

All tasks will be tracked to closure in the C-A Family Assessment Tracking System. (3499.2 and 3499.3)

Reference Documents

[C-A OPM 14.1, Environmental Management Plan for C-AD and SMD Operations](#),

[C-A OPM 14.30, OSH Management Plan for C-AD and SMD Accelerators, Experimental Areas, Shops and Offices](#)