

NSLS II 2016 EMS/OSH Management Review

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February 07, 2017

70 YEARS OF
DISCOVERY

A CENTURY OF SERVICE



BROOKHAVEN
NATIONAL LABORATORY

Scope

- **“Senior Management shall”...Evaluate ESH program**
 - Adequacy – does it meet requirements & is it implemented appropriately
 - Suitability- does it “fit” operations & systems
 - Effectiveness- is it achieving the desired results

- **Expected Outcome:**
 - Provide feedback and direction
 - Identify areas where improvements are needed

Agenda

- ESH Programs
- Changing Circumstances
- ESH Performance
- 2017 Goals
- Summary / Feedback

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2016 Work Planning

- **Operations** (includes installation, testing, and maintenance)

- Worker planned; Prescribed; Permit planned
- 15 Work Permits
 - New BNL electronic system
 - much improved; reliable; email; easy interface
- Manager, Deputy & 46 Work Control Coordinators
- Primary Reviewer (ESH)

- **User Science**

- Proposal, Allocation, Safety, & Scheduling (PASS II)
- Safety Approval Forms (268 approved)
 - Commissioning (technical & science)
 - User Science (beamline & laboratory)

- **Science Facility**

- BNL ESR's; 41 total
 - Beamlines (7; *7 more in draft*)
 - User and other laboratories (25)
 - 2 other (high V cage, robot testing, ...)

- **Contractors**

- JSA/PHA (~25)
- WCC review/coordinate
- ESH approve
- May drive permit



NSLS-II EMS/OHSAS Documents and Links

The Photon Sciences Directorate follows the BNL requirements in the SBMS Program and Subject Areas for [EMS](#) and [OHSAS](#). The links below contain information that is specific to the Directorate in these areas.

NSLS-II follows the [PS Environmental, Safety, Security and Health Policy](#) derived from the [BNL Environmental, Safety, Security and Health \(ESSH\) Policy](#)

Planning

- ▶ [Significant Environmental Aspects Matrix](#)
- ▶ [QA Procedures](#)
- ▶ [Management System Guide](#)
- ▶ [Job Risk Assessments](#)
- ▶ [Facility Risk \(SAD\) & Hazard Validation Tool](#)
- ▶ [ESH Improvement Plan 2015](#)
- ▶ [ESH Improvement Plan 2016](#)

Implementation and Operation

Each employee has an associated Roles, Responsibilities, Accountability and Authority (R2A2) listing for their position. Control of Documents is governed by the QA Procedures listed above.

- ▶ [Process Assessments](#)
- ▶ [Training Program Procedures](#)
- ▶ [Training Courses](#)
- ▶ [EMS/OHSAS Group](#)
- ▶ [Work Planning and Control](#)
- ▶ [Local Emergency Plans](#)

Checking and Corrective Action

- ▶ [QA Procedures](#)
- ▶ [Assessment Tracking System](#)

Management Review

- ▶ [2015 Presentation and Minutes](#)
- ▶ [2016 Presentation, Attendees, Minutes](#)

EMS / OHSAS

2016 Activity

- EMS/OHSAS/ISM Review group meetings
- Internal Multi-Topic Compliance Audit
- NSF Registration Audit (“22 person day integrated audit ...”)

No Audit Items

ESH Communication

- Newsletter ^{*NEW*}
- LSSOC
- Project Reviews
- Advisory Committees
- Daily Installation Planning (plan of the day)
- Weekly meetings
 - Installation Planning
 - Maintenance
 - Operations
 - Various group meetings
- Town Meetings
- BNL Lessons Learned
- *User Information Card (2015 Management Review)*



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Changing Circumstances

	Change	Impact to NSLS II
2016	Shift to commissioning	<ul style="list-style-type: none"> • <u>12 IRR's completed.</u> Significant effort from: NSLS II and BNL staff.
	Shift to User operations	<ul style="list-style-type: none"> • 8 beamlines approved for User Ops. • <u>11 set-up labs approved for User Ops</u> • Safety Approval Forms
2017	New EMS standard	<ul style="list-style-type: none"> • NSLS II participating on implementation team • Effort to certify to new standard
	New OSHA Beryllium PEL	<ul style="list-style-type: none"> • BNL already working to new limit (0.2 µg/m³) • Increased air monitoring
	RCRA updates	<ul style="list-style-type: none"> • Implement labeling requirements

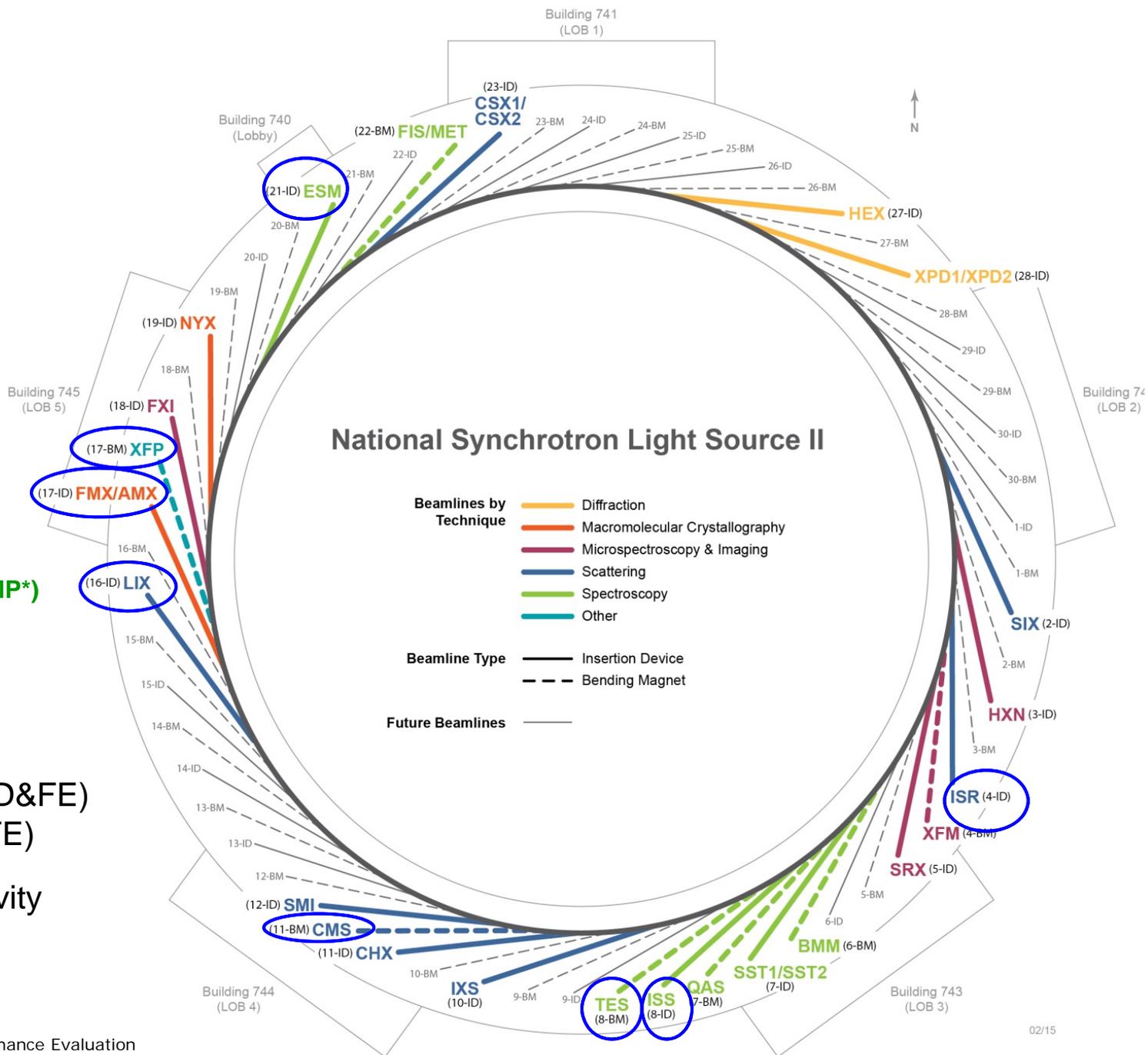
FY16 IRRs

Beamline

- Oct⁽¹⁵⁾: LIX
- Mar: FMX/AMX
- Apr: ISS
- Jun: ISR
XFP
ESM
- Aug: TES
CMS (PEMP*)

Machine

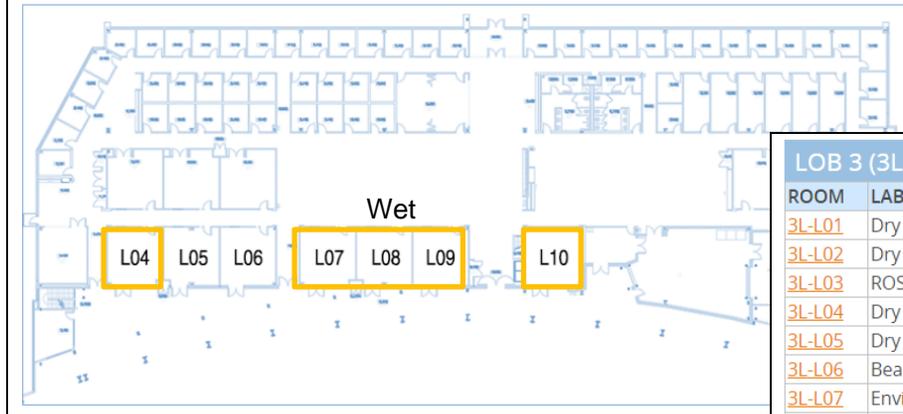
- Oct⁽¹⁵⁾: Cell 04 (ID&FE)
Cell 08 (FE)
- Dec⁽¹⁵⁾: SCRF cavity



* Performance Evaluation Management Plan

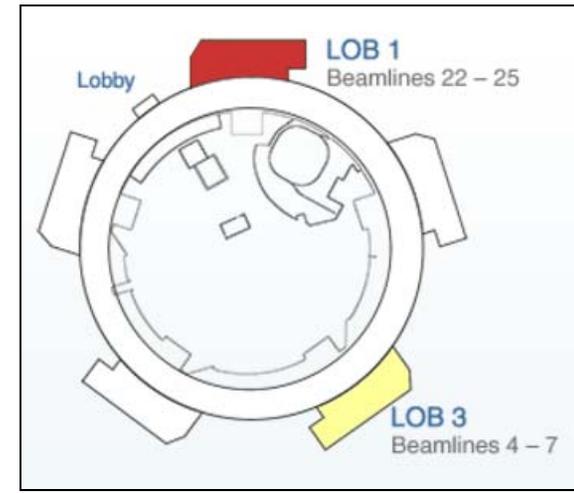
Support Laboratories

LOB 1 (1L)				
ROOM	LAB NAME	LAB PHONE	CONTACT (CSM)	CONTACT PHONE
1L-L04	Dry Lab for XPD, ESM & CSX	631-344-3154	Andi Barbour	631-344-3895
1L-L05	Dry Lab for FMX, AMX, LIX	631-344-3249	Grace Shea-McCarthy	631-344-2025
1L-L06	Dry Lab for Beamline Assembly	631-344-3284	Andi Barbour	631-344-3895
1L-L07	Soft & Bio Materials Wet Lab	631-344-3429	Vito Graziano	631-344-2209
1L-L08	Structural Biology Wet Lab	631-344-3442	Edwin Lazo	631-344-7247
1L-L09	Battery & Condensed Matter Lab	631-344-3080	John Trunk	631-344-3406
1L-L10	Infrared Lab	631-344-8738	Randy Smith	631-344-8033

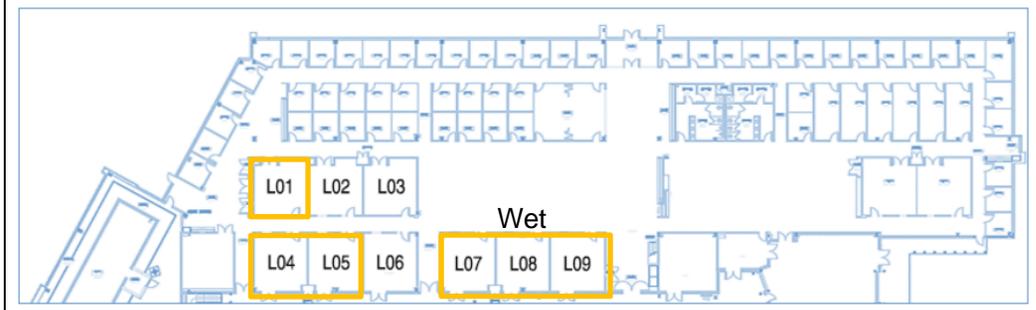


User Ready
L04, L07, L08, L09, L10

- 11 labs User Ready (one left)
- Access/ESH in PASS
- Lab specific training for Users
- JTAs for CSMs & Resident Users
- Equipped (tools, glovebox, hood)
- Staffing challenge



LOB 3 (3L)				
ROOM	LAB NAME	LAB PHONE	CONTACT (CSM)	CONTACT PHONE
3L-L01	Dry Lab for HXN, SRX, XFM, FXI	631-344-6094	Petr Ilinski	631-344-8049
3L-L02	Dry Lab for ISS, TES, QAS, BMM	631-344-5883	Syed Khalid	631-344-7496
3L-L03	ROS group/ Detectors	361-344-6092	Qing-Yi Dong	631-344-5358
3L-L04	Dry Lab for IXS, SIX, ISR, SST	631-344-7680	Steve LaMarra	631-344-5312
3L-L05	Dry Lab for SMI, CMS, CHX	631-344-3540	Yugang Zhang	631-344-5674
3L-L06	Beamline Assembly Lab	631-344-6090	Syed Khalid	631-344-7496
3L-L07	Environmental Sciences Wet Lab	631-344-4535	Vito Graziano	631-344-2209
3L-L08	Mesoscale Imaging Wet Lab	631-344-3719	Vito Graziano	631-344-2209
3L-L09	Chemistry Wet Lab	631-344-3176	Syed Khalid	631-344-7496



User Ready
L01, L04, L05, L07, L08, L09

The Doc / Records Center

NSLS-II Documents and Records Center

Welcome to the NSLS-II Documents and Records Center
The NSLS-II Documents and Records Center is a repository for documents and records required for managing, performing and assessing work, as well as recording results, within the Department. The Process Description that governs NSLS-II documents and records can be found here:
[NSLSII-DPT-PDN-001](#)

NSLS-II Management

Management Project Management

Accelerator

Accelerator Coordination Control Room RF Mechanical Utilities Vacuum Insertion Devices Instrumentation Mechanical Engineering Electrical Engineering Accelerator Physics

Photon Science

Soft X-Ray Scattering & Spectroscopy Complex Scattering Hard X-Ray Spectroscopy Diffraction & In-Situ Scattering Imaging & Microscopy Structural Biology Experiment Development Controls User Program

Support Functions

Human Resources Facility Operations Business ESS&H

Quality Training Readiness/Operations Authorization Work Planning & Control Engineering Design & Configuration Management

If you have any questions or feedback regarding this site, please e-mail NSLS2Docs@bnl.gov

Search:

Keyword:

Safety Critical Documents

- Safety Critical Documents
- Controlled Documents
- Records
- Templates
- Policy
- Program Description
- Plan
- Process Description
- Procedures
- Work Instruction (sample)
- Charters
- Design Standard
- Key Safety Record
- My Tasks

- Usable
- Intuitive

- Safety critical docs defined & highlighted
- New, varied document types & templates
- Engineering, procurement, & project files organized
- Keywords developed
- Old docs archived

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- **ESH Performance**
- 2017 Goals
- Summary / Feedback

ESH Performance

- Audits
- Injuries
- Events
- Tier I
- Radiation exposure
- Hazardous waste generation
- Progress on ESH Goals

ESH Audits / Assessments

- Facility Risk Assessment (FRAs)
- FRA Effectiveness
- Nanomaterials
- Non-Ionizing Radiation
- Fixed Ladders
- Confined Space
- EMS Gap Analysis
- Credited controls
- Annual LOTO
- EMS/OHSAS Multi-Topic Internal
 - Chemical Safety
 - Fire Safety
 - Interlocks
 - EMS/OHSAS items:
 - Policy; Aspects; Legal; Objectives; R2A2
- EMS/OHSAS External Registration (NSF)
- Tier I
- 12 IRRs

- Findings tracked (few)
- Value
 - Preparation
 - Bringing in additional expertise

ESH Performance

- Audits
- **Injuries**
- Events
- Tier I
- Radiation exposure
- Hazardous waste generation
- Progress on ESH Goals

Celebration

1.5 million hours with No Recordable Injuries



NLS II
Lobby
July



Injuries FY 16

First Aid
Recordable
DART

Minor treatment
More than just first aid
Days Away, Restricted, or Transferred

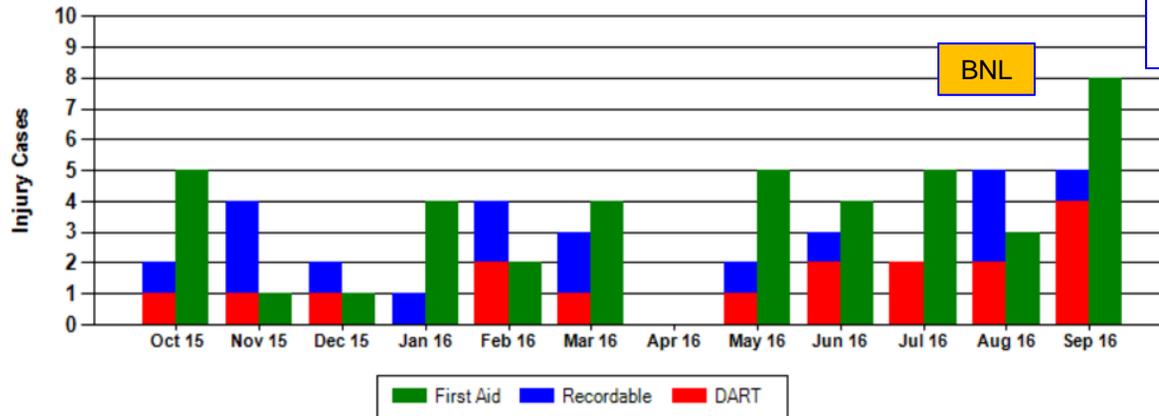
NSLS II
No Recordable/DART

3 First Aid

- Finger muscle strain
- Minor cut; head
- Pinched thumb

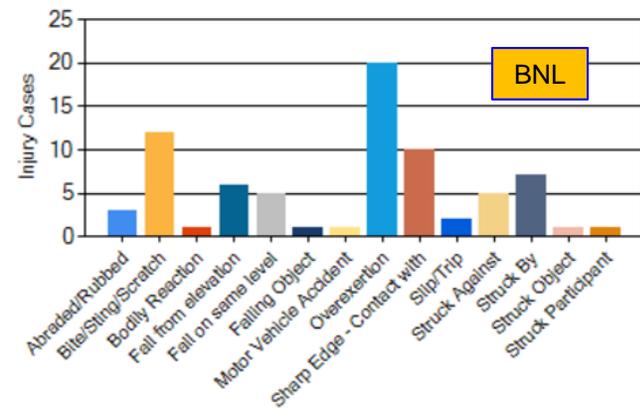
NSLS II FY15
4 First Aid

Fiscal Year 2016 Injury Cases



	YTD Cases	Rates
DART:	17	0.64
Recordable:	33	1.24
First Aid:	42	N/A
Total Injuries:	75	

FY2016 Injuries by Injury Cause



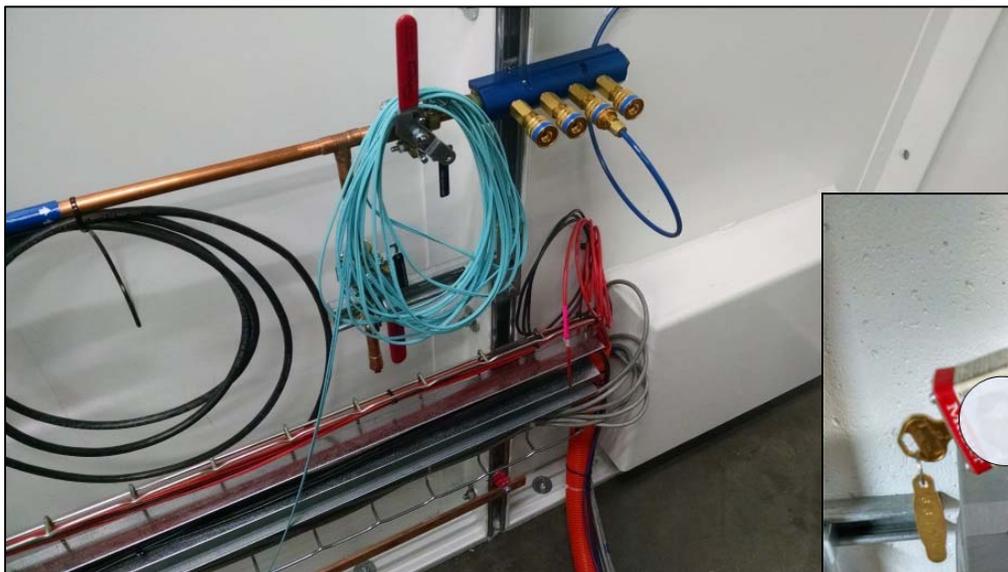
ESH Performance

- Audits
- Injuries
- Events
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NSLS II Events (No Injuries); 9 total FY 16

• Unlocked PPS cabinet	SCLS	Oct '15
• Suspect counterfeit items (plumbing; lifting)	NR; QA	Nov '15
• Unsecured labyrinth	SC4	Jan
• HV cable energized	SC3	Jan
• LOTO error	SC4	Feb
• Forklift strikes wall	NR	Apr
• Broken Be window	SCLS	Jul
• ODH Alarms	SCLS	Aug
• <u>Light fixture shock*</u>	SC2	Sep

*Intertek public notice



- Unsecured labyrinth*
- HV cable energized
- LOTO error

* ASE violation



- Leadership concern
- Investigated
- Low level (no injury or exposure)
- Important
- Learning opportunity

ESH Performance

- Audits
- Injuries
- Events
- **Tier I**
- Radiation exposure
- Hazardous waste generation
- Progress on ESH Goals

Tier I Highlights

	FY14	FY15	FY16
Findings	558	355	513
Inspections	68	54	63

Top 5 findings:

1. **EEI Required (2nd year)** (Trend is good – 2013: 89; 2014: 66; 2015: 48; 2016: 46)
2. Missing safety postings (caution tape tags; machine shop guard stickers, etc.)
3. Cascaded extension cords
4. Missing CMS static inventory posting
5. Housekeeping

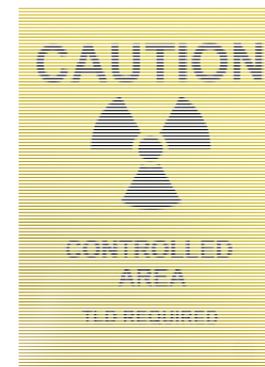
Continued
vigilance

ESH Performance

- Audits
- Injuries
- Events
- Tier I
- **Radiation exposure**
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Personnel Dosimetry CY 16

- Collective Dose Goal = 200 Person-mrem/yr
- Individual Dose Goal = 100 mrem/yr



2016 Collective Dose = 27 person-mrem

4 individual exposures measured (5, 5, 8, & 9 mrem)

- 2015: 39 person mrem
- 2014: 32 person-mrem



~ 600 TLD's issued
each month

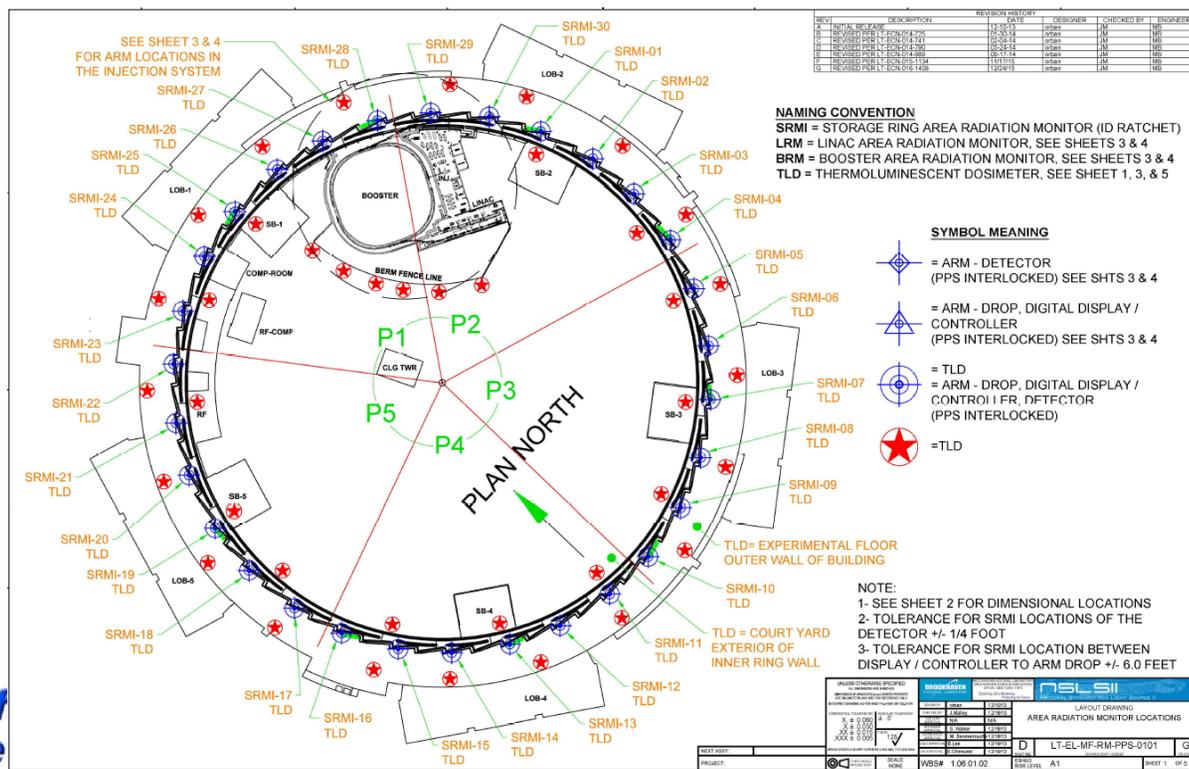
Personnel dosimeters on all

Area Radiation Monitoring CY 16

- Radiation Control Technician radiation surveys
 - 28 Front End (Phase I, II & III)
 - 19 Beamline comprehensive surveys
 - 2-ID, 4-ID, 5-ID, 8-ID, 8-BM, 10-ID, 11-ID, 11-BM, 12-ID, 16-ID, 17-ID, 17-BM, 19-ID, 21-ID
- Normal Ops: All measured values at background
- Existing monitoring and shielding adequate to meet PS shielding policy

Area TLDs

- 122 locations
- Passive



ARMs

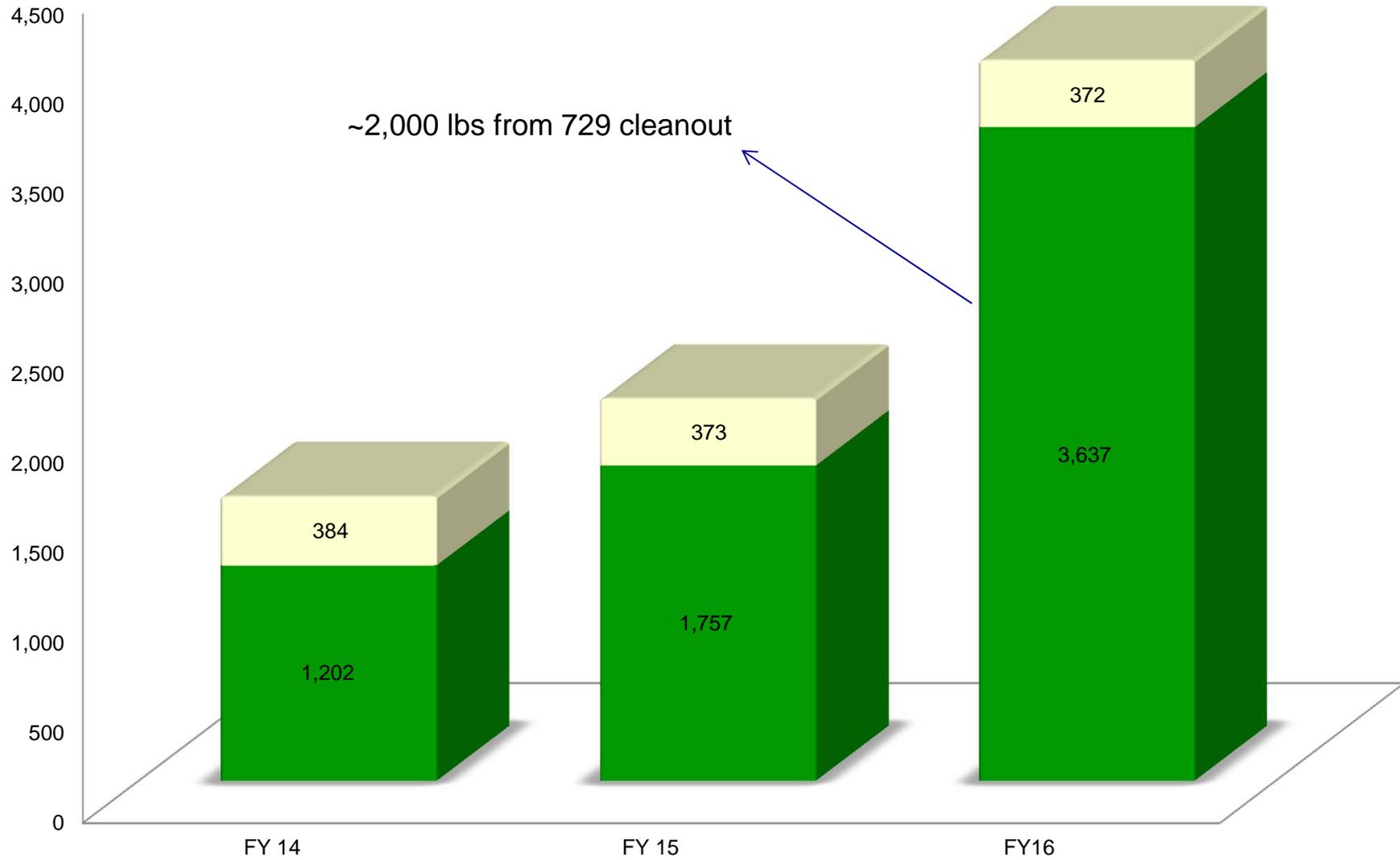
- 67 locations
- Trip gun (>5 mrem)



ESH Performance

- Audits
- Injuries
- Events
- Tier I
- Radiation exposure
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NSLS II Waste Totals



■ Industrial ■ Hazardous

ESH Performance

- Audits
- Injuries
- Events
- Tier I
- Radiation exposure
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ESH Improvement Plan

FY16 Goals

- **Implement rf ID tags for CMS tracking.**

Complete. (The BNL CMS team completed a 'wall to wall' inventory and applied the needed RF tags.)

- **Complete 20 ESH surveillance cards. Emphasize 'laceration' and 'walking and working surfaces'.**

Complete. (ESH staff has been completing the cards. Surveillances have been added to the Tier I inspections.)

- **Complete trip simulator training for 75% of NSLS II staff.**

Complete. (~85% staff trained)

ESH Improvement Plan

FY16 Goals

- **Implement Environmentally Preferable Purchasing (EPP) guidelines.**
Ongoing (Following BNL implementation)
- **Implement Electronic Product Environmental Assessment Tool (EPEAT) purchasing requirements for computer purchases.**
Ongoing (Following BNL implementation)

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- ESH Management Systems
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2017 EMS/OHSAS Goals

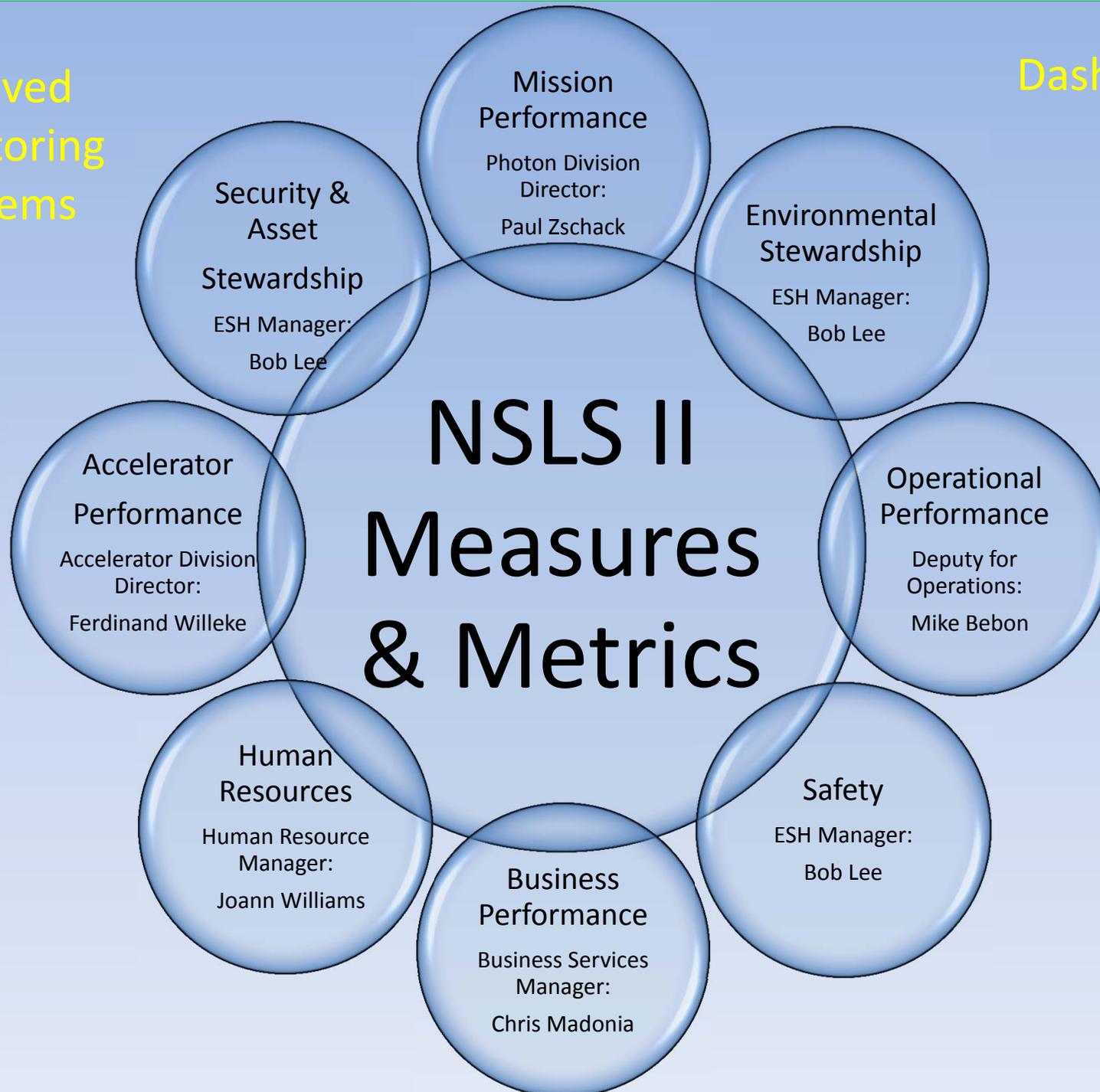
- Implement SAF types to improve ESH review of beamline commissioning and User science throughout the facility.
- Develop a User information summary card.
- ES&H staff to complete solutions oriented service training
- Implement new EMS standard requirements

Continue:

- Implement Environmentally Preferable Purchasing (EPP) guidelines
- Implement Electronic Product Environmental Assessment Tool (EPEAT) purchasing requirements for computer purchases

Improved
Monitoring
~45 items

Dashboard



NSLS II Measures & Metrics

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END

Presentation and Minutes will be posted at:

<http://www.bnl.gov/ps/esh/EMS-OHSAS/default.asp>

Questions / Comments

Please sign the attendance sheet