

DECEMBER 20, 2007

NSLS FY 2008 ESH&Q IMPROVEMENT PLAN

PREPARED BY ANDREW ACKERMAN

This ESH&Q improvement plan is established to define the actions planned for FY 2008 directed towards improvement of the NSLS ESH&Q programs.

The following 16 items have been selected for FY 2008. Progress on each item is tracked in the NSLS Family ATS database.

OHSAS/EMS Goals and Targets

1. Provide Human Performance training for NSLS management and staff involved in the department Enhanced Work Planning program.

Background: BNL management supports and encourages application of Human Performance principles to work planning and integrated safety management. This goal is in support of that emphasis.

- a. Investigate opportunities for bringing HPI training to BNL.
Responsibility: Ackerman
- b. If feasible, schedule HPI fundamentals training for NSLS management and Enhanced Work Planning Staff.
Responsibility: Ackerman

2. Increase NSLS personnel awareness to accidents and injuries.

Background: The BNL accident and injury rates exceed established targets. Our goal is to achieve zero injuries.

- a. Complete quarterly presentations to NSLS management on BNL and NSLS accident statistics.
Responsibility: Ackerman
- b. Investigate all injuries and track needed corrective actions in the NSLS Family ATS database.
Responsibility: Stiegler

3. Establish one meaningful and cost-effective proposal for pollution prevention at the NSLS and seek to secure funding for implementation.

Background: The Laboratory pollution prevention program can provide funding for projects that can reduce waste generation. The departments are expected to evaluate their waste streams each year and generate a proposal for consideration by the P2 council for funding.

- a. Evaluate the department waste stream and determine what significant component can be reduced by 25% or more.
Responsibility: Aloï
- b. Submit a proposal to the Laboratory pollution prevention council and seek funding for implementation.
Responsibility: Aloï

4. Assure that all desk top computer monitors have Energy Star® features enabled.

Background: This goal is in support of a BNL goal to reduce energy use on site.

- a. Determine if computers in use to support beam lines can function with Energy Star® features enabled.
Responsibility: Bauer
- b. Develop and distribute instructions and requirements for use of Energy Star® features.
Responsibility: Bauer
- c. Conduct a survey and report on compliance with the new Energy Star® Requirements.
Responsibility: Bauer

5. Assure that all electronics purchasing requests include consideration for including Energy Star® or equivalent features.

Background: This goal is in support of a BNL goal to reduce energy use on site.

- a. Develop and distribute instructions and requirements for purchase of equipment that includes Energy Star® or equivalent features.
Responsibility: Buckley
- b. Conduct a survey and report on compliance with the new Energy Star® Requirements.
Responsibility: Buckley

Other Department Goals and Targets

6. Improve management of the NSLS wet chemistry laboratories to include sufficient oversight and more efficient use of those spaces.

Background: Management of the NSLS setup laboratories is inadequate and was identified as a concern during the recent ISM audit. Emphasis on set-up laboratory work planning, housekeeping, and organized use through improvement of the laboratory steward program will reduce the risks associated with work in these locations.

- a. Review personnel assignments for the laboratory steward role.
Responsibility: Ackerman
- b. Implement the new laboratory steward R2A2.
Responsibility: Ackerman
- c. Develop and implement Job Training Assessments (JTA's) for the laboratory stewards.
Responsibility: Corwin
- d. Assist the laboratory stewards in clearing their spaces of unnecessary equipment and materials.
Responsibility: Aloï

- e. Assist the laboratory stewards in development of written 'safety envelopes' for each laboratory that define the equipment and materials stored and the tasks performed in each space; assess the risks presented; and define control requirements.
Responsibility: Stiegler

7. Develop a corrective action plan for findings associated with the FY 2007 DOE Integrated Safety Management audit.

Background: The DOE ISM audit is complete. A report was issued with findings and opportunities for improvement. A corrective action plan is needed to define the NSLS response to that report.

- a. Develop a written corrective action plan and an NSLS Family ATS assessment to address the ISM audit report with assigned resources.
Responsibility: Ackerman

8. Analyze the, "Test Interval Analysis of NSLS Radiological Interlock Systems" report to determine the potential impact on NSLS operations and interlock testing. Define a plan for any required actions that result from that analysis.

Background: A statistical reliability analysis was completed for the NSLS personnel protection interlocks that included estimates of the failure probability of the different systems. The likelihood of a failure is proportional to the number of challenges to each system. Entry to the X-ray beam line hutches presents the greatest number of challenges to NSLS systems. Analysis of that entry frequency is needed to determine the needed response to the reliability analysis.

- a. Collect and analyze the data collected for X-ray hutch entry.
Responsibility: Buckley
- b. Complete a report on the data analysis and provide recommendations for actions required to improve system reliability to acceptable levels.
Responsibility: Buckley

9. Analyze Tier I findings data and develop a corrective action plan for the most common significant findings.

Background: Analysis of the Tier I findings for trends that can be resolved through a separate corrective action plan will help improve the effectiveness of the program.

- a. Analyze Tier I data to identify any repetitive findings or trends.
Responsibility: Klaus
- b. Complete a report on the data analysis and provide recommendations for actions required to improve requirements compliance.
Responsibility: Klaus

10. Complete ODH risk analysis for cryogen use in the MX hutches on the NSLS experiment floor.

Background: MX beam lines use LN2 for cooling samples. Each line has an LN2 cold stream that includes a cryogen storage dewar inside the hutch. An analysis of the conditions in each hutch will determine if added measures are needed to control ODH risks.

- a. Complete ODH risk analysis for each MX hutch in accordance with the SBMS Subject Area on this topic.
Responsibility: Stiegler
- b. Complete a report on the analysis and provide recommendations for any actions identified to improve controls.
Responsibility: Stiegler

11. Define NSLS PPE requirements.

Background: Use of PPE was identified as an issue during the recent ISM audit and is a focus for the Laboratory. Detailed, workable requirements are needed to define requirements for work at the NSLS.

- a. Establish an NSLS working group to evaluate tasks and PPE requirements.
Responsibility: Ackerman
- b. Define and characterize the common tasks that require PPE.
Responsibility: Ackerman
- c. Establish PPE requirements.
Responsibility: Ackerman

12. Develop fire safety subject area corrective action plan

Background: A detailed analysis of the new SBMS subject area for fire safety was completed during FY2007 and gaps were identified between the NSLS program and the new requirements. A corrective action plan is needed to address those gaps.

- a. Define a corrective action plan to address the NSLS compliance gaps; assign responsibilities and completion dates; generate an NSLS Family ATS assessment to track progress
Responsibility: Chmiel

Continued from FY2007 ESH&Q Improvement Plan

13. Continue evaluation of beam-loss mechanisms in the booster extraction process and determine if improved extraction efficiencies are achievable.

Background: Booster operation contributes to the accumulated radiation levels in several NSLS locations. Improving electron extraction efficiency will reduce Bremsstrahlung generation and is expected to lower those levels. This is a continuation from the FY2007 ESH Improvement Plan.

- a. Evaluate the existing plan and modify as needed.
Responsibility: Yang
- b. Complete required measurements.
Responsibility: Yang
- c. Complete a written report on this study including recommendations for efficiency improvement.
Responsibility: Yang

14. Continue development of web-based JTA questionnaire as a training needs assessment tool by incorporating Chemical/Hazardous Materials, Materials Handling, and Machine Shop and Construction Hazards.

Background: Assignment of pertinent training requirements is an important aspect of the department program. Training is best accepted when it is applicable and useful. Use of a well designed questionnaire to collect information about personnel job tasks can help with that assignment. This is a continuation from the FY2007 ESH Improvement Plan.

- a. Develop a set of questions to collect information about the tasks completed by staff and users for the following topics:
 - Chemical/Hazardous materials use
 - Material handling
 - Machine shop use
 - Construction hazards*Responsibility:* Corwin
- b. Configure and implement a web page to use the question sets and collect information from staff and users.
Responsibility: Corwin

- c. Collate and analyze the data collected to determine appropriate JTA assignments.
Responsibility: Corwin
- d. Implement defined JTA assignments.
Responsibility: Corwin

15. Continue evaluation of potential for experiment related solvent exposure and soldering related lead and irritant exposure at the NSLS to generate sufficient data to revise policies and practices as needed.

Background: 29 CFR 851 contains requirements for assessment of personnel exposures through industrial hygiene monitoring. Noise and solvent exposure have been identified as potential risks to personnel or facility users. Initial monitoring of exposure is necessary to characterize that risk. This is a continuation from the FY2007 ESH Improvement Plan.

- a. Complete representative, full-shift noise dosimetry for the NSLS Utilities Group and Machinists.
Responsibility: Weilandics
- b. Complete representative solvent exposure IH sampling for three separate solvent uses.
Responsibility: Weilandics
- c. Issue noise and solvent exposure risk assessment reports that include the type of monitoring conducted, monitoring results, and recommendations for needed policy and practice changes.
Responsibility: Weilandics
- d. Revise NSLS policies for working with solvents and in noise areas to address any recommendations that arise from exposure risk assessment reports.
Responsibility: Stiegler

16. Combine the EMS and OHSAS documentation into a single manual.

Background: This is a continuation from the FY2007 ESH Improvement Plan.

- a. Combine the EMS and OHSAS manuals into a single web based document and secure NSLS and NSLS II management approval.
Responsibility: Gmur