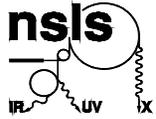


NSLS ESH Program Management Review

December 21, 2006

Presented by
Andrew Ackerman

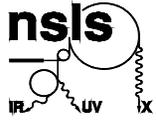


Meeting intent

-
- Provide a **summary** overview of ESH&Q
 - Display program performance

Answer the required management questions

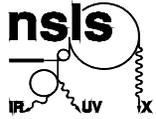
- Are the programs **effective** in achieving policy commitments; meeting objectives and targets; and in providing performance measures
- Are the programs **adequate** to identify significant aspects, hazards, and impacts; in providing adequate resources and information; in assuring staff expertise
- Are the objectives, targets, and measures **suitable** to injuries, illnesses, environmental impacts, stakeholder concerns, regulatory requirements, organization changes.
- Recommended **revisions** to policy, objectives, targets, performance measures or ESH programs.



Scope of Discussion

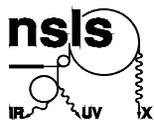
- NSLS ESH Management System
- ESH Performance Measures
- Stakeholder Involvement
- Financial Costs
- Targets for FY 07
- Senior Management Questions

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



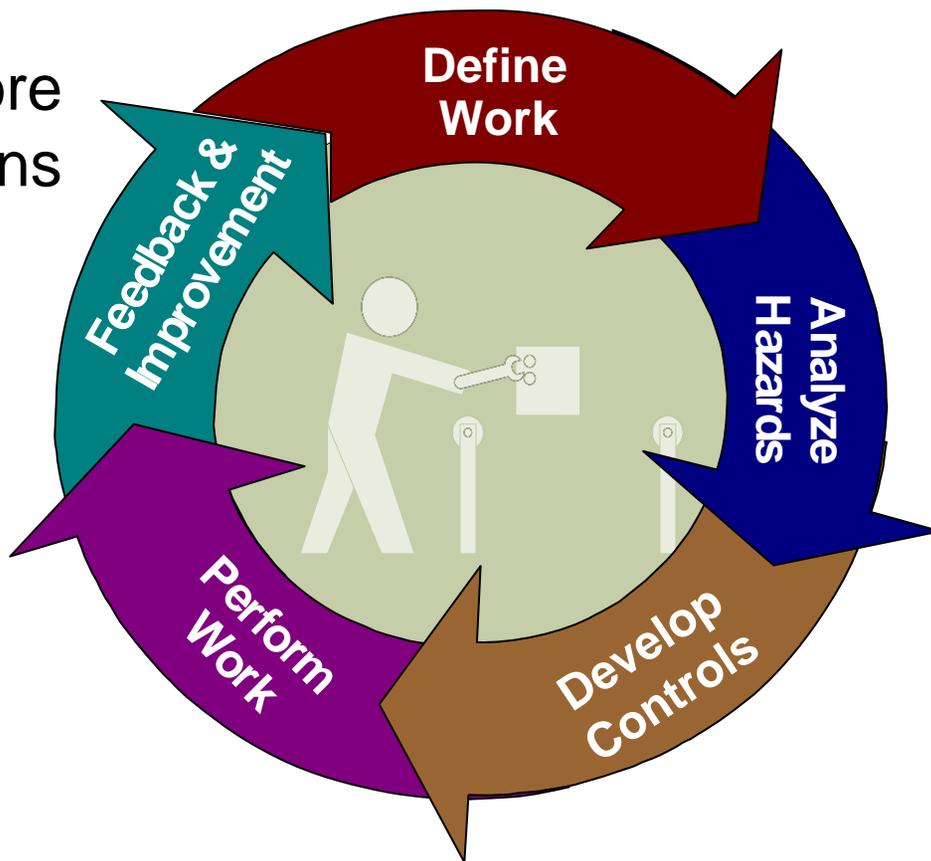
ESH&Q Program Responsibilities

- Emergency planning
- Environmental management
- Experiment safety review
- Hazardous waste management
- Industrial hygiene
- Industrial safety
- Radiation safety
- Self-assessment
- Testing of radiological and laser interlock systems
- Training
- Quality assurance
- Work planning support



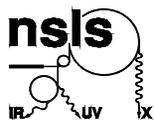
All Work is Planned Integrated Safety Management

Five Core Functions



Line responsibility
Clear roles
Competence=responsibilities
Balanced priorities
ID standards
Controls tailored
Operations authorization

Work Planning
Experiment Review (SAF)
Training
Qualification Matrices
OHSAS
EMS



ESH&Q Personnel at the NSLS

2006 NSLS Personnel

ESH Assoc Chair – Casey
Safety Officer – Ackerman
ESH Coordinator – Gmur
ESH Specialist – Aloï
Safety Engineer – Chmiel
Train Coord. – Corwin (*0.5 FTE*)
Quality Manager – Buckley
Quality Coordinator – Nielson

~7.5 FTE

Matrixed

FS Rep – Foster (06); Zafonte (07)
RCT – Zafonte (06); **Vacant (07)**
ECR – Bauer (~ *0.3 FTE*)
SHSD Rep – Weilandics (~ *0.5 FTE*)

2007 NSLS Personnel

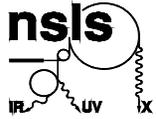
Interim ESH Manager – Ackerman
Safety Officer – Vacant (planned)
ESH Coord – Vacant (planned)
ESH Specialist – Aloï
Safety Engineer – Chmiel
Training Coord. – Corwin (*0.75 FTE*)
Quality Manager – M. Buckley
Quality Coordinator – C. Nielson

NSLS II Personnel

ESH Manager – Casey (*0.25 FTE*)
ESH Coordinator – Gmur (*0.25 FTE*)

~ 6.25 FTE

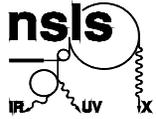
Return to 7.5 planned



Overview of OHSAS Program

- Detailed in the [NSLS OHSAS Manual](#)
- Task specific risks evaluated for 38 Activities = [JRA's](#)
- Facility risks evaluated for 9 topics = [FRA's](#)
- JRA's linked with
 - [Worker Qualification](#)
 - Work Planning
- Strong worker involvement in:
 - Development of qualification matrices
 - Risk assessment
 - Work planning
 - ESH Improvement Committee

Noteworthy Practice
(2 Audits)



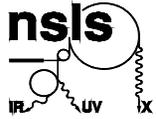
Overview of EMS Program

- Detailed in the [NSLS EMS Manual](#)
- [Significant Environmental Aspects:](#)
 - Wastes
 - Chemical storage
 - Liquid discharges
 - Air Discharges
 - * Soil activation
 - * Electrical consumption
 - * Radioactive material
 - * Water use

Aspect activities

Machine shop work
Water systems maintenance
Vacuum pump maintenance
Crystal etching facility
Photographic dark room
Synchrotron operation
Elec/Mech maintenance
Some experiments

* Present but not significant

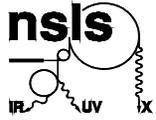


Work Planning / Experiment Review

- Work Planning (~60 Enhanced Work Plans)
 - Manager – Boerner (Operations Division)
 - 25 Work Control Coordinators
 - Primary Reviewer – Aloï

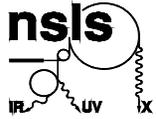
- Experiment Review (~1500 SAF's)
 - Experiment Review Coordinators
 - Ackerman
 - Aloï
 - Gmur
 - Extended Reviews (10 experiments)
 - More discussion; written plans
 - Ad Hoc Committee

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



2006 ESH 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



NSLS ESH FY 06 Performance Objective

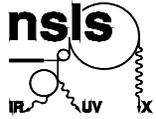
Ensure operational excellence in ESH programs

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

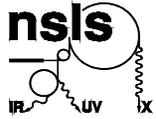
2006 ESH Performance Measures

- **Progress on ESH Targets (14 total)**
- Results of assessments and audits
- Tier I
- Traffic violations
- Training statistics
- Injuries
- Incidents
- Radiation exposure
- Hazardous waste generation
- Spills



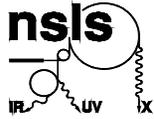
2006 ESH Target Progress

- Characterize potential for lead exposure at the NSLS and revise policies and practices as needed
 - Substantial data collected during year.
 - Confirmed that exposures are low and that work practices are adequate to control exposures.
 - Respirators are not needed for most jobs.
 - NSLS requirements revised to meet new subject area
- Complete OHSAS 18001 program development and successfully pass registration audit
 - Registration audit was passed, internal audit and surveillance audit also successfully completed



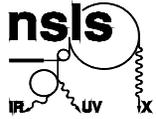
2006 ESH Target Progress

- Prepare for DOE ISM assessment scheduled for 1st quarter CY 07
 - Assessment of NSLS ISM program conducted; interviews with 30 NSLS staff and users.
 - Training program for staff and user initiated (Safety Moments)
- Complete second round of worker qualification program upgrades
 - Discussion with NSLS supervisors regarding implementation continues.
 - Program fully implemented in electrical engineering
 - Mechanical engineering and user science requires more work



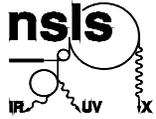
2006 ESH Target Progress

- Ensure that hazardous equipment identification and practices are adequate and are maintained going forward for existing and new equipment
 - Detailed assessment at beam lines indicated high rate of implementation
 - Additional guidance has been provided
 - Labeling standardized; Checklists next
- Fully implement NRTL inspection requirements for existing equipment and ensure implementation of NRTL requirements for purchased equipment.
 - NRTL inspection program defined and implemented
 - Active program for inspecting User equipment
 - Audit of new purchases showed poor understanding of requirements



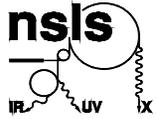
2006 ESH Target Progress

- Review training program requirements for staff and users and implementation rates
 - A detailed review of current JTAs was initiated with particular focus on Beam line staff, electrical safety, and LOTO
 - Significant revisions and improvements in JTA's
- Complete SAD and ASE upgrade for NSLS
 - SAD and ASE upgrade completed and approved by BNL and DOE management



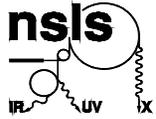
2006 ESH Target Progress

- Examine implications of the new Part 851 to NSLS ESH and operations programs and determine the correct course of action
 - Still in progress
 - Expect significant effort needed next year (Training, Contractors, IH, **Electrical**, Fire, Pressure)
- Review the issues associated with the ALS beam line shielding configuration problems and determine if the NSLS program requires changes
 - A detailed review was completed
 - No significant deficiencies found
 - Several opportunities for improvement identified; implementation has begun



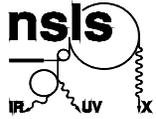
2006 ESH Target Progress

- Continue evaluation of synthetic oils for application in vacuum pumps
 - Testing continues for third year
 - No change in oil properties observed
- Evaluate waste generation associated with maintenance of cooling water systems and determine if alternate processes or materials could reduce current waste streams
 - pH neutralization and then filtration to remove copper approved.
 - Expect significant reduction in hazardous waste generation (Ridlyme rinse).



2006 ESH Targets Progress

- Evaluate if alternative refrigerants are available for the cooling water chillers currently using R-22 Freon
 - Review was conducted
 - Only Plant Engineering equipment, no NSLS department use of R-22 Freon
 - Plant Engineering evaluation = Replacement not cost effective
- Submit 2 proposals for pollution prevention projects:
 - Replacement of RF ignitrons in an effort to reduce mercury inventory at the NSLS
 - Purchase of a aerosol can popper as a means to reduce the volume of hazardous waste disposed of annually at the NSLS
 - NSLS funded replacement of RF ignitrons. New solid state devices are installed
 - BNL funded purchase of aerosol can popper. ~\$1300 in disposal costs saved in FY06



2006 ESH Targets Progress Summary

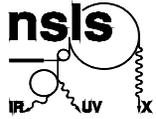
- Significant progress on all 14 targets:

- Lead exposure and handling
- OHSAS
- ISM
- Worker Qualification
- Training
- SAD / ASE
- 851
- NRTL
- Configuration control
- Oil evaluation
- Waste reduction
- Freon
- Mercury
- Popped cans

- Are the programs **effective**? Meeting objectives and targets?
- Are the programs **adequate**? ID hazards? Providing resources?
- Are the objectives, targets, measures **suitable**? Stakeholder concerns, regulations, illness or injury?

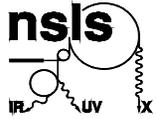
2006 ESH Performance Measures

- Progress on ESH Targets
- **Results of assessments and audits**
- Tier I
- Traffic violations
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- Spills



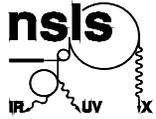
NSLS Internal Audits and Assessments (11 Total)

- **Electrical safety self-assessment**
- **Compliance with purchase requirements for NRTL equipment**
- **Part 851 self-assessment**
- **Gap analysis of interim nano-material safety requirements**
- ISM self-assessment
- Review of electrical equipment brought by vendors during User Meeting
- Beam line reviews: electrical safety issues / hazardous equipment
- Drill and critique of department local emergency response
- JRA's; FRA's; EMS process assessments
- Beam line configuration control review (ALS Lesson Learned)
- Legacy chemical; >1 liter storage assessment



BNL & Other Audits and Assessments (16 Total)

- **Electrical safety, “Lines of Inquiry”**
- **Nano-material assessment by BNL/DOE**
- BNL Independent Oversight electrical safety verification audit
- OHSAS registration audit and follow-up surveillance
- Radiological work planning
- ISO 14001 & OHSAS 18001 verification by ESHQ
- Field verification of OSHA finding close-outs by DOE/BNL
- Job Training Assessment (JTA) review
- BNL/BSA ISM assessment
- IH multi-topic assessment by BNL/DOE (LOTO. Lead, Interlocks)
- RGD compliance audit
- 2001 Non-ionizing radiation assessment verification
- BNL Independent Oversight self assessment review
- NYS DEC RCRA audit
- BHSO Laser Safety
- BHSO, “Shelter in Place” audit



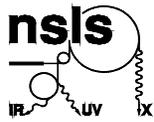
Significant Assessment and Audit Findings

Electrical

- Minor
 - Incomplete enclosure
 - Missing panel covers
- Major
 - Mixed utilities
 - Overloaded cable trays / legacy cable
 - Inadequate panel access

Planning in progress for resolution

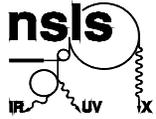
- NRTL
 - 20,000 items; ~1000 inspected
 - User item inspection ongoing = significant challenge



Significant Assessment and Audit Findings

Nano-Science Safety

- Nano-science at the NSLS characterized and evaluated
- BNL Interim Standard requirement implementation begun.
 - Requirements established and implemented
 - Requirements communicated
 - Newsletter
 - Town meetings
 - Safety Approval Form
 - Individual meetings
- More to resolve; Meeting with INSAC planned
 - HEPA filtration
 - PPE
 - Transport

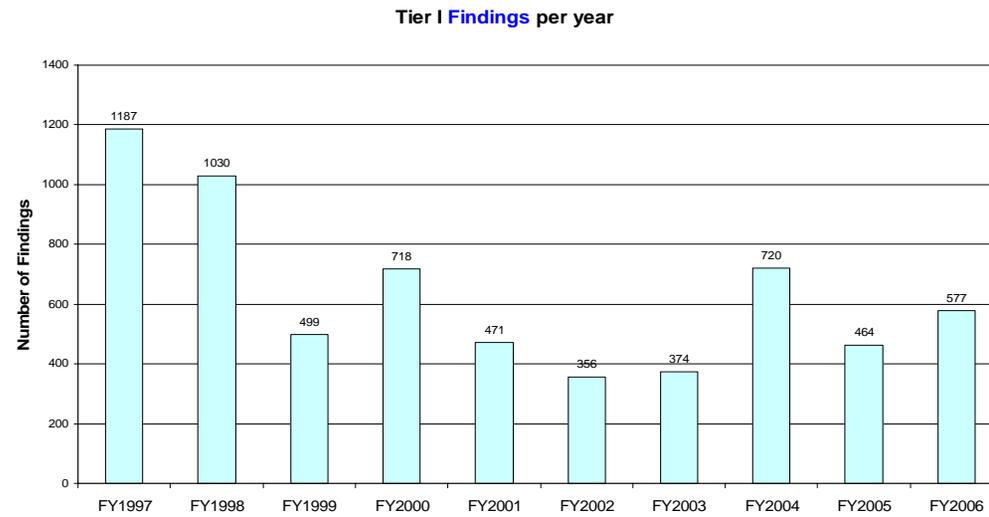
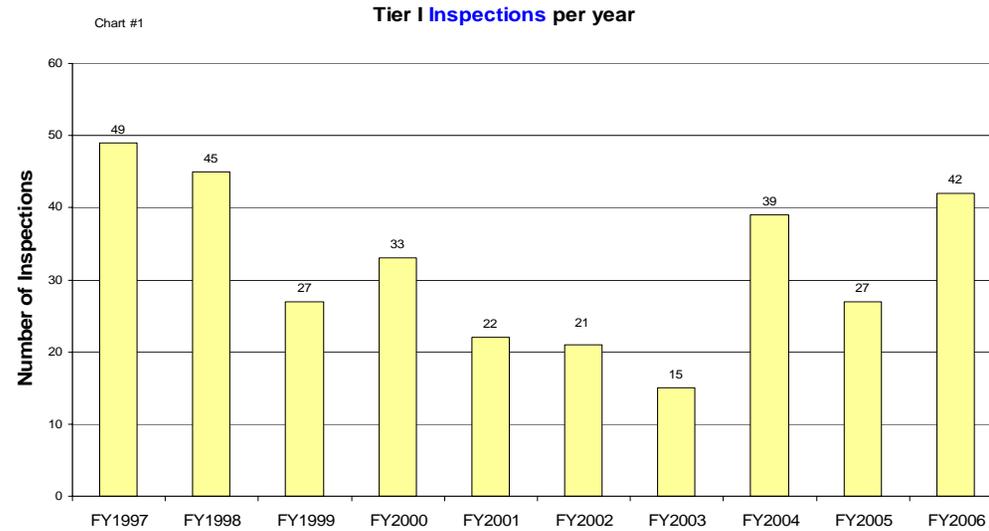


Assessment and Audit Summary

- Every audit finds something
 - Minor deficiencies
 - Improvement opportunities
- No need to increase audit frequency or number!!
- Significant resource needed to meet audit requirements
 - Results in some program loss
- Internal assessments are most effective

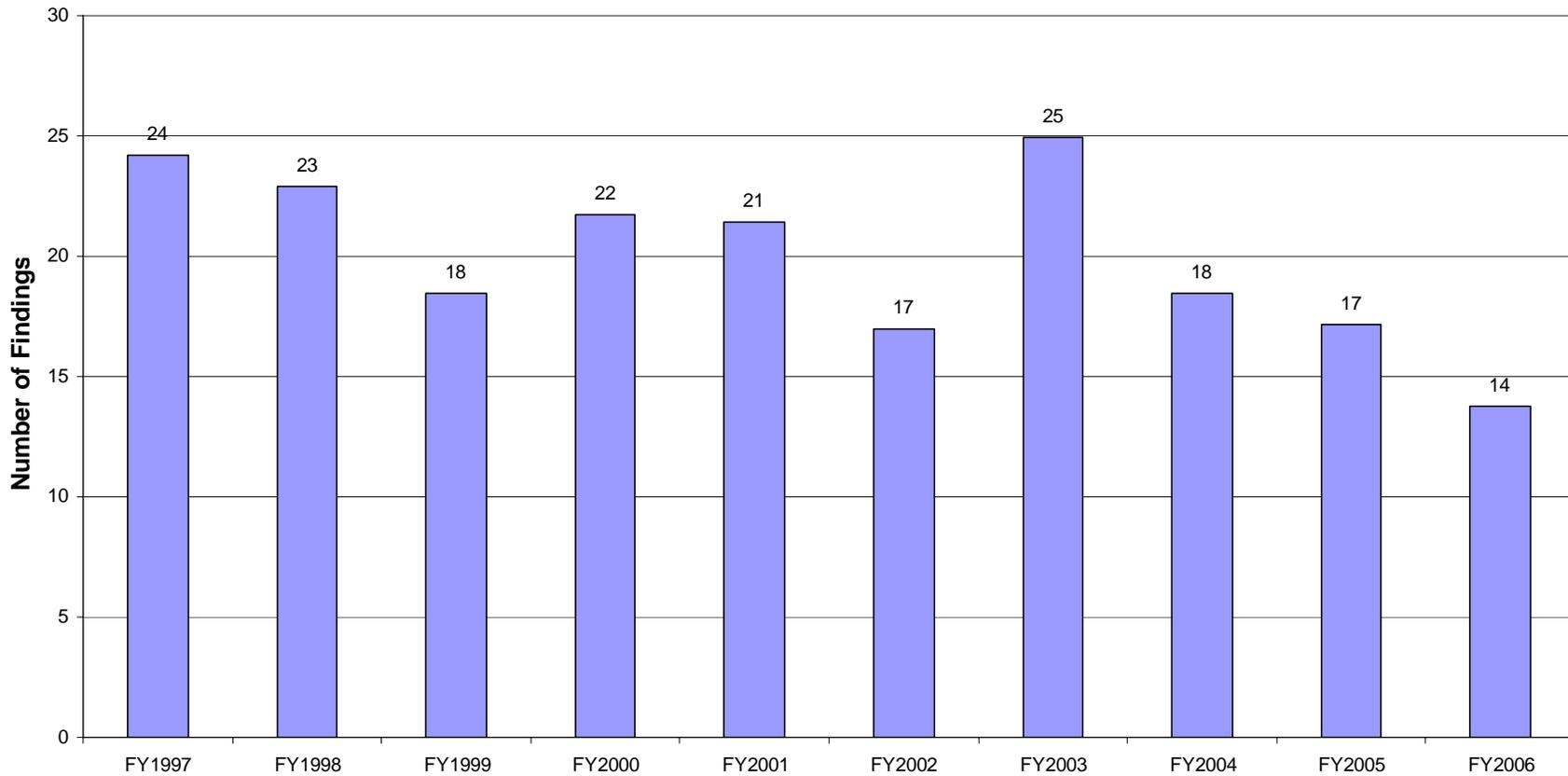
2006 ESH Performance Measures

- Progress on ESH Targets
- Results of assessments and audits
- **Tier I**
- Traffic violations
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- Injuries
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- Spills



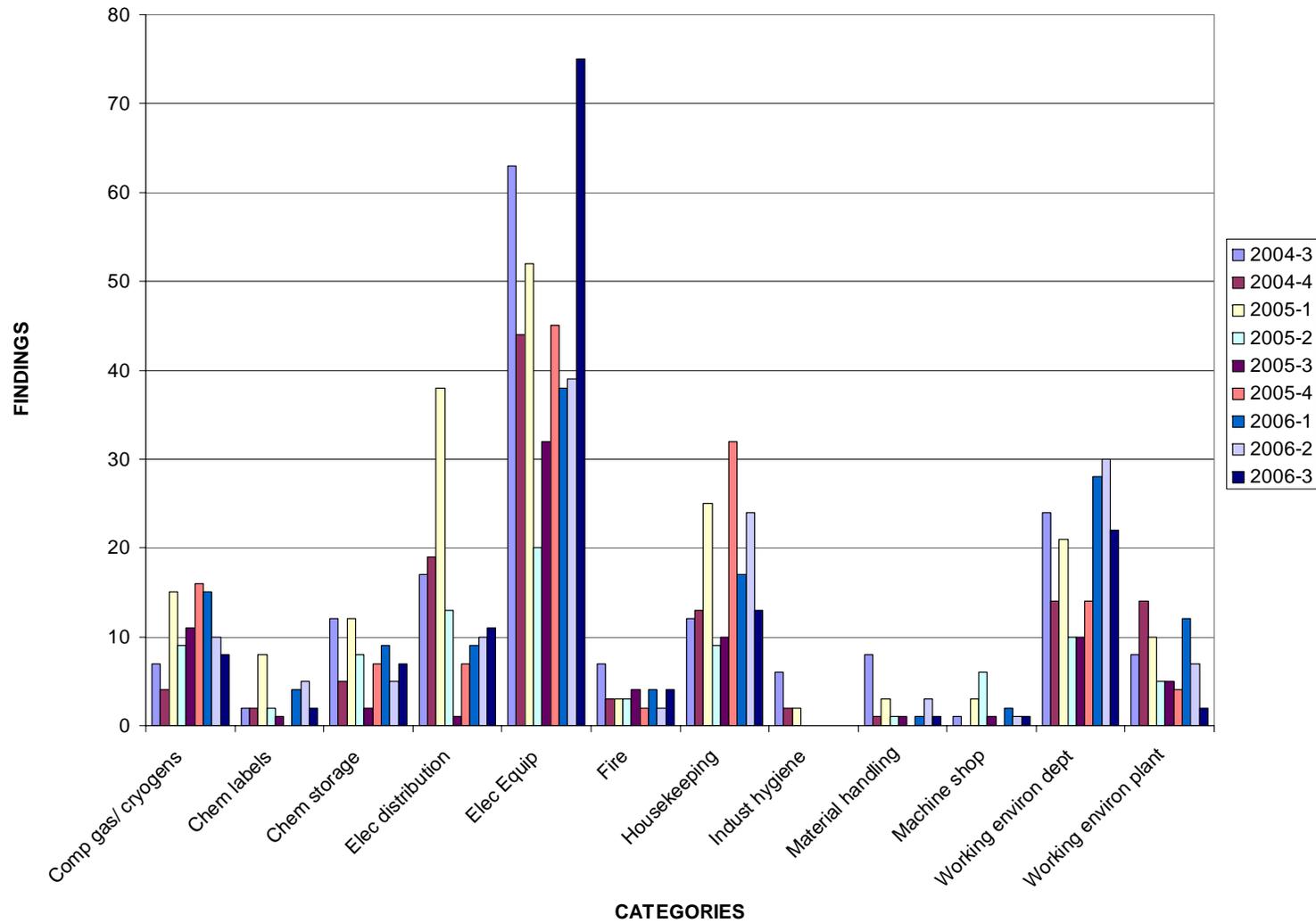
- 01 & 02: Competing interests and loss of Safety Officer
- Mid 03: New staff member
- Findings proportional to inspection number

Findings per Inspection



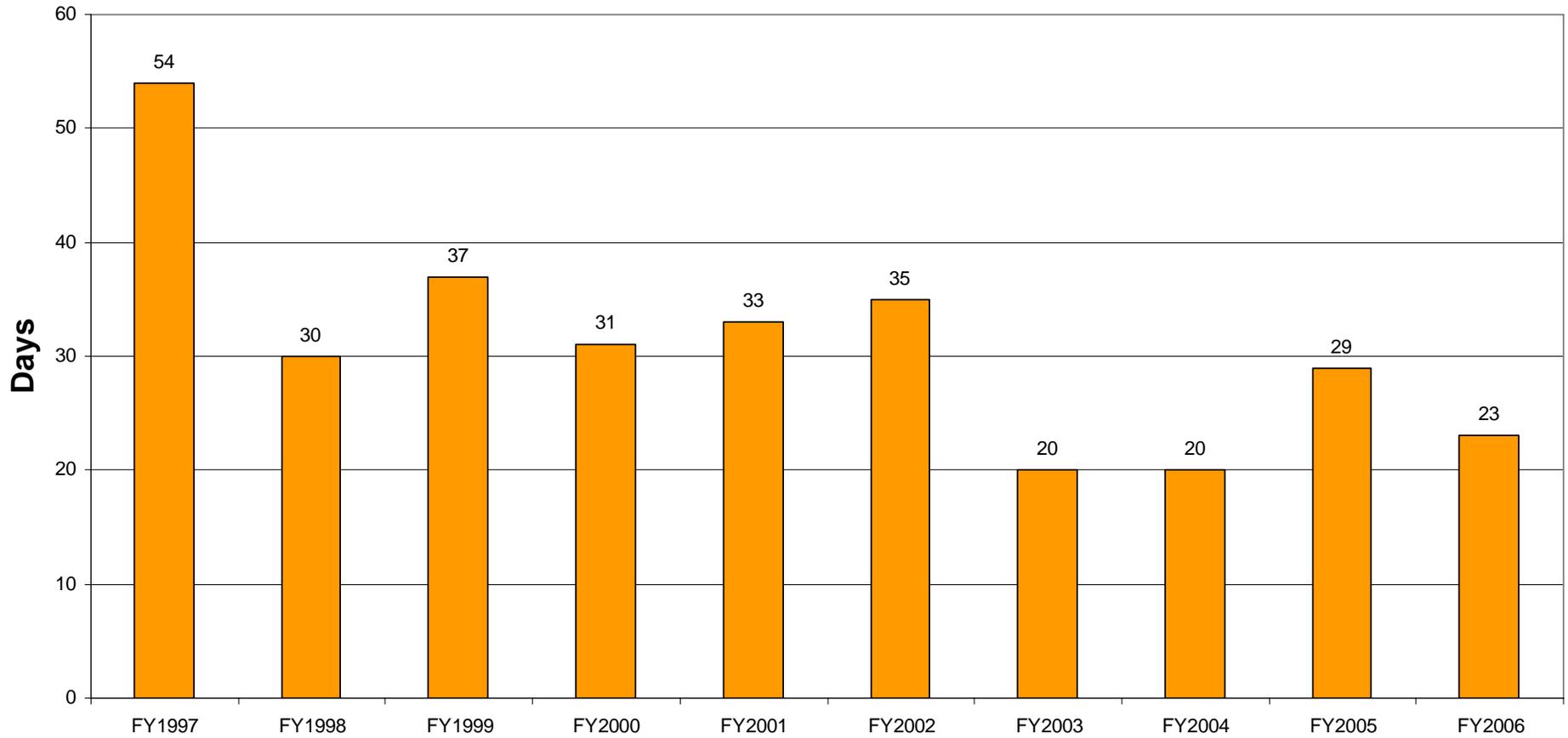
- 03 – 06: Downward trend
- Management emphasis on safety
- New staff = new rigor, adequate resource

Tier I Trends-Type of Findings by Quarter

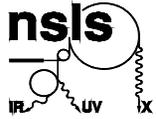


- Electrical equipment findings persistent
- Housekeeping emphasis
- Working environ = signs, labels, storage

Turnaround Time: Notification to Correction of Tier I Findings



- 01 – 02: Reduced attention
- 03: More attention



Tier 1 Summary

- Comprehensive review of work locations through-out the department
- Expert core team and involvement with staff
- All findings are assigned and tracked until closed.
 - Detailed reports; successive notification; review of past findings; action plans
- Excellent trending
- Need more work on electrical (perhaps outside of Tier I)

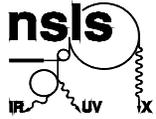
Conclusion:

- Program is exemplary
- Adequate resources assigned

- Are the programs **effective**?
Providing performance measures?
- Are the programs **adequate**? ID hazards, providing resources?

2006 ESH Performance Measures

- Progress on ESH Targets
- Results of assessments and audits
- Tier I
- **Traffic violations**
- Training statistics
- Injuries
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Traffic Tickets Received NSLS Related Personnel

32 tickets in 2006
(50 in 05)

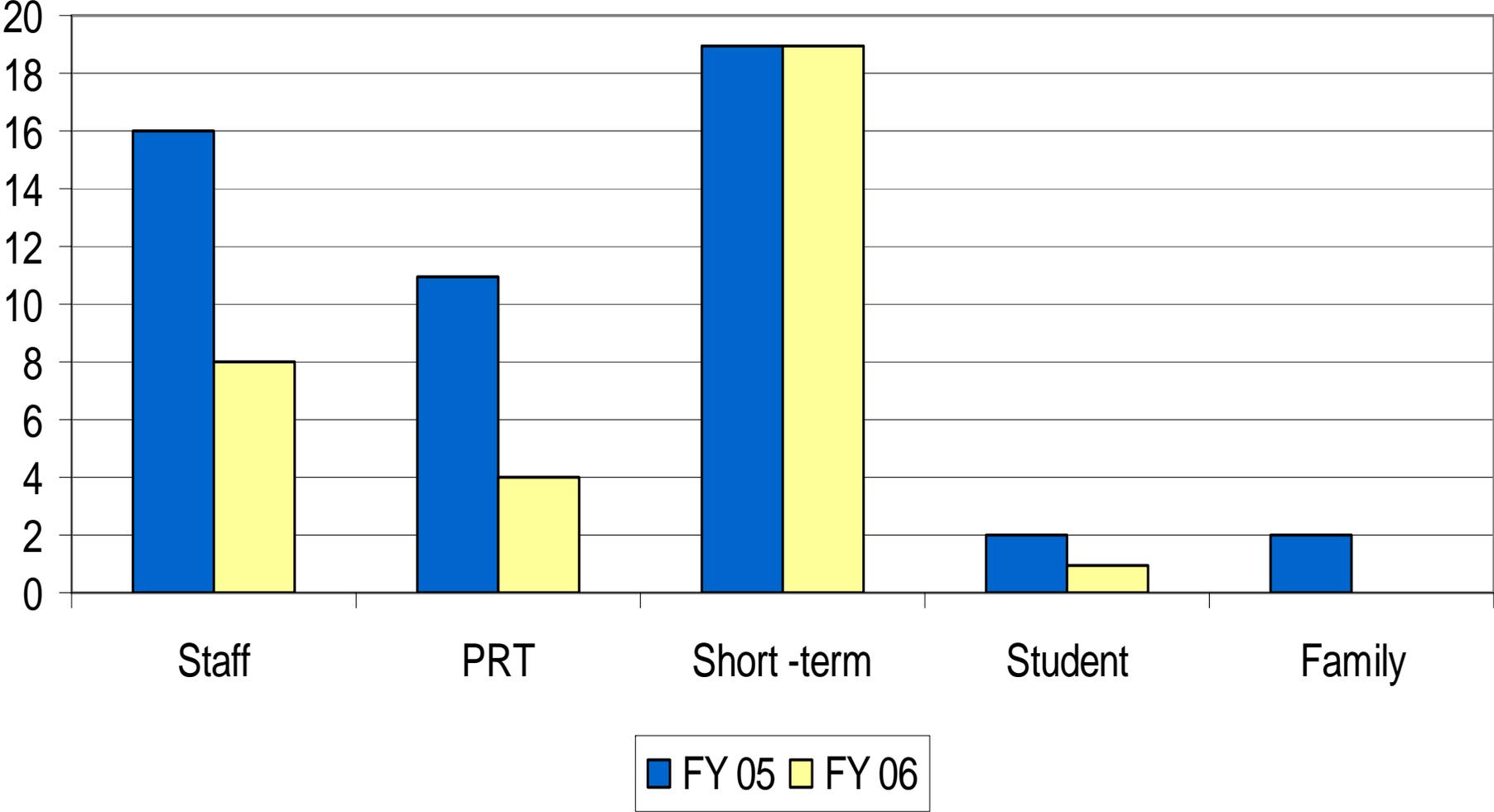
Personnel

- 19 short-term users
- **8 staff members**
- 4 long term users
- 1 student

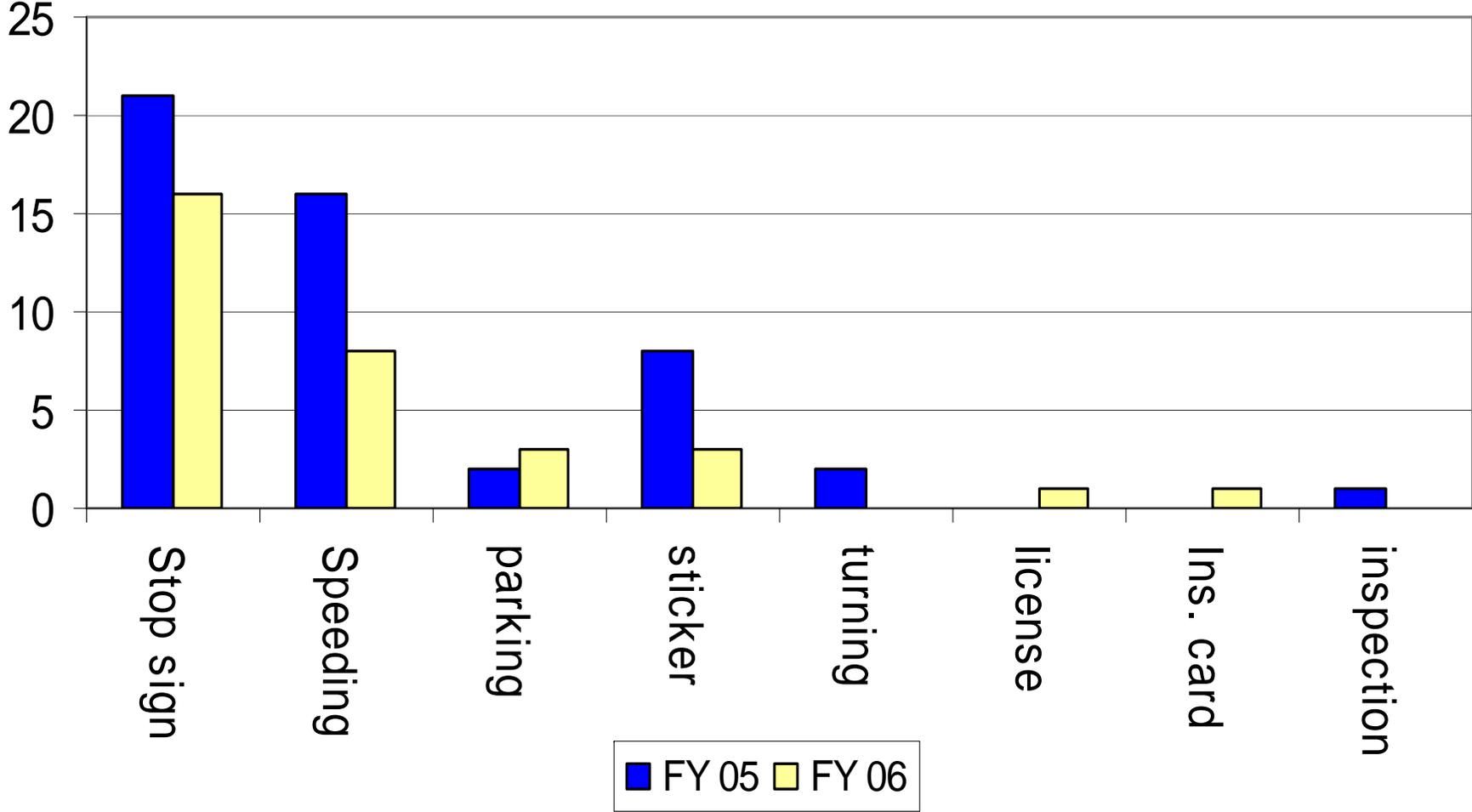
Type

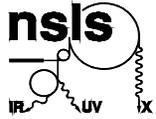
- 16 – stop sign violation
- 8 – speeding
- 3 – no BNL car sticker or placard
- 3 – parking
- 1 - no driver's license
- 1 – no insurance card

Ticket History



Tickets by FY



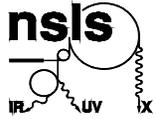


Traffic Violation Summary

- Trend is downward
- Staff and local's have received the message (strong BNL emphasis)
- Visitors need most attention

2006 ESH Performance Measures

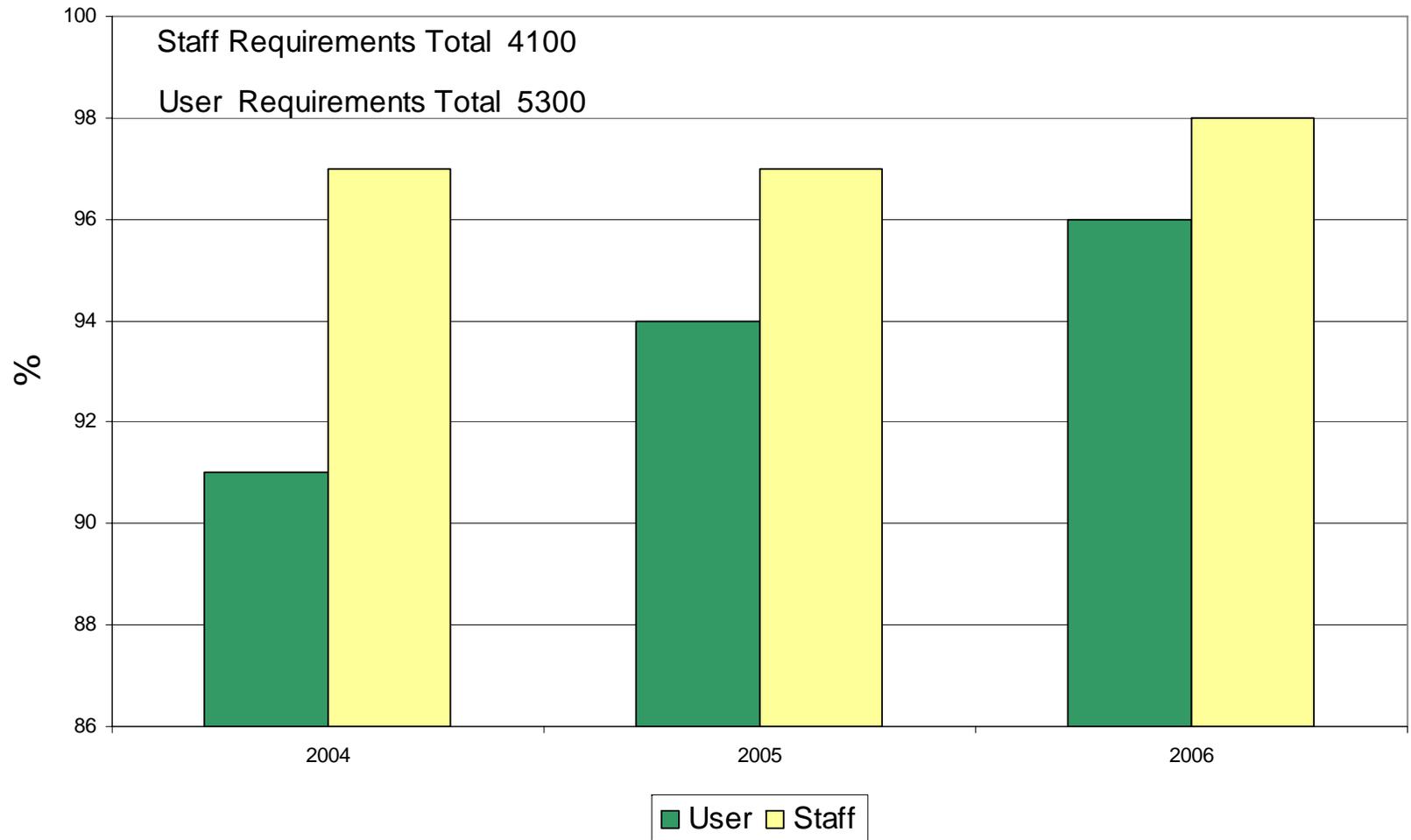
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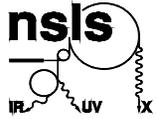


Training Improvements

- Focus on JTA's; training requirements pertinent to work
 - Development of the on-line LOTO and electrical safety questionnaire = collect accurate information
 - Significant reduction in the training assigned to beam line staff and users
- Focus on JTA's continues
- BLOSA upgrade in progress

Training Requirement Compliance



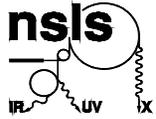


Training Summary

-
- Compliance remains excellent
 - Aggressive tracking and thoughtful assignment of requirements works
 - JTA refinement should continue

2006 ESH Performance Measures

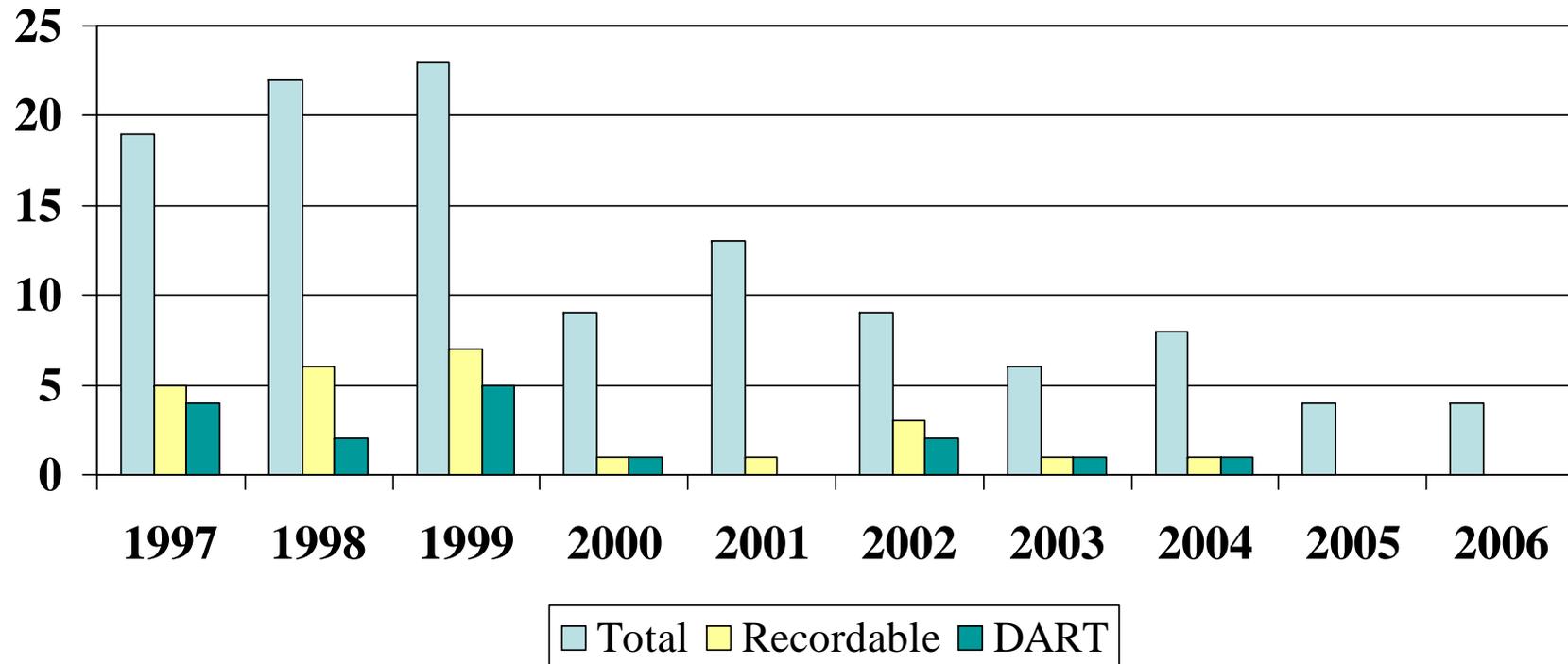
- Progress on ESH Targets
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Four NSLS Injuries Reported to Clinic in FY 2006

- Muscle strain from handling air pad (30 lbs.)
- Numbness in finger from contact with cryogenic liquid
- Injured ankle from slip on stairs
- Pain in right hip from tripping over object on floor

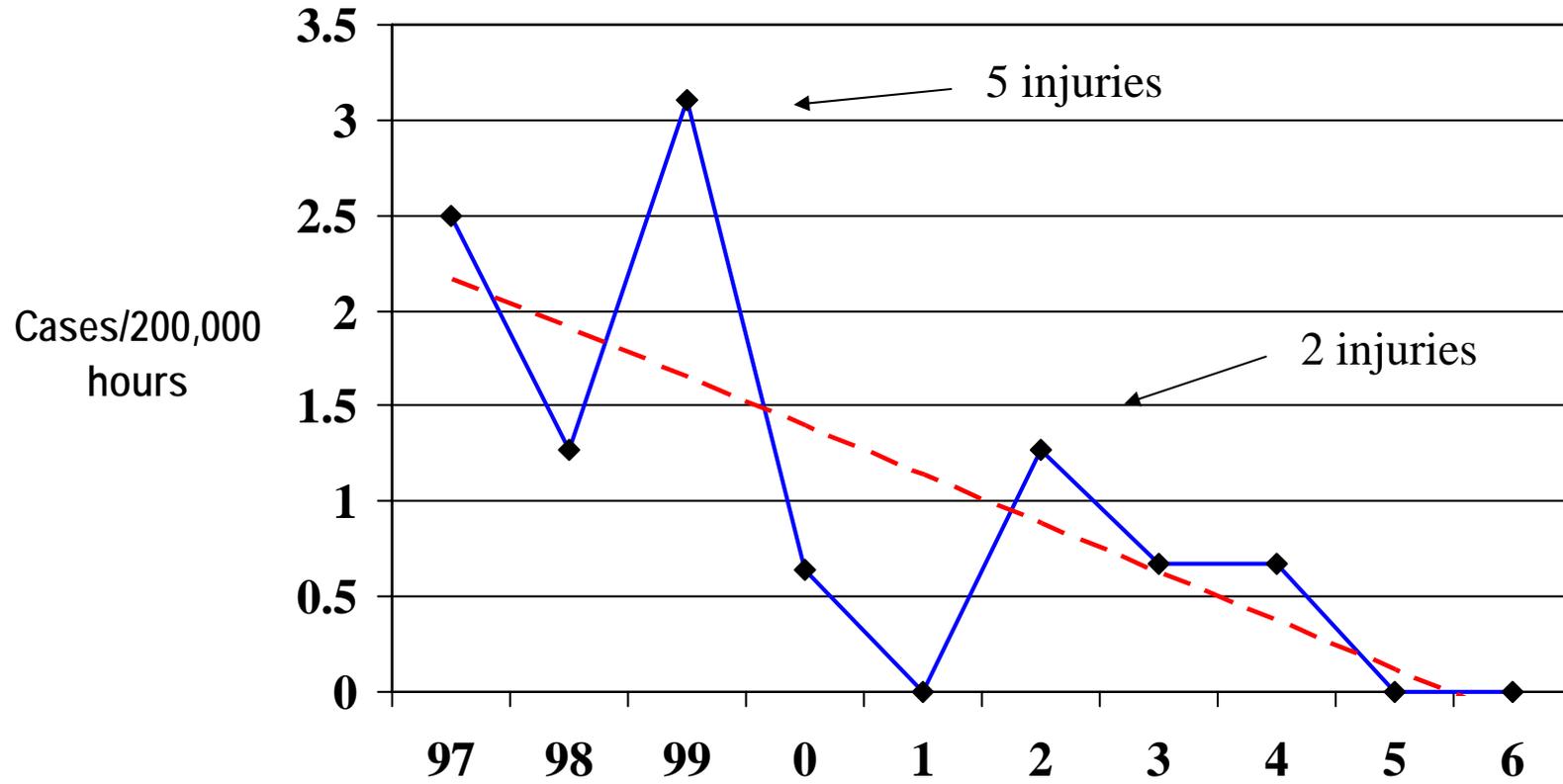
Clinic Visits per FY



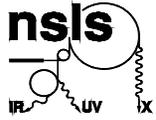
- Trend is down
- No DART or Recordable for 05 & 06

DART Rate

NLSL Staff Only

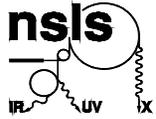


- Trend is down
- No DART for 05 & 06



Injury Rate Conclusion

- Injury rates and severity continue to decline
- May have over-emphasized the numbers; could be reluctance to visit the clinic
- Zero DART cases will be hard to maintain
(a good problem)



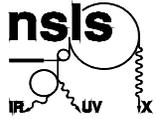
Traffic, Training, Injury Rate Summary

- Traffic violations down
- Training compliance excellent
- Zero DART cases 05 & 06

- Are the programs **effective**? Achieving policy commitments and objectives? Providing performance measures?
- Are the programs **adequate**? Providing adequate resources and information

2006 ESH Performance Measures

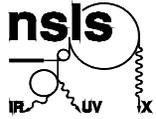
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2006 Incidents

- ORPS Reports
 - **Chemical Spill in Wet Chemistry Lab**
 - Unexpected Energized Electrical Cord Cut

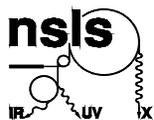
- NSLS Non-conformance Reports
 - X-Ray sextupole defocusing power supply shut-off failure



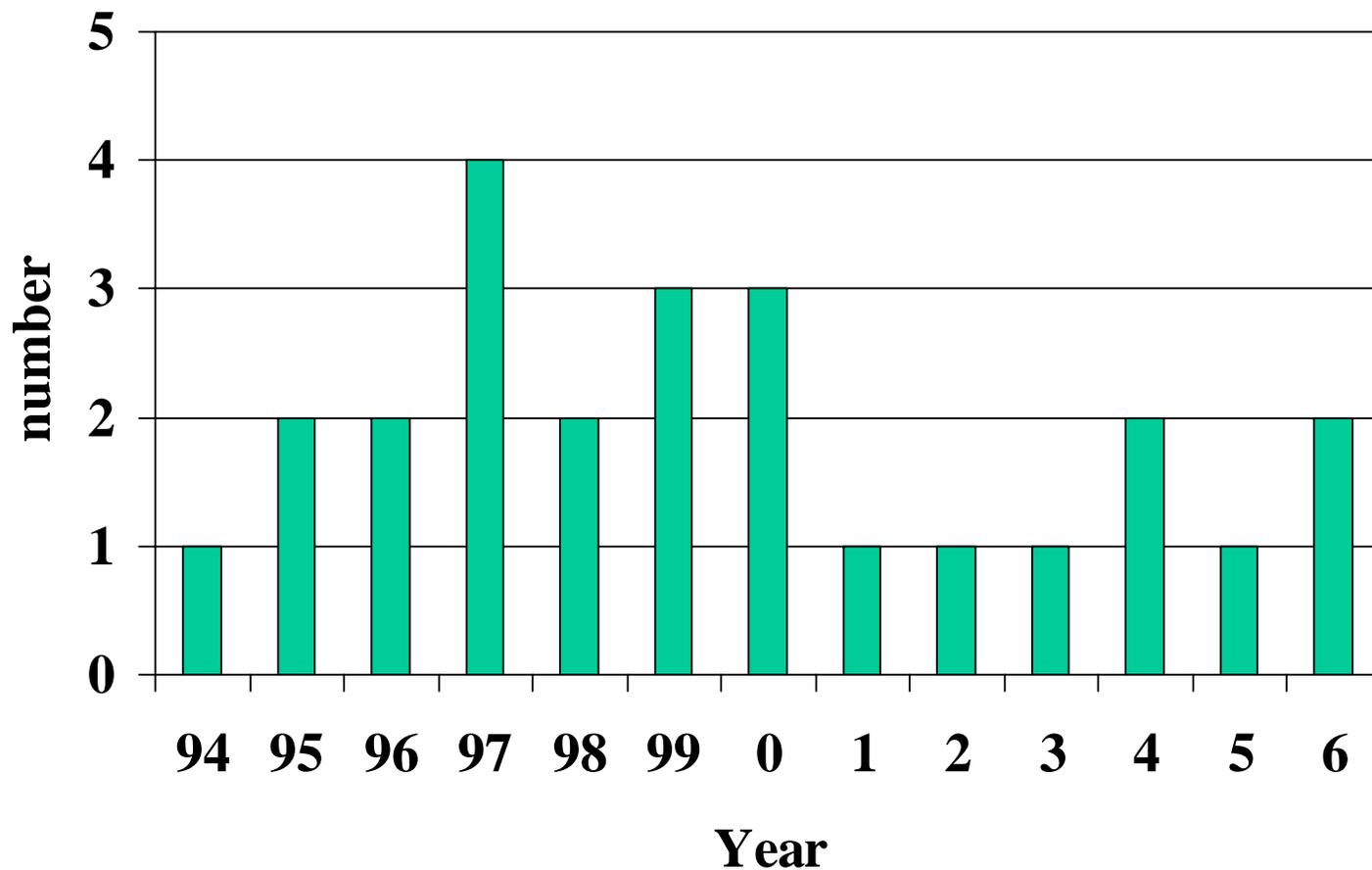
2006 Incidents

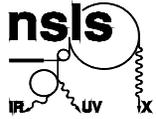
- NSLS Investigations

- Configuration control procedure failure; beam line shielding
- Laser installation; inadequate documentation
- Machine shop equipment lock out (*not LOTO*) investigation
- Inadequate PPE; cryogen injury
- Injured ankle from slip on stairs
- Muscle strain from handling air pad (~30 lbs)
- Hip pain; trip over object on the floor



NSLS ORPS Occurrences for FY1994-2006



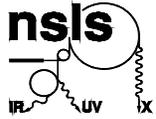


2006 Incident Summary

- All incidents rigorously investigated
- We support the Laboratory emphasis on incident/event investigation and reporting, but recognize:
 - Resource intensive
 - Still concerned about ORPS statistics
- Event categorizers have done a good job; thoughtful & analytical
 - They need continued support
 - As the program expands, demand on their time will expand

2006 ESH 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



Radiation Monitoring

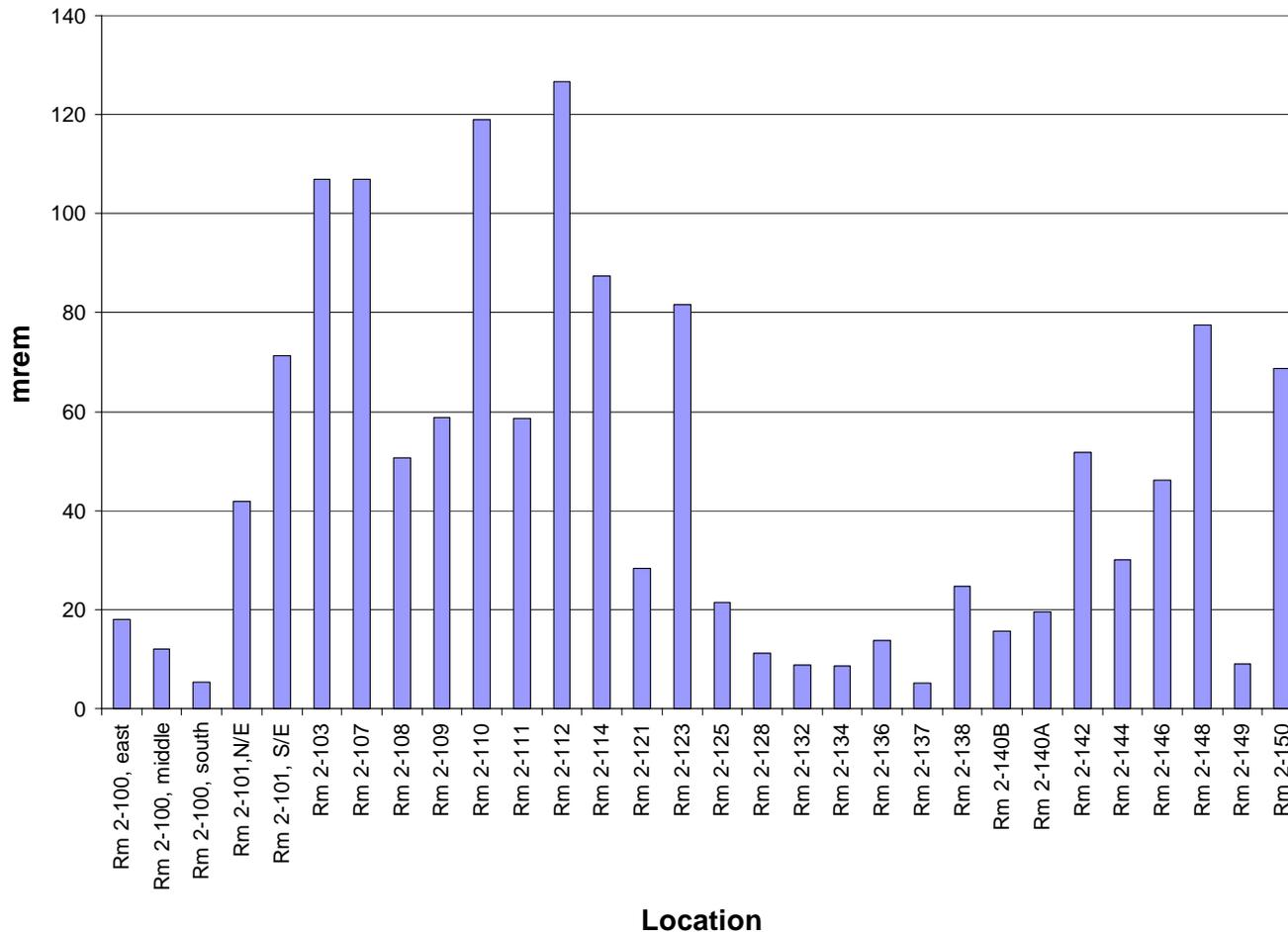
- Dose to personnel very low
 - Collective dose (through 10/2006) = 51 mRem (29 N; 22 G)
 - Distributed over ~ 3000 badges (monthly turnover)

- Area monitoring continues
 - 25 Chipmunks
 - Read out and alarm; locally and in the control room
 - History files
 - ~60 TLD's distributed throughout the facility

- Administrative controls in place
 - Scheduled injection
 - Announce injection
 - Posting
 - Interlocked enunciators in problem areas
 - Operations response procedure (Chipmunks)

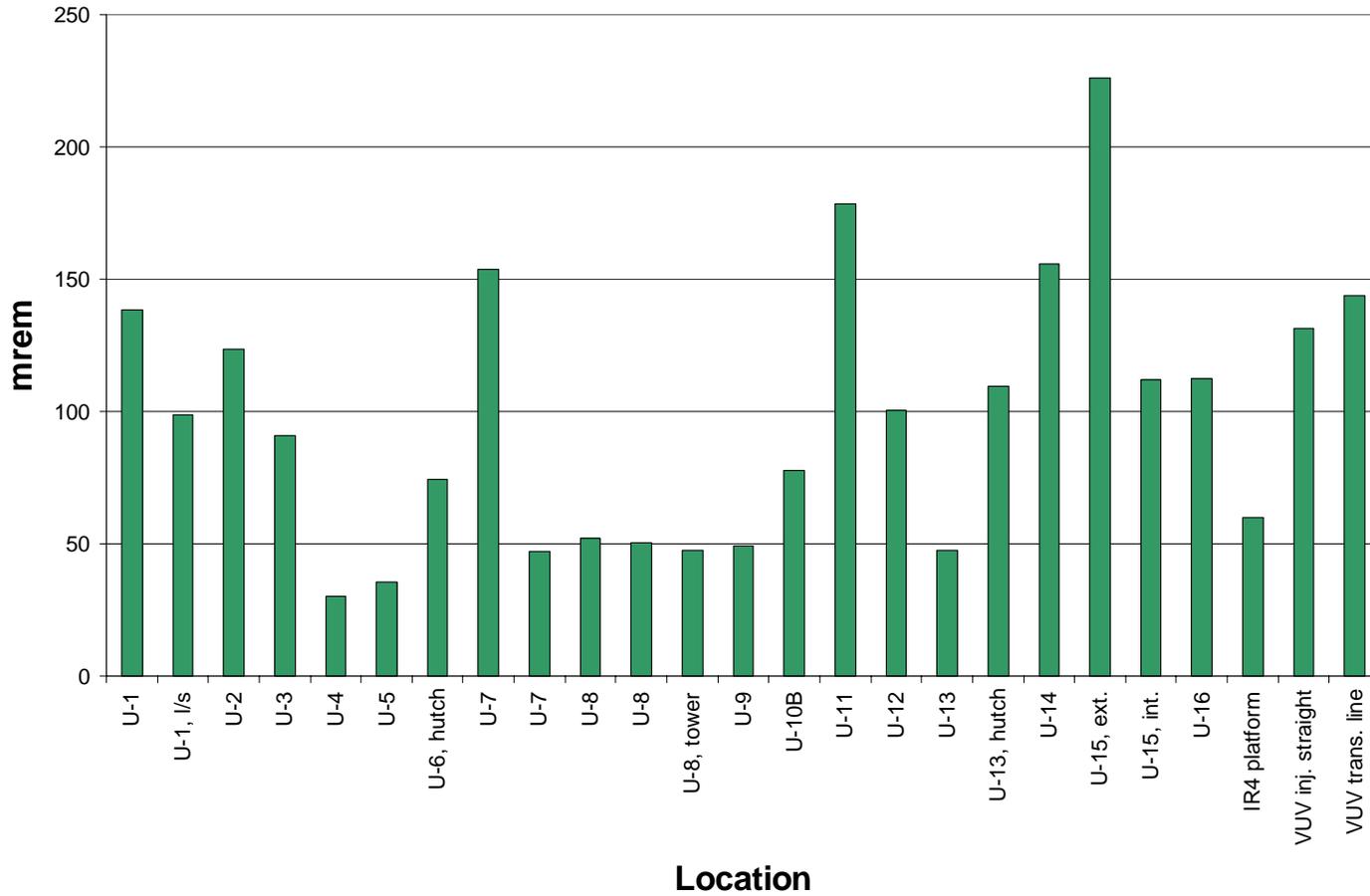
- Levels can be significant
- Pattern well defined
- Injection dominates
- Controls effective

2nd Floor
 NSLS Area Monitor Data - 2006
 Data Measured Through September
 0.23 Occupancy Factor Applied



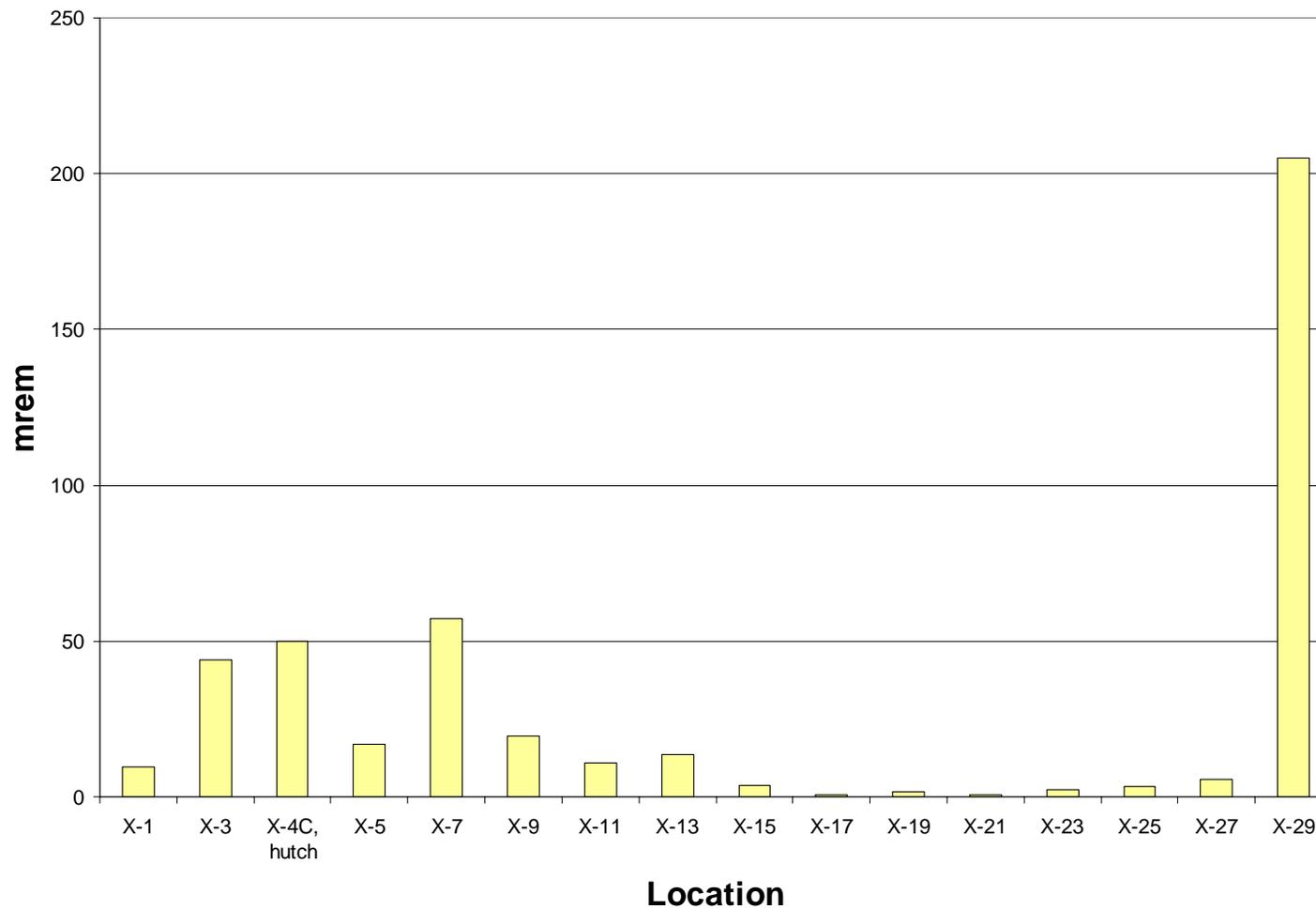
- > 25 mRem posted
- Machine conditions displayed; Monitors read locally and to Control Rm.
- Daily accumulation monitored; > 1 mRem = Operations response
- Scheduled injection for low occupancy times
- 45 minute injection limit

VUV Floor
NSLS Area Radiation Monitor Data - 2006
Data Measured Through September
0.23 Occupancy Factor Applied



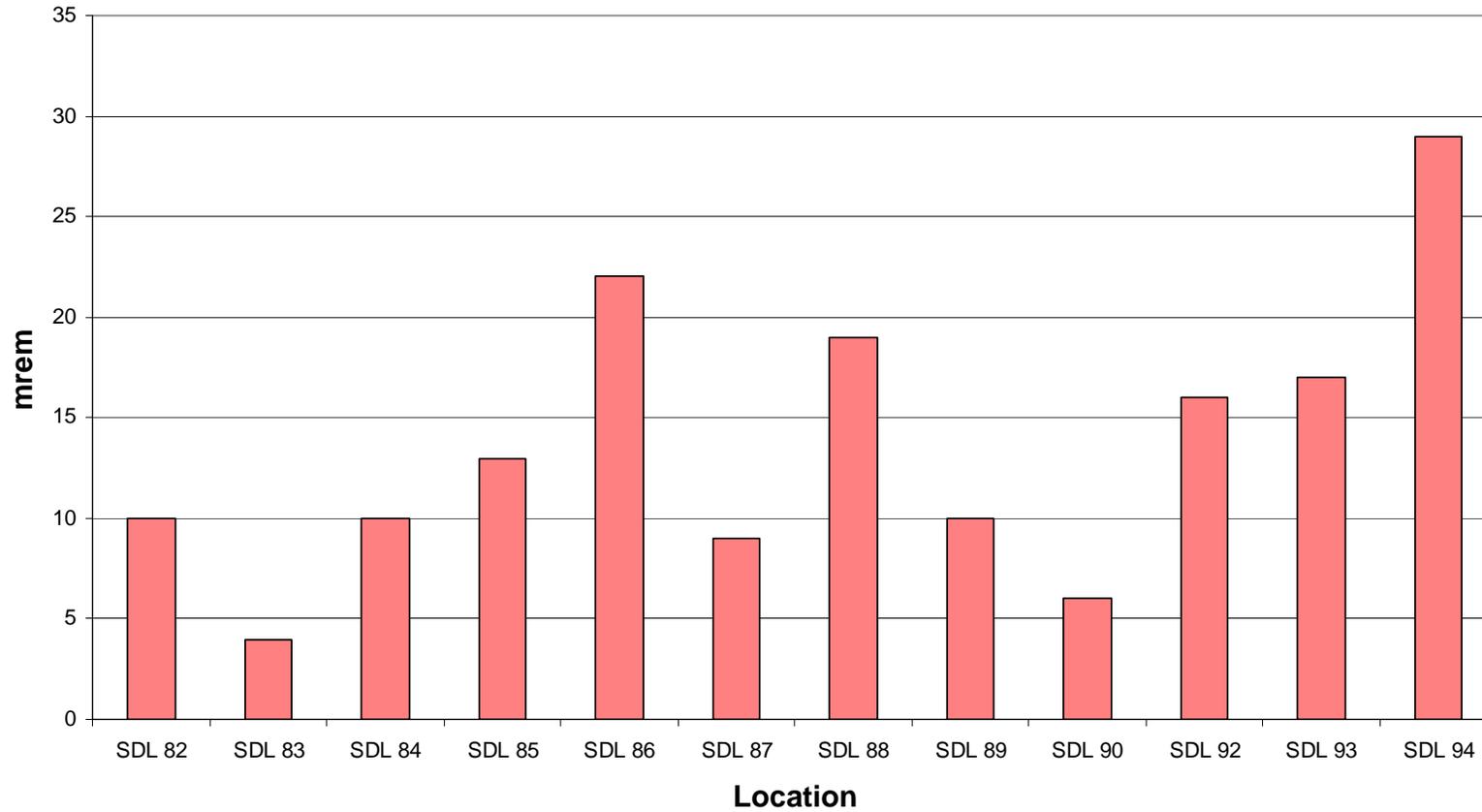
- Injection announced and alarmed
- 45 minute injection limit
- Floor closed for conditioning or troubles
- Posting

X-Ray Floor
NSLS Area Radiation Monitor Data - 2006
Data Measured **Through September**
0.23 Occupancy Factor Applied

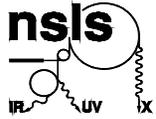


- Locations well defined, low access, limited area
- Posting and enunciators indicate injection
- Training in BLOSA

SDL
NSLS Area Radiation Monitor Data - 2006
Data Measured Through September
No Occupancy Factor



- These values are low
- Operation more variable than NSLS; less history
- All occupants monitored



Radiation Monitoring Summary

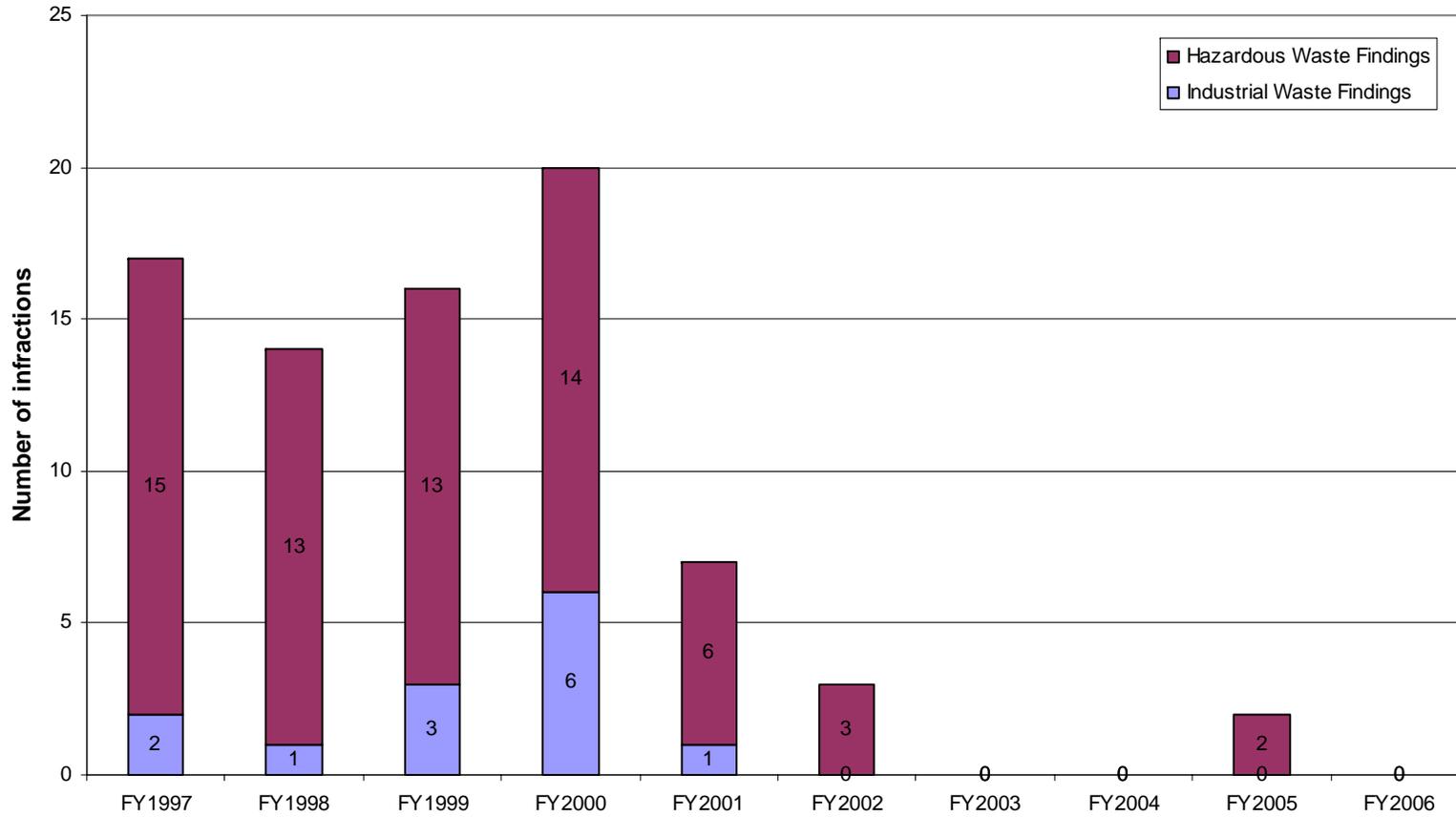
- Considerable effort devoted to control of this risk
 - Personnel dosimetry
 - Area TLD's
 - Chipmunks
 - Alarms, interlocked enunciators, posting
 - Operation procedures, alarm response procedures
 - Beam line surveys
 - Synchrotron surveys
 - Routine ALARA discussion
- Personnel exposure well controlled
- Mature and effective program

2006 ESH Performance Measures

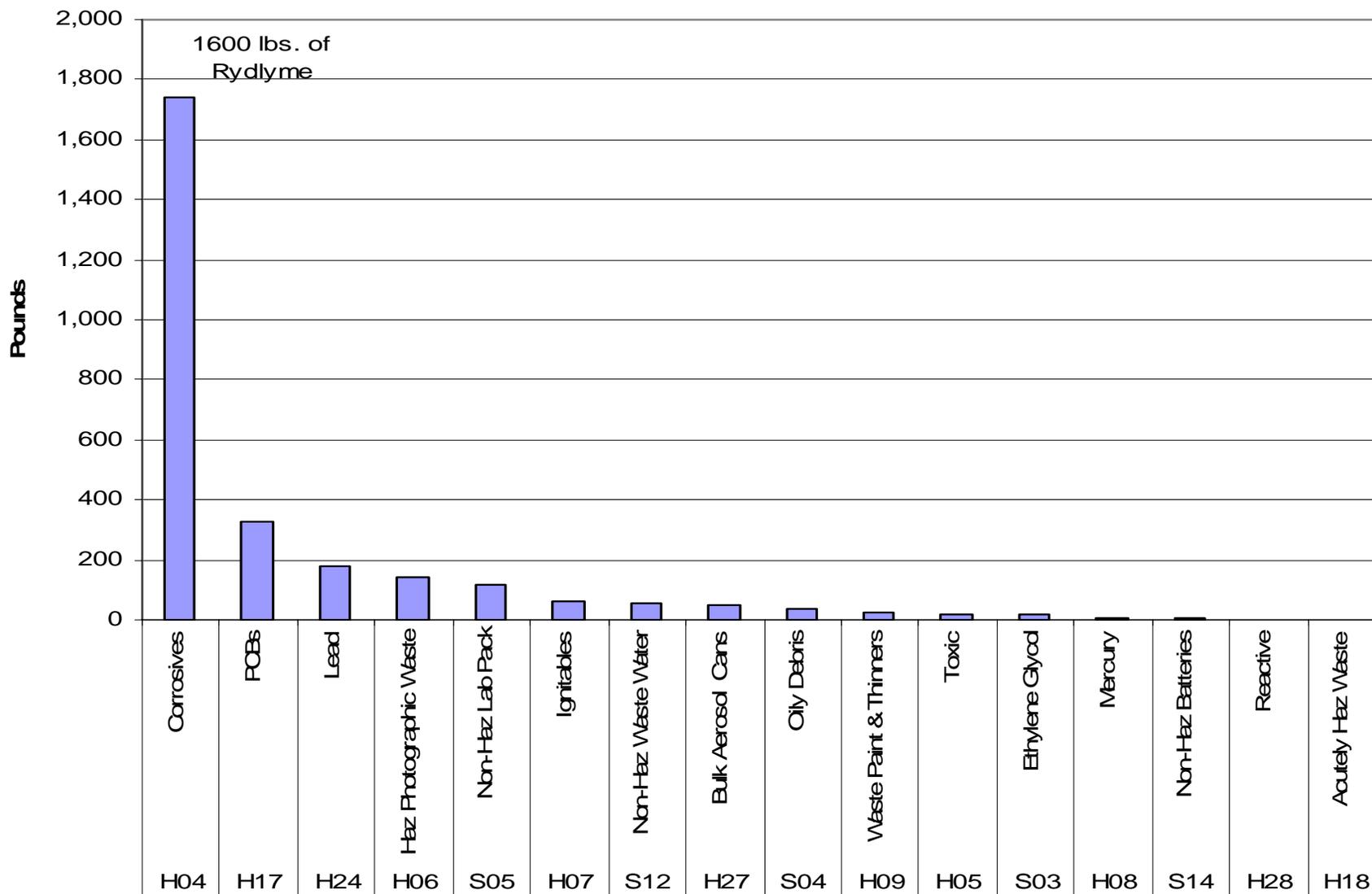
- Progress on ESH Targets
- Results of assessments and audits
- Tier I
- Traffic violations
- Training statistics
- Injuries
- Incidents
- Radiation exposure
- **Hazardous waste generation**
- Spills

Regulation Compliance (Tier I)

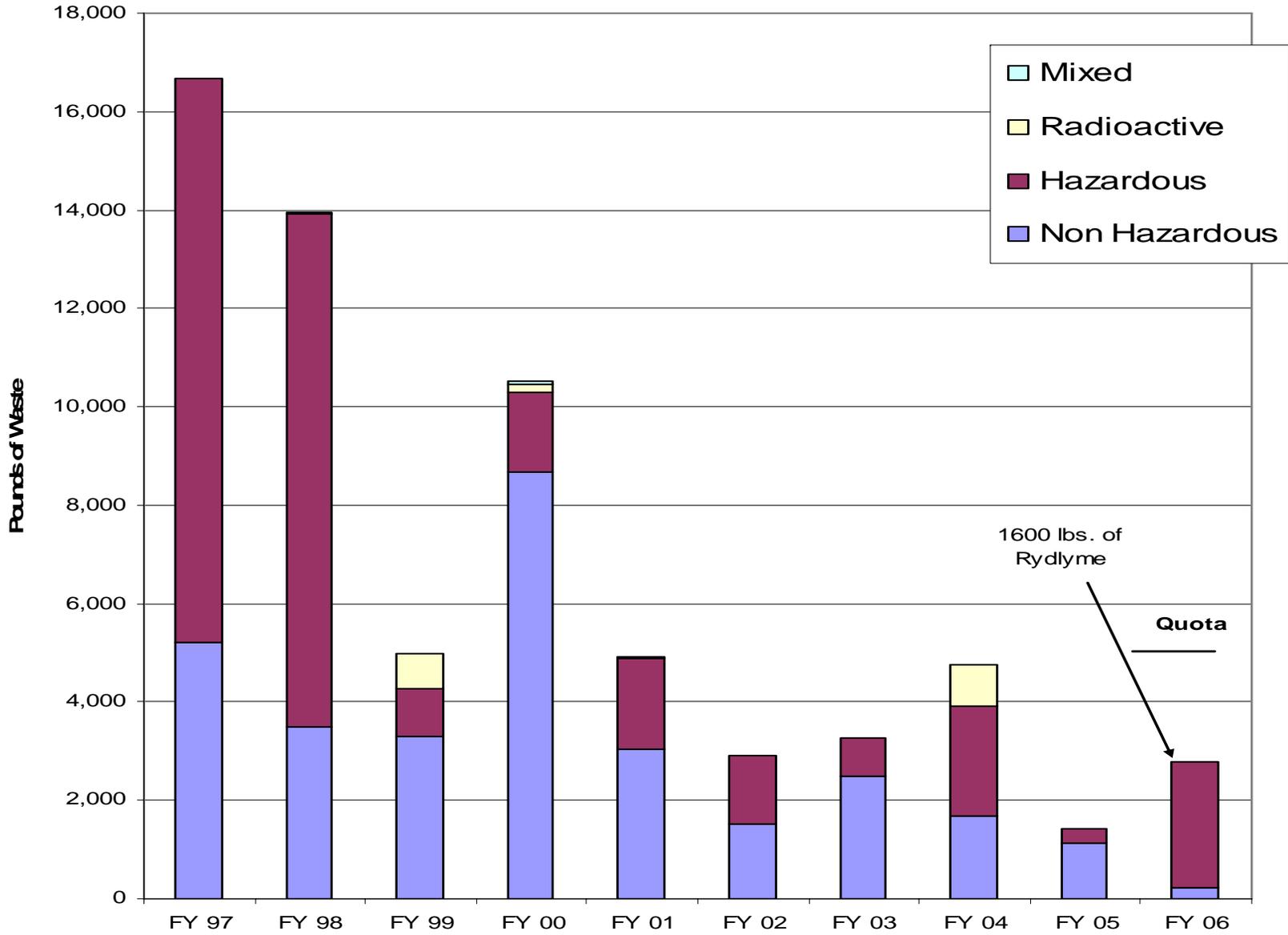
NSLS Waste Findings per year



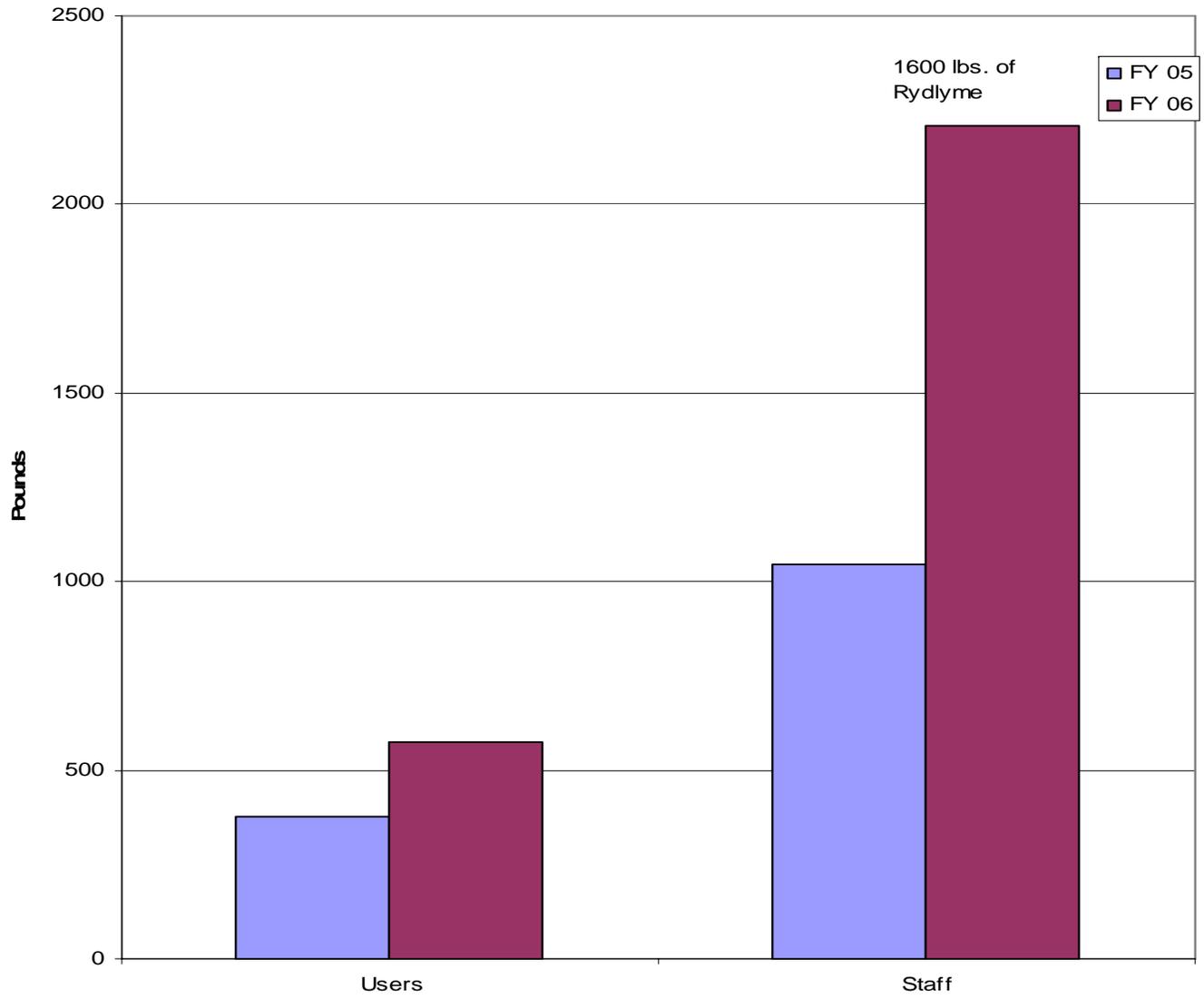
2006 Sorted Waste Streams



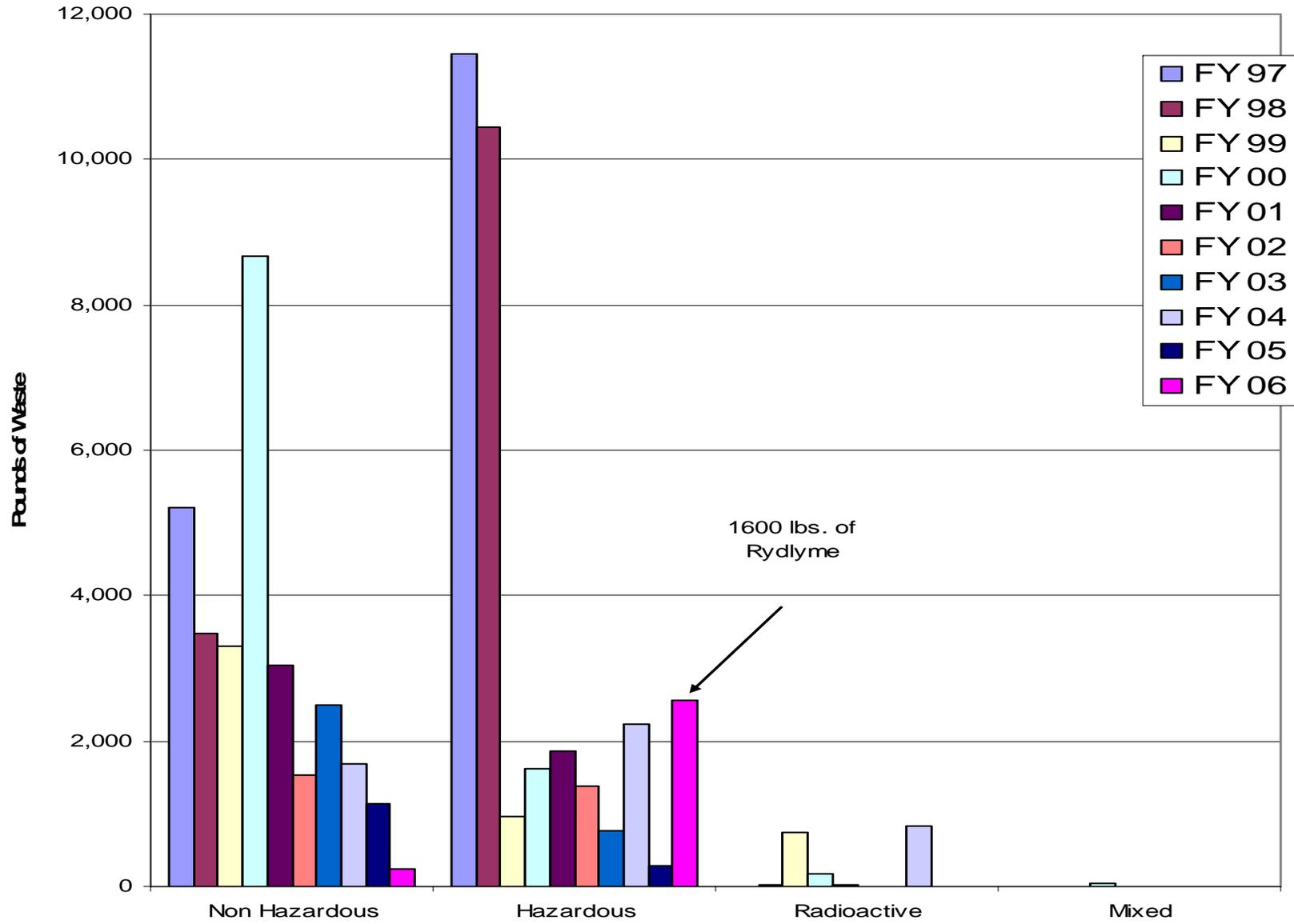
NSLS Waste Totals



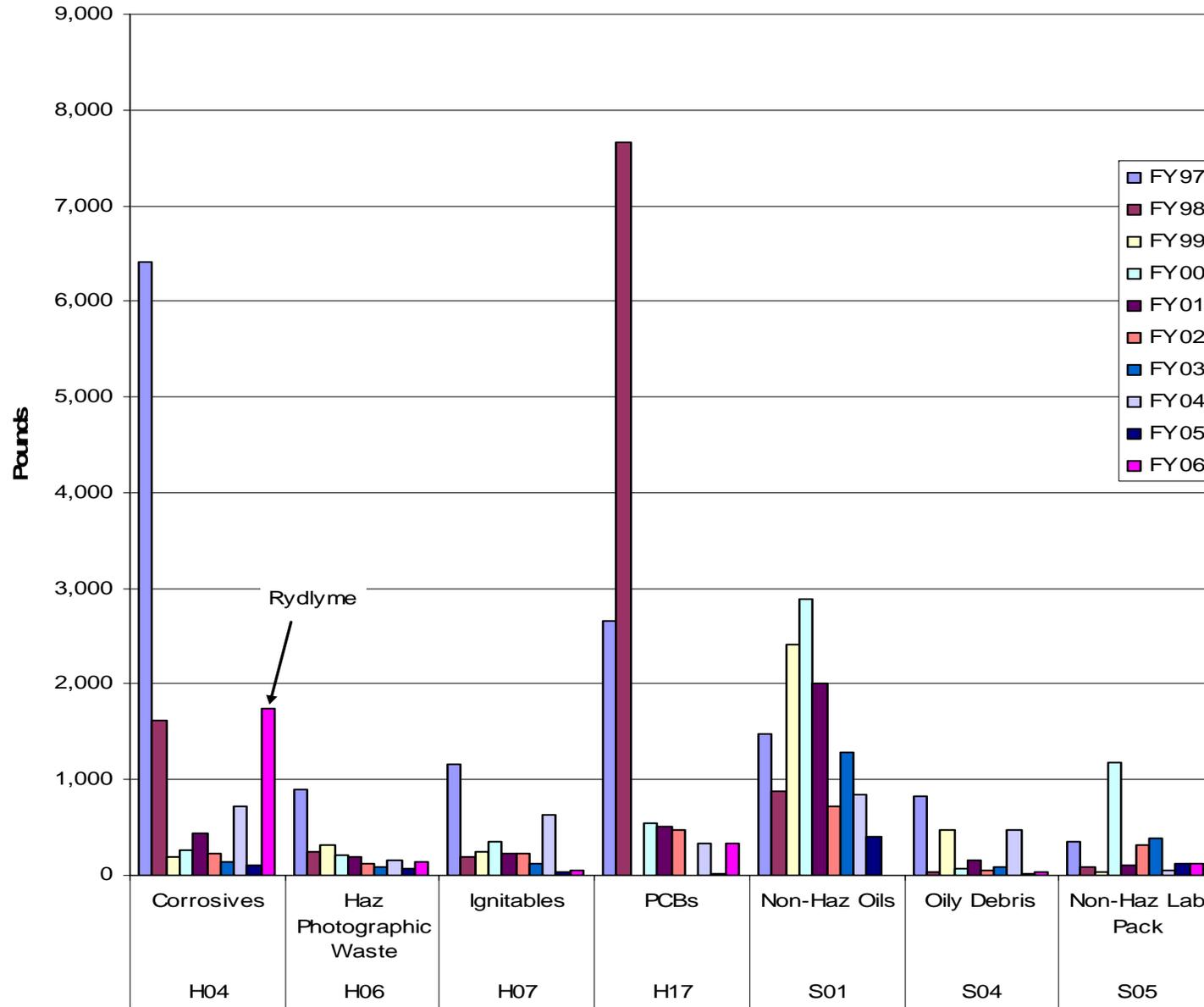
Users vs. Staff Generation Rates



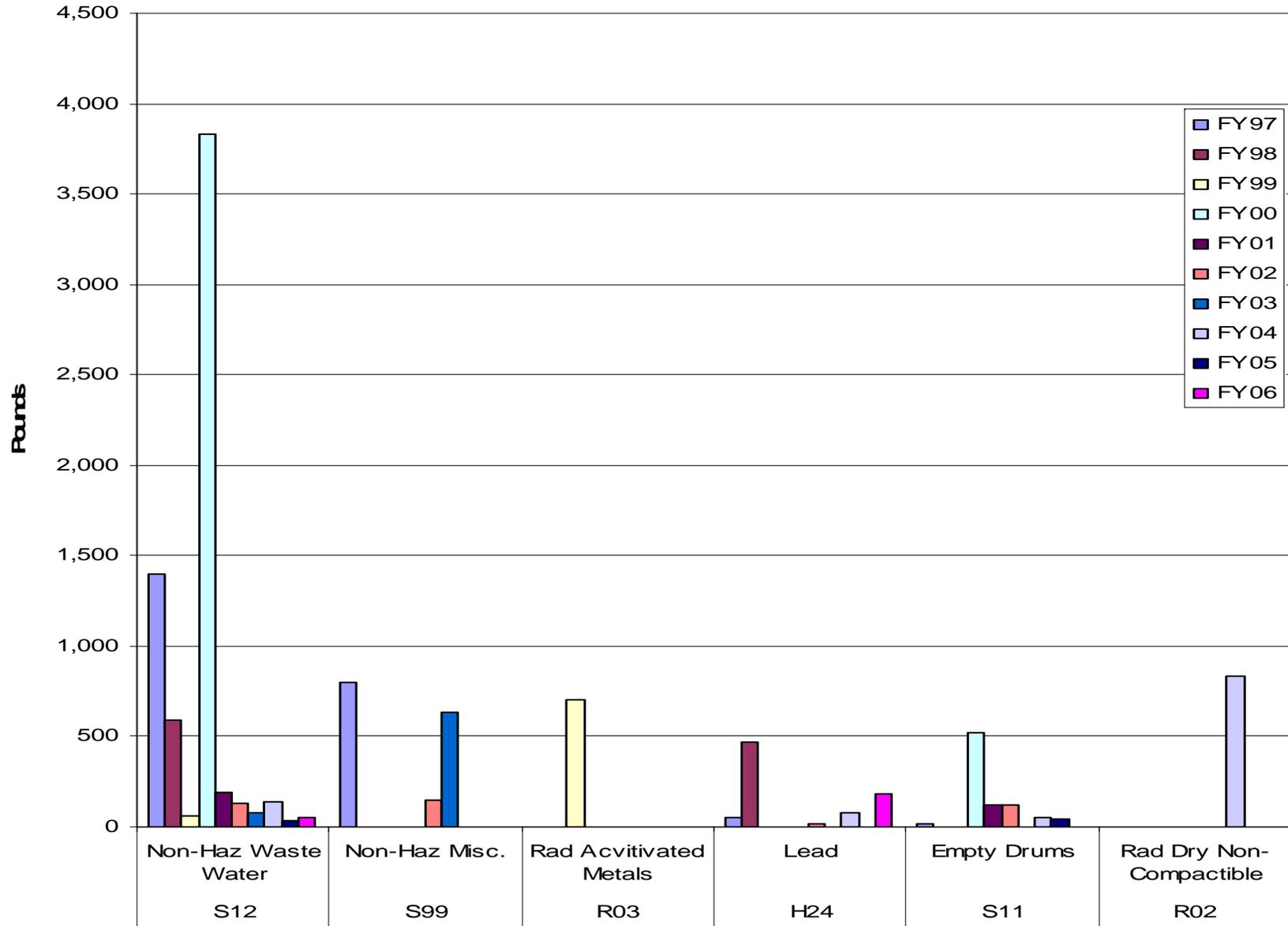
NLS Waste History



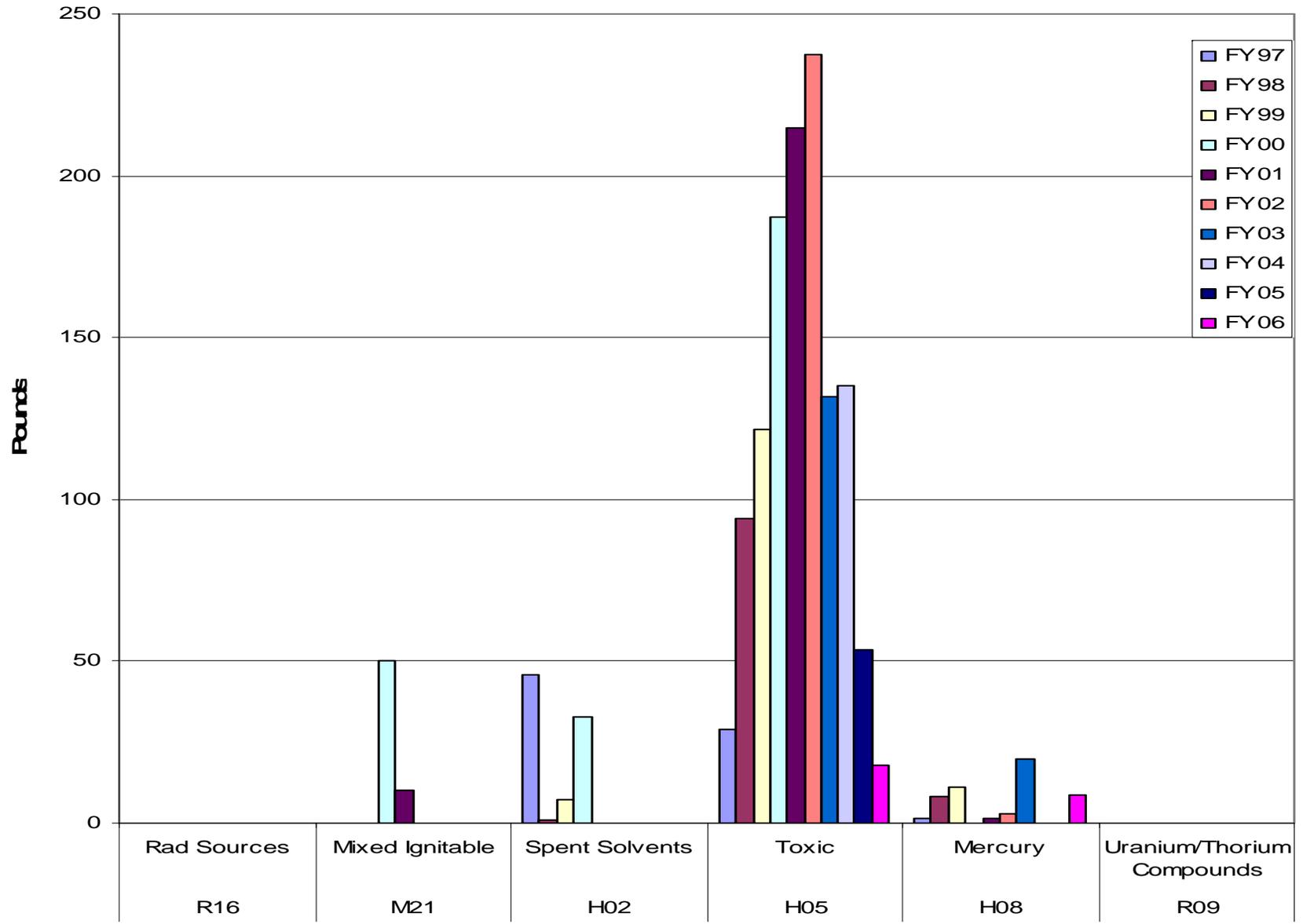
NSLS Waste Streams



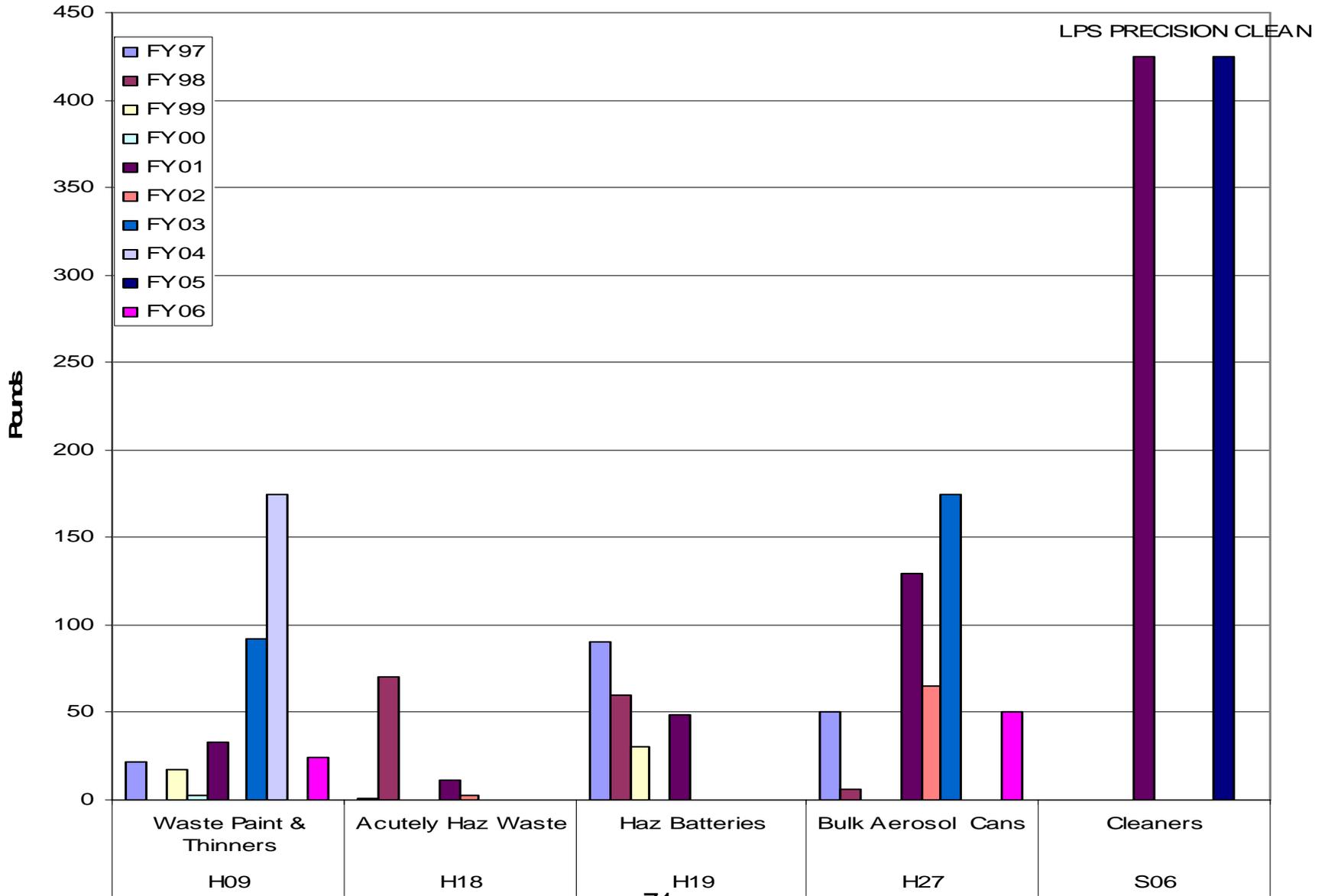
NSLS Waste Streams



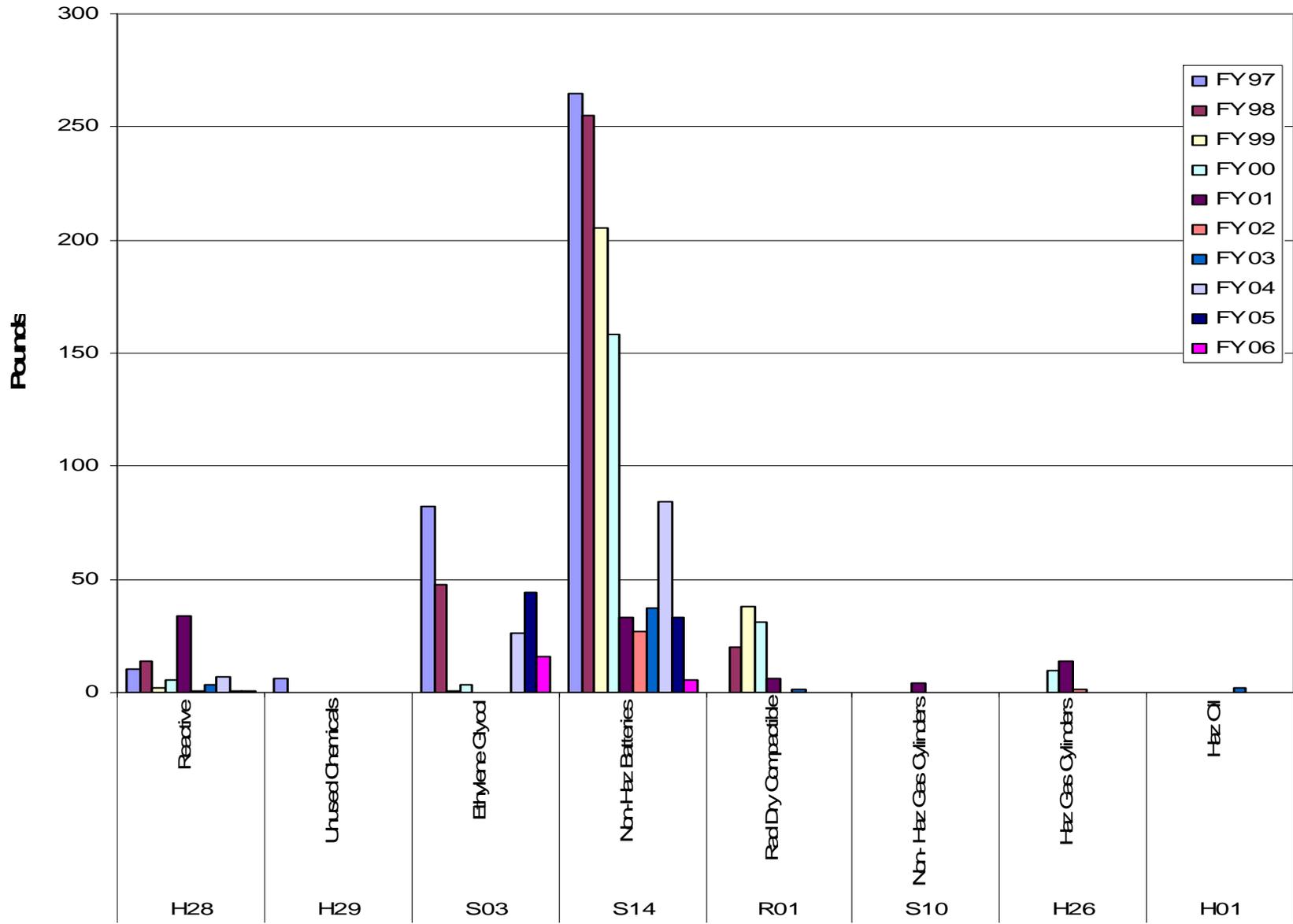
NLS Waste Streams

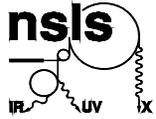


NSLS Waste Stream



NSLS Waste Streams



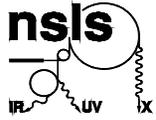


Waste Summary

- Aggressive management of the 90 day storage area and the ~23 satellite accumulation areas is working
 - Wastes highlighted during experiment safety review
 - ESH Specialist personal involvement
- Excellent tracking and trending allows us to focus on problem items
- Big items have been captured; becoming harder to reduce
 - Prefilters have reduced deionization bed regeneration waste **AND** now handled off site
 - Ridlyme waste water resolved
 - Oil testing underway

2006 ESH 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**



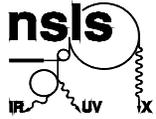
Spill History

-
- 1 spill in FY 2000 (PCB oil spill from capacitor; minor, contained)

- **No spills: 2001 through 2005**

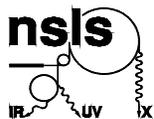
- 1 spill in 2006 = Acetonitrile





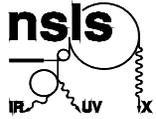
Acetonitrile Spill

- ~1 liter spilled
- NSLS Operations and User response was quick
- Spill kit nearby; Clean-up complete in ~10 minutes
- BNL response incomplete
 - Communication confused (No pager activation)
- No personnel over exposure, **but** entry to area without complete information.
- ~ 50 ml to the drain; water diverted; **No outside agency report**
- Detailed critique; 9 corrective actions (7 closed)
 - Reduce glass storage to < 1 liter
 - Distribute, “NSLS Highlight”
 - Review procedures and JRA’s
 - Review training
 - Review BNL guidance for response (SBMS)



Spill Preparation

- Spill kits distributed on the experiment floor
- Information distributed in 'NSLS Highlights'
- All liquid reagents stored in glass must be < 1 liter
- Secondary containment
- Operations Coordinator spill response procedure
 - Annual training
- Annual removal of legacy reagents
- Minimize volumes through experiment safety review
- Last 2 annual emergency response drills = spills

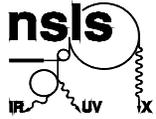


Incidents, Radiation, Wastes, Spills Summary

- Incidents investigated; lessons learned
- Radiation risk well managed
- Wastes minimized and tracked carefully
- Spills unusual; good preparation

- Programs **effective** and **adequate**?
 - Resource and information
 - ID risks
 - Performance measures
 - Regulations
 - Stakeholder concerns

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



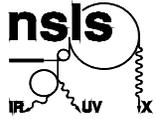
Stakeholder Involvement

External

-
- Vibrant, creative web site = tell our story
 - ESH prominent and comprehensive
 - Monthly science highlight
 - Active education program
 - Graduate degrees (7 full time graduate students)
 - High school projects
 - Summer Students (18 High School & Graduate students)
 - Student X15B **Webcast**; BNL & SBU; Local creek soil
 - 20 Sayville High School (Chemistry & Earth Science)
 - “Take Our Daughters and Sons to Work” (>30 children)
 - Summer Sunday
 - 40 NSLS volunteers
 - 650 visitors
 - Overview at Berkner; 14 ‘hands-on’ displays; toys; floor tour raffles



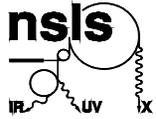




Stakeholder Involvement

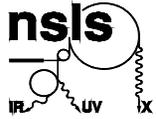
External

- Numerous NSLS facility tours
 - Special tour for the Community Advisory Council (CAC)
- NSLS II Environmental Assessment presentations
 - Community Advisory Council
 - Brookhaven Executive Roundtable
 - NYS Department of Health
 - NYS Department of Environmental Conservation



Stakeholder Involvement Internal & External

- Strong ESH Improvement committee
- ISM Safety Moments
- ESH presentation at all Town Meetings
- ESH presentation at annual User meeting
- ESH prominent at weekly User meetings
- Staff involvement in JRA & FRA development
- Staff involvement ESH committees
 - ESH committee
 - Interlock Working Group
 - ALARA
 - Beam Line Review



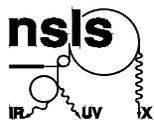
Stakeholder Involvement Recognition

- 1 staff member received Site wide Safety Steward (S3) award:
 - Electrical hazard reduction
- 2 staff members submitted to S2 program
 - 1 accepted = install ramp at the East roll-up door
- 2 staff member submitted to P2 program
 - 1 accepted = purchase aerosol can popper
- 2 staff members received Spotlight awards for safety
 - Improve beam line safety configuration control
- 1 staff member Brookhaven Award for ESH contribution





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

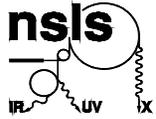


FY 2006 ESH Costs

-
- Total Direct Cost ~ \$655,000
(Not including NSLS ESH salaries)

 - RCD Program Costs
 - RCD Support & Oversight (~ 2.0 FTE) ~ \$242,000
 - Dosimetry ~ \$115,000
 - Instrument Calibration and Maintenance ~ \$ 20,000

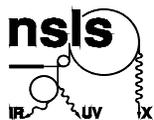
 - EMS & OHSAS Implementation Costs
 - Laboratory overhead
 - ECR support ~ 0.3 FTE
 - SHSD support ~0.5 FTE
 - Direct charges for waste disposal ~ \$ 72,000



FY 2006 ESH Staff Costs

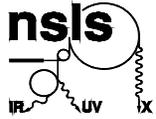
- NSLS ESH/Q Staff 7.5 FTE's
- NSLS Staff
 - Significant resources required for:
 - Training
 - Work planning
 - Committee participation
 - Event analysis
 - JRA/FRA development
 - 851 Gap Analysis
 - NFPA 70E implementation
 - ISM assessment
 - Audit participation

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



Current Draft Set of Targets for FY 07

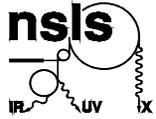
- Evaluate potential for solvent exposure at the NSLS and revise policies and practices as needed
- Evaluate the NSLS Lab Steward program for wet chemistry labs and revise responsibilities and authorities as needed
- Evaluate the BNL Interim Procedure for handling nanomaterial and determine the course of action to bring the NSLS into compliance.
- Prepare for and achieve success in the DOE ISM assessment scheduled for CY 07
- Accelerate implementation of NRTL inspection program and achieve compliance with 30 % of the current equipment inventory



Current Draft Set of Targets for FY 07

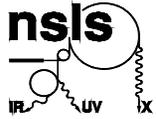
- Implement a safety observation process for NSLS managers through the section head level
- Complete review of the implications of Part 851 to the NSLS and establish an approved course of action
- Evaluate beam-loss mechanisms in Booster extraction process and determine if improved extraction efficiencies are achievable
- Establish a meaningful and cost-effective proposal for pollution prevention project at the NSLS and seek to secure funding for implementation.
- Continue development of web-based JTA questionnaire as a training needs assessment tool by incorporating remaining training requirements

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



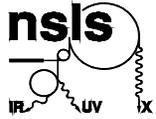
Required Questions

- Are the occupational safety, health, and environmental management systems **effective** in achieving
 - policy commitments?
 - objectives, targets and performance measures?
- 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?



Required Questions

- 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?



Required Questions

- 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