



**NATIONAL SYNCHROTRON LIGHT SOURCE
BROOKHAVEN NATIONAL LABORATORY**

Report No. **000494**

Date: 01/10/2007

Prepared By:
Nicholas F. Gmür
Andrew Ackerman

GENERAL REVIEW FORM

TYPE OF REVIEW: Project Review: EMS/OHSAS Integrated Management Review

TITLE:

Annual NSLS Environmental Management System (EMS) & Occupational Health and Safety Assessment Series (OHSAS) Review; Meeting Date: 12/21/2006

PRESENTED BY: Andrew Ackerman

PURPOSE:

- Provide a **summary** overview of ESH&Q
- Display ESH&Q program performance
- Answer the required management questions:
 - Are the programs effective in achieving policy commitments; meeting objectives and targets; and in providing performance measures?
 - Are the programs adequate to identify significant aspects, hazards, and impacts; in providing adequate resources and information; in assuring staff expertise?
 - Are the objectives, targets, and measures suitable to injuries, illnesses, environmental impacts, stakeholder concerns, regulatory requirements, and organization changes?
 - Recommended revisions to policy, objectives, targets, performance measures or ESH programs.

ATTENDEES:

J. Aloï, D. Bauer, M. Buckley, W.R. Casey, R. Chmiel, R. Church, M.A. Corwin, R. D'Alsace, G. Goode, N. Gmür, R. Heese, S. Hulbert, E. Johnson, C-C. Kao (12/22/06), C. Nielson, R. Pindak, G. Ramirez, H. Robinson, J. Selva, R. Selvey, J. Tarpinian, F. Terrano (12/22/06), C. Weilandics, P. Williams, F. Zafonte

DISTRIBUTION:

The, "Attendees" listed above and:
M. Ali, M. Bebon, R. Biscardi, F. Crescenzo, R. Desmarais, S. Dierker, R. Gordon, G. Granzen, R. Greene, E. Haas, W. Hempfling, R. Lebel, J. Looney, A. McNerney, L. Miller, J. Murphy, B. Podobedov, R. Rimando, C. Sanchez-Hanke, C. Schaefer, D. Siddons, P. Singh, X. Wang

MAJOR COMMENTS & CONCERNS OF REVIEWERS

Overview

Ackerman presented an overview of the NSLS OHSAS and EMS programs covering the following topics:

- NSLS ESH Management System
- ESH Performance Measures
- Stakeholder Involvement
- Financial Costs
- Targets for FY 07
- Senior Management Questions

The meeting began with an overview of the NSLS ESH&Q program responsibilities, a review of ISM at the NSLS, a discussion of the NSLS ESH&Q staffing, and then a review of the NSLS EMS and OHSAS programs. Ackerman proceeded with an explanation of the primary objective of the NSLS ESH&Q program:

Ensure operational excellence in ESH&Q programs

Strategy

The tenets of ISM will continue to be implemented, with on-going emphasis on work planning, training, pollution prevention, and compliance with BNL ESH regulations. Registration with ISO 14001 & OHSAS 18000 will be maintained.

The meeting continued with an overview of the following Performance Measures:

- Progress on ESH Targets
- Results of assessments and audits
- Tier I
- Traffic violations
- Training statistics
- Injuries
- Incidents
- Radiation exposure
- Hazardous waste generation
- Spills

Progress on the 14 ESH targets for 2006 was good. Work on these targets is managed through assignment to individuals in the group, definition of specific tasks required, and through personnel performance appraisal goals. Work continues on enhancing application of ISM and preparation for the audit, the worker qualification program upgrade, hazardous equipment identification, NRTL inspection of equipment, definition of training requirements, implementation of 851, and evaluation of synthetic vacuum pump oil.

Twenty seven audits and internal assessments were completed in 2006. Most had minor findings. Significant issues involving electrical power distribution and experiment work with nano-materials were found. Plans for resolving both are in progress. Assessments conducted by NSLS staff are more effective than external audits. All assessments require considerable time and effort. A reduction in the number of assessments would be welcome.

The Tier I program continues to be a model for the Laboratory with substantive impact on the overall safety program and sufficient allocation of personnel resource. The number of inspections conducted is up from last year and the number of findings per inspection is down. Tracking and closing of findings is well managed. Electrical power distribution findings are persistent. This issue may need attention outside of the Tier I program.

There were fewer traffic violations in 2006 than in 2005. That reduction reflects management emphasis on this concern. BNL and resident staff have received and are conforming to the message that safe driving is mandatory as is evidenced by the reduction in violations issued to that community. There was no reduction in violations for the visiting scientist community so more emphasis is needed to assure that they understand the importance of this issue.

Training compliance is excellent and improved over last year. Work on defining training requirements and refinement of personnel Job Training Assessments has been well received, is effective and will continue to include more topics in 2007.

Injuries at the NSLS have been minor and few in number. There were no DART cases in 2005 and 2006. Visits to the clinic have declined significantly. There could be some reluctance to visit the clinic as controlling accident and injury statistics has been emphasized by Laboratory management.

There were two ORPS reports in 2006; a chemical spill and a mistake in cutting an energized electrical cord. No injuries resulted. There was one NSLS non-conformance report that resulted from failure to de-energize a power supply when expected. Again, no injury resulted. Seven other incidents resulted in investigations that did not meet the criteria for ORPS or non-conformance reporting, but were still analyzed for opportunities for improvement or lessons to be learned. The NSLS will continue to investigate all significant occurrences in support of the Laboratory initiative on event and issues management.

Radiation exposure remains low. There are areas where radiation levels can be significant during electron injection and these locations are well defined and marked. Considerable effort is devoted to the various administrative controls in place including real time monitoring, alarms, posting, announcements, and procedures. This program is effective and the NSLS collective dose for 2006 is only 51 mRem with approximately 3000 TLD's used.

Hazardous waste generation remains a significant environmental aspect for the NSLS and four projects in 2006 were focused on waste reduction: evaluation of synthetic vacuum pump oil, purchase and installation of an aerosol can popper, replacement of mercury-filled ignitrons, and development of a procedure for neutralization and filtering of corrosive water resulting from cooling system maintenance. The oil evaluation project remains inconclusive. The other three each resulted in significant hazardous waste reduction. Excellent trending of wastes generated at the NSLS allows for focus on the most significant sources and has helped target those sources for reduction over the last several years. All of the larger waste sources have been reduced making continued improvement in this area a challenge.

Attention to external and internal stakeholder concerns continues with an informative web page that emphasizes safety and the scientific achievements at the NSLS, an active education program with many students, a successful Summer Sunday presentation with community attendance of approximately 650 people and participation by 40 NSLS volunteers, numerous facility tours, a special tour for members of the BNL Community Advisory Council, and recognition of our staff with various awards.

A summary of financial costs was presented. The budget has remained fairly constant over the past several years and has been adequate for the department needs. Little change is expected for 2007.

The presentation ended with an overview of the ESH&Q targets planned for 2007 and discussion of the required management questions. ESH&Q targets and the issues raised during this review will be addressed in the 2007 ESH&Q Improvement Plan. Some specific comments follow:

Comments During Ackerman's Presentation

Williams: BNL Tier I group said there might be some evidence that electrical findings were being reduced due to NRTL inspections; no evidence for this at the NSLS.

Selva and Williams: Any RCRA findings (associated with labeling, signage, etc.)? None in recent years due to diligence of NSLS waste manager. Labeling problems are Hazard Communication related.

Williams: Who was the Training/JTA questionnaire applied to at the NSLS? To all scientific and technical staff as well as resident beamline staff for a total of ~350 questionnaires.

Williams: Have the JRAs been updated as a result of injury investigations? Yes. The Cryogenic Work JRA (#0010) was updated as a result of the researcher who froze her finger tips and the Accelerator Operations JRA (#0030) was updated as a result of the back muscle spasm during plug door opening work.

Williams: What is included in the Direct Cost? Costs that are charged to the department for specific services including the Laboratory overhead and burden charges. Costs associated with equipment and material purchases and travel. RCD services and waste disposal costs are on a "charge back system" and are included. NSLS ESH&Q salaries and services from SHSD and EWMS, which are paid through Laboratory overhead, are not included.

Comments During the Final Management Review Questions

Question #1:

Are the occupational safety, health, and environmental management systems effective in achieving

- *policy commitments?*
- *objectives, targets and performance measures?*

Review Committee Response:

Yes.

Question #2:

Are the occupational safety, health, and environmental management systems adequate in terms of:

- *Identifying significant aspects, hazards and impacts?*
- *Resource allocation?*
- *Information systems?*
- *Organizational issues – staff expertise; procedural requirements?*

Review Committee Responses:

Tarpinian: Have ESH resources and funding been tracked over the years, and how has ESH been affected?

Casey: No change in FTEs over the years and the budget has been essentially flat. Increased ESH emphasis and contributed resources from NSLS non-ESH personnel have improved performance.

Tarpinian: I agree with this based on my own observations.

Johnson: Contributed resources have increased greatly.

Goode: What are the plans for NSLS-II and the migration of personnel and management systems?

Ackerman: NSLS plans to move management systems up to the Directorate level as they have been very successful over the years in the operation of the NSLS.

Goode: Make this an Objective.

Casey: It is for NSLS-II.

Pindak: How will we address the electrical inspection issue?

Ackerman: For users, this is captured via experimental review and personnel walking the floor; there is a need for a part time technician to help and fix things on the spot. Rich Biscardi is developing a program for alleviating significant power distribution concerns within the department.

Question #3:

Are the objectives, targets and performance measures for these management systems suitable in terms of:

- *Injuries /illnesses and environmental impacts?*
- *Concerns of stakeholders?*
- *Current and future regulatory requirements?*
- *Business interests; technological capability?*
- *Internal organizational or process changes?*
- *Should additional objectives, targets or performance measures be established?*

Review Committee Responses:

Tarpinian: Based on the recent BNL lab wide management reviews that took place December 19 and 20, there are three big issues: a) disseminate the revised BNL ESSH Policy; b) departmental objectives and targets need to be geared to BNL Mgmt. Review issues and need to be quantifiable; and c) document control needs improvement, especially for procedures (dated with revision numbers).

Goode: Mick Buckley is part of the BNL causal analysis team examining this issue.

Selva: Please check that all the 2005 NSLS Management Review concerns have been dealt with.

Casey: Regarding NSLS objectives, they all have targets, assigned personnel and due dates.

Selvey: In the Phase III registration audit that was just completed, the registrars wanted much more measurable objectives.

Tarpinian: The NSLS has good objectives and should keep what they have, but make the targets more quantifiable or add other targets that may be quantified.

Johnson: Isn't it enough to have the targets we now have? You either meet them (100%) or you do not (0%).

Williams: NSLS (BNL) needs to be able to communicate improvements.

The comments collected during the management review last year were addressed in the FY 2006 ESH&Q Improvement Plan:

- “Encourage personnel to report events” – This has been emphasized through numerous staff meetings and as part of the OHSAS program development.
- “Improve recycling of electronic equipment” – The NSLS recycles all equipment through the BNL program.
- “Implement new Mercury rule” – Mercury thermometers were collected and disposed through the BNL Waste Management Facility and the ignitron Mercury switches were replaced with solid state units.
- “Examine document control practices” – The NSLS document control program is well implemented.

The 2007 targets and objectives will be detailed in the department FY 2007 ESH&Q Improvement Plan. That plan will be structured to provide adequate metrics for each target.

Question #4:

Recommended revisions to:

- *ESSH policy and commitments?*
- *Objectives, Targets and Performance Measures?*
- *Occupational safety and health or environmental related management systems?*

Combine OHSAS and EMS into a single program with one set of objectives, targets, and performance measures managed under one set of documents

Migrate NSLS program to the directorate level to cover both the NSLS and NSLS II

- Take advantage of existing work and expertise
- Good for overall transition

Review Committee Responses:

Tarpinian: I enjoyed the integration of EMS and OHSAS into this single presentation.

The NSLS Annual EMS/OHSAS Management Review was then ended by common consent of the review committee members.

APPROVAL (if required)

Review Committee Chairman: Andrew Ackerman

Date: 01/10/2007

10/21/2006
 NSLS Integrated Management Review
 Attendance

Name	Life #
Nick Gmur	13484
Mary Anne Corwin	21302
Bob Casey	12500
Frank Zante	19015
Chris Walsden	17246
John A.	18383
Robert J. Chmiel	18574
ERIK JOHNSON	17897
Charlotte Nielson	19778
Mike Buckley	19200
Jim Tappiniam	23000
Roy D'ALSACE	14636
Howards Bishop	22191
Randolph King	12625

10/21/2006
NLSL Integrated Management Review
Attendance

Name	Life #
John Selva	22338
Pat Williams	18410
Scott Goode	19909
Ron Pindak	22756
Robert Selva	19328
Deborah Banker	22032
GLORIA RAMIREZ	15006
RICHARD HEESE	14625
Steve Hulbert	17250